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ABSTRACT

THE INTERRELATIONSHIPS AMONG ADULT ATTACHMENT STYLE, WORK STRESS, SOCIAL SUPPORT, AND INDEXES OF STRAIN

By

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The present study explored the contributions of work stress, social support, and adult attachment styles to job satisfaction and symptomatic distress within an adult worker sample. Participants were 117 Michigan Sate University employees (61% staff; 39% faculty) who completed both categorical and continuous measures of adult attachment style along with self-report measures of the other variables under study. Due to their low frequencies in this sample, participants with preoccupied and fearful attachment styles were combined to form a single "anxious" attachment style group. This group was compared to workers evidencing secure and dismissive attachment styles. Results indicated that secure workers reported significantly less work stress and symptomatic distress than did anxiously attached workers. Relative to their anxious peers, secure workers also reported significantly higher levels of supervisor support. No main effects for attachment style on job satisfaction were observed. Dimensional measures of adult attachment orientation significantly enhanced the prediction of symptoms (but not job satisfaction) even after work stress and supervisor support levels were controlled. Implications of the findings to prior inconsistencies in the literature regarding relationships among work stress, social support, and indexes of work strain are discussed.

I dedicate this dissertation to my parents,
Lucille H. Schirmer and Clarence R. Schirmer (1918-1992).

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CHAPTER I

INTRODUCTION

Occupational stress is a major problem affecting the health and well being of millions of Americans each year. According to the 1985 National Health Interview Survey, approximately 11 million workers reported that they were experiencing health-endangering levels of "mental stress" at work (Shilling & Brackbill, 1987). The psychological consequences of work related stress are costly for the employer as well as the individual. In 1985 the insurance industry reported that "claims for gradual mental stress alone account for about 11% of all claims for occupational disease" (1985 report of the National Council on Compensation Insurance cited in Sauter, Murphy, & Hurrell, 1990). Furthermore, in a recent symposium, Joseph Hurrell, Associate Director of the National Institute for Occupational Safety and Health (NIOSH) reported that claims for job related stress disorders are increasing and are considered the most disabling occupational illness in terms of lost time (Hurrell, 1998). The exact cost of losses in productivity and employment, as well as in total expenditures for medical services, resulting from occupational stress has been difficult to calculate. However, Sauter et al. (1990) have projected that the expense of psychological disorders related to work stress costs in the tens of billions of dollars annually in the United States alone. Clearly, gaining a greater understanding of these disorders and their treatment would benefit both individual workers and industry.

The term 'stress' is often used to describe both the precipitant and the result of experiencing difficulty at work. For the purpose of this study, Fenlason and Beehr's (1994) distinction of stressors and strains will be adopted. *Stressors* are those events or demands that contribute to the experience of work related stress. *Strains* are the physical or emotional manifestations of work related stress. *Stress* will be reserved as a term to describe our general field of interest.

Reducing the effects of work related stressors has concerned psychologists, employers and the general public for at least two decades. The Michigan Person-Environment Fit (P-E fit) model is one of the most dominant etiological models of how occupational stress develops (Gore, 1987). This theory posits that a worker's experience of stressors and strain are a result of an imbalance between that individual's needs/characteristics and the environmental provisions on the job (Caplan, Cobb, French, Harrison, & Pinneau, 1975). In this model, the relationship between stressors and strain is moderated by individual difference variables such as defenses, coping predispositions, genetic factors, social background characteristics, and unmet needs. Therefore, according to the P-E fit model, not all workers will experience identical stressors in the same way.

Researchers have investigated numerous variables that may moderate the stressor-strain relationship. One popular notion is that by increasing a worker's social support system he/she may avoid many of the negative consequences of working with stressors. However, the exact method by which social support alleviates work related distress has been greatly debated among psychologists and researchers.

Researchers have proposed that social support reduces work related distress in three different ways. Fenlason and Beehr (1994) suggested the following summary of

this body of literature: social support reduces distress by (a) acting directly on strains (main effect), (b) acting directly on the stressors (main effect), and (c) "interacting with stressors so that the relation between stressors and strain is stronger for persons with low levels of support than for those with high levels of support" (p. 158). The idea that social support can directly reduce strains has been demonstrated consistently in the empirical literature on job stress (Blau, 1981; LaRocco & Jones, 1978; Leiter, 1991). However, mixed results have been found regarding the main effect of social support on stressors. Beehr (1985) speculated that the effect of social support on stressors may be more pronounced if the support is provided by supervisors rather than by peers or family members. This hypothesis has been partially supported in subsequent research (Fenlason & Beehr, 1994).

Research investigating the 'buffering effect' of social support on the relationship between stressors and strains has produced inconsistent findings. Whereas some authors (Gore, 1978; LaRocco, House, & French, 1980; Kobasa & Puccetti, 1983; Haines, Hurlbert, & Zimmer, 1991) have found support for the hypothesis that social support moderates the relationship between stress and strains, other researchers have found no support for the buffering hypothesis (Blau, 1981; Ganster, Fusiler, & Mayes, 1986; LaRocco & Jones, 1978). Other studies have found support for the buffering hypothesis, but not in the expected direction. In these studies the presence of social support appears to increase rather than decrease the effects of stressors on strain (Beehr, 1976; Kaufmann & Beehr, 1986). This result has been labeled 'reverse buffering'. Still other authors have reported both buffering and reverse buffering results (Chisholm, Kasl, & Mueller, 1986; Fenlason and Beehr, 1994).

These inconsistent findings have been the subject of a great deal of speculation. One hypothesis, first proposed by Beehr, King, and King (1990), and later by Fenlason and Beehr (1994), is that the content of the supportive communication influences the effect of social support on the relationship between stressors and strains. In a study of 173 professional secretaries, Fenlason and Beehr (1994) found that positive work related conversation was most helpful in reducing worker strains and that non-work related conversation is second best at producing this effect. However, they stated that negative work-related conversation does not appear to help workers reduce their experience of strains.

Another factor that may contribute to discrepant findings in the stress buffering literature is that researchers have not been consistent in their use of outcome measures. After reviewing this body of work, Beehr (1985) asserted, "it appears that the strains that are more health oriented (psychological or physiological health) and less attitude oriented (e.g., job satisfaction) are more likely to be affected by social support interacting with stressors" (p.387). While this theory has not been tested in a systematic manner, in accordance with the P-E Fit Model, it seems reasonable to hypothesize that individuals may be affected differently by occupational stressors and that social support may be helpful in relieving some indexes of strain but not others.

Finally, inadequacies in the conceptualization and measurement of social support may have contributed to inconsistent findings in the stress buffering literature. In a review of this literature, Coyne and DeLongis (1986) stated that the concept of social support becomes "systematically misleading when it is accepted in place of a more elaborated understanding of the complexities of people's involvement with others"

(p. 458). They asserted that it is important to research how an individual's personal characteristics affect the way that he/she finds, develops, nurtures, and terminates relationships. Sarason, Sarason, and Shearin (1986) contended that much social support research has been based on the erroneous assumption that social support is an environmental provision. They argued that it is important to consider the contribution that people make to their own social support levels and to include personality variables in the design of research on social support. Three studies conducted by these authors revealed evidence that social support may indeed possess trait-like characteristics. They found that self-reports of social support availability and satisfaction are stable for up to 3 years and appear consistent with retrospective indexes of early patterns of social contact. Individual attachment style is one personality variable that may provide an explanation for this consistency in social support patterns over time.

Attachment Style and the Development of Social Support

The concept of "attachment styles" has been derived from Attachment theory (Bowlby 1969, 1982; Ainsworth, 1978, 1982). Attachment theory posits that the outcome of children's early attempts at proximity seeking contributes to their subsequent expectations of their own competence and lovability, and of the accessibility and responsiveness of significant others in their social environment. These cognitive expectancies are referred to as the person's "internal working model" of self and others. Lopez (1995) stated that Bowlby "considered them 'working' models because they (a) organized internal appraisals and interpersonal behaviors along pathways that were adaptive in the persons earlier development, and (b) thereby shaped the person's later social experience in schema-consistent ways." (p. 399). These working models develop

into "attachment styles", or patterns of relating to self and others, which are especially activated when the individual is under stress. Contemporary attachment theory has been extended to provide a framework for understanding adult adjustment. Current research supports the existence of four distinct adult attachment styles (Bartholomew, 1990; Bartholomew & Horowitz, 1991).

Recent research has revealed that an individual's adult attachment style influences his/her affect regulation, perception of social support, development of network orientation (beliefs, attitudes, and expectations regarding the utility of social support), and satisfaction with support that is provided (Kobak & Sceery, 1988; Priel & Shamai, 1995; Wallace & Vaux, 1993). This body of literature suggests that by understanding an individual's adult attachment style we may be better able to predict the usefulness of social support in buffering the stressor-strain relationship. Furthermore, there has been some evidence that the construct of adult attachment styles may be helpful in understanding an individual's perceptions and behaviors in occupational settings.

Attachment Theory and Vocational Behavior

Although most research on adult attachment styles has focused on romantic relationships, several authors have begun to explore the role of adult attachment style in vocational behavior (Blustein, Schultheiss, & Prezioso, 1995; Hardy & Barkham, 1994; Hazan & Shaver, 1990). Hazan and Shaver (1990) provided theoretical and empirical support for attachment style differences in how individuals approach their work. They found that secure workers reported greater work adjustment than those individuals's endorsing insecure attachment styles. In addition, Hardy and Barkham (1994) studied a clinical population who where reporting occupational stress and depression. They found

attachment style differences in worker's anxiety regarding their job performance, work relationships, and job satisfaction.

Although these findings lend support to the hypothesis that an individual's adult attachment style influences work-related attitudes and behaviors, there are several important weaknesses in this literature. First, sampling techniques that limit the generalizability of findings have been frequently used. Second, the methods of measurement used in these studies were also problematic. Hazan and Shaver's study used exploratory and unstandardized measures of work behavior. They also relied solely on a single item forced choice measure to indicate attachment style. Hardy and Barkham relied upon a new measure developed for their study to assess attachment style.

Finally, those studies which directly attempted to measure the constructs underlying attachment did so using a three-category model of attachment (secure, anxious/ambivalent, and avoidant) based on the work of Mary Ainsworth (Ainsworth, et al., 1978). Recently, Bartholomew and Horowitz (1991) have developed a newer model to describe attachment style in adults which identifies four different attachment categories: secure, preoccupied, dismissive, and fearful.

Summary and Problem Statement

The literature examining the influence of social support on the relationship between work stressors and strains has produced conflicting results. It has been hypothesized that this inconsistency may be due to personality differences that may moderate the effect of social support on the stressor-strain relationship. Adult attachment style is an individual difference variable that may both directly affect work-related strains and also moderate stressor-strain relationships. It has been linked to

network orientation which describes the beliefs, attitudes, and expectations that people hold regarding the usefulness of social support in providing assistance to deal with life problems. It has also been demonstrated that an individual's attachment style is related to his/her perception and satisfaction with social support, as well as his/her ability to regulate affect. Therefore, an individual's adult attachment style may predict how the provision of social support may influence the stressor-strain relationship. To enhance the current research base, future studies need to incorporate the following: 1) the recently developed four-category attachment typology; 2) well established measures of all constructs being examined; 3) measures of both psychological health and work appraisal oriented strains (e.g., job satisfaction); and 4) a sampling strategy which is not limited to one class or type of occupation.

The purpose of this study is to examine the contributions of work-related stressors, social support, and adult attachment styles to job satisfaction and psychological functioning within an adult worker sample. Special consideration will be given to whether stressor-strain and social support-strain relationships are moderated by an adult worker's attachment style. In addition, the direct contribution of attachment style in reducing strains will be explored.

Should support be found for the moderating effect of attachment style on the relationship between work stress and social support, this study would assist in resolving a long-standing controversy in the literature on stress management and social support. Furthermore, this evidence would contribute to the growing body of literature indicating that workers' attachment styles may influence their work-related attitudes and behaviors. Support for this hypothesis would also underscore the desirability of considering adult

attachment styles as a component in the design of stress management plans for workers. For example, although some workers may benefit from group oriented stress management programs which encourage supportive exchanges among members, others may receive greater assistance from completely didactic sessions. In fact, individuals who may develop greater strains when social support is delivered may benefit from information regarding how to say 'no' when such support is proffered.

Given the great deal of time that adults devote to work and the detrimental consequences of experiencing stress in work settings, it is important that we be able to manage work stress in the most effective manner possible. Taking significant individual differences into account when designing stress management plans may be profitable for both workers and industry.

CHAPTER II

REVIEW OF THE LITERATURE

This chapter reviews three lines of research relevant to the proposed study: 1) studies which examine interrelationships among work stressors, social support and strains; 2) studies which investigate how variation in adult attachment style is related to individual differences in the perception and expectations of others, as well as in relationship behavior; and 3) studies which propose that attachment theory can be useful in understanding work-related attitudes and behaviors.

Occupational Stress

Many negative consequences of work stress have been discussed in the medical, psychological and risk management literature. House, Wells, Landerman, McMichael, and Kaplan (1979) demonstrated the wide variety of strains that workers may experience when under stress in a study of 1,809 white, male, blue-collar workers. In this study, the authors examined the relationships of perceived stress to reports of ill health and to five medical conditions. Controlling for confounding variables (e.g., exposure to noxious chemical agents), they found that perceived stress was positively related to self-reported physical symptoms such as angina, ulcers, and medical evidence of hypertension. They also found that perceived stress was positively related to neurotic symptoms.

Numerous psychological strains have been related to job stress in the literature including depression, anxiety, irritability, somatic complaints, and job dissatisfaction

(Fenlason & Beehr, 1994). Caplan et al. (1975) found evidence of a strong job stress-job dissatisfaction relationship in their study of 2,010 male workers from 23 occupations. Basing their predictions on the Michigan Person-Environment Fit (P-E fit) model of job stress, the authors posited that negative psychological and physical consequences (strains) result from a discrepancy between participants' work related needs/desires and their perceptions of how well these needs/desires were met in their work environment. While obtaining support for the relationship between job stress and job dissatisfaction, they did not find a significant direct relationship between job stress and physiological strains (e.g., blood pressure, pulse rate, cholesterol) or on psychological strains such as depression, irritation, and somatic complaints.

Although the idea persists that occupational stress contributes to the negative physical and emotional experiences of workers, there are many inconsistent findings in this literature. Numerous limitations in this research base may be responsible for these discrepant results. As recently as 1987, Kahn acknowledged that researchers in this area have not agreed on the use of the term *stress*, nor its definition. He cited Selye's 1976 use of the term *stressor* to describe an external stimulus that evokes the "nonspecific response of the body to any demand made upon it" which he called the *stress response* as one definition (Kahn, 1987, p. 312). Other authors have used the term *stress* to define external stimuli and *strain* as its effect. Kahn advocated that the term *stressors* be used to refer to external stimuli; the term *strain* be designated as the product of experiencing stressors; and the term *stress* be reserved for a general description of this area of interest. These distinctions appear to be gaining popularity in more recent research (Fenlason & Beehr, 1994).

Barone (1988) criticized the occupational stress literature for failing to be grounded in a sophisticated assessment of work stressors. He reported that many studies have relied upon relatively few questions, and sometimes single items or the presence of indicators such as 'turn over', to assess work related stressors. In a similar vein, he was critical of studies using scales designed by Caplan et al.(1975) to assess stressors. Barone noted that these scales were developed using an exclusively male participant pool, consisting primarily of blue-collar workers. In response to these criticisms, Barone developed and validated the Work Stress Inventory via four studies involving a diverse group of over 1300 workers (Barone,1988).

Another criticism of the occupational stress literature is that it has been difficult to make comparisons across studies due to inconsistent operational definitions of strains. Some research have explored behavioral strains such as poor job performance, others have obtained physiological measures (e.g., blood pressure, pulse rate, cholesterol), and still others have relied upon self-reports of psychological distress symptoms (e.g. somatic complaints, anxiety, depression, and job satisfaction). Again, these studies often rely heavily on the instrumentation developed by Caplan et al. (1975) on male blue-collar workers. These measures contain relatively few items per identified strain.

Restricted sampling has also created problems in the generalizability of much of the occupational stress literature. Many studies have been confined to one sex and/or to specific occupations. Furthermore, failure to control for potential covariates such as 'length of service' has been characteristic of these studies (Blau, 1981). Investigating such relationships, Blau (1981) found a strong negative relationship between length of service and job strains (ineffective performance and job dissatisfaction).

Finally, consistent with the P-E fit model of work stress, individual difference variables may be responsible for discrepant findings among studies exploring the relationship between occupational stressors and strains. The search for potential moderators of this relationship has focused primarily on the interrelationships of social support, stressors, and strains.

Social Support and the Work Stress-Strain Relationship

Perhaps inspired by earlier leadership studies, which revealed that there was a relationship between perceived supervisor support and subordinate job satisfaction, Caplan et al. (1975) investigated the effect of social support on the job stress-strain relationship (Blau, 1981). The popular belief that social support ameliorates some of the negative effects of work stress can be traced back to this study. The authors of this investigation concluded:

> A final type of environmental change which may be used to promote psychological well-being is the provision of social support from one's supervisor and from one's co-workers...Our findings indicate that social support can reduce job dissatisfaction and depression. (Caplan et al., 1975, p. 210)

Since the publication of this study, a great deal of research has investigated the relationship among these variables.

Social support has been defined in different ways in the literature. House (1981) summarized the distinctions in social support made by previous researchers into four groups: emotional support, appraisal support, information support, and instrumental support. However, Beehr (1985) reported that there is little empirical evidence upon which these distinctions were based. He suggested a division of social support into two

general types: emotional and instrumental support. *Emotional support* includes behaviors such as listening to another individual or expressing concern. *Instrumental support* includes delivering tangible assistance to another worker in the form of physical assistance, advice, knowledge, or the material goods needed to accomplish his/her job. More recently, researchers have combined scales of emotional and instrumental support into a single measure. This strategy is supported by findings that these scales are highly intercorrelated when the support is provided by a single source, such as from supervisors (Caplan et al., 1975; Fenlason & Beehr, 1994; Kaufmann & Beehr, 1986).

Research exploring the interrelationships of work stressors, social support, and strains has proceeded from a predominantly atheoretical basis. Some research has focused on the main effect of social support on work stressors and strains while others have explored social support as a buffer of the effect of stressors on strains.

Fenlason and Beehr (1994) asserted that, "The idea that social support can directly reduce strains is consistent with most of the empirical literature on job stress" (p. 158). They summarized the findings of numerous authors who have demonstrated that social support is negatively correlated with various types of strains including job dissatisfaction, life dissatisfaction, somatic complaints, depression, and burnout (Blau, 1981; Ganster et al., 1986; LaRocco & Jones, 1978; Leiter, 1991). However, there has been little research and mixed findings regarding the role of social support in directly reducing work stressors. Cohen and Willis (1985) hypothesized that social support may act upon a worker's appraisal of a stressor making him or her perceive a situation as less threatening. Other researchers have found negative correlations between supervisor support and role stressors, time pressure, and role ambiguity (Beehr, 1976; Blau, 1980;

Caplan et al., 1975). However, LaRocco and Jones (1978) did not find support for a main effect of leader or co-worker social support on work stressors (i.e., perceived conflict and ambiguity of organizational goals).

The notion that social support may buffer the effects of work stressors has been widely studied over the 20 years since the publication of Caplan et al.'s (1975) landmark study; however, this literature has yielded inconsistent support for buffering hypotheses. The following section will organize these studies into three groups: (a) those which yielded support for the "buffering hypothesis", (b) those which found no support for the buffering hypothesis, and (c) those which demonstrated instances of "reverse buffering" and "mixed buffering".

Support for the Buffering Hypothesis

Gore (1978) examined social support as a buffer of the health consequences of unemployment. She found that when unemployed workers were also unsupported they reported significantly greater negative changes in their health status (blood pressure, cholesterol level, and illness symptoms) than did their supported peers. House and Wells (1978) found that supervisor support moderated the relationship between a stressor labeled "role conflict" and neurosis. Support from the worker's spouse also appeared to have a buffering effect with regard to several job stressors and strains. LaRocco et al. (1980) studied men from 23 occupations and found that support buffered the effects of stressors on depression, irritation, anxiety, and on somatic complaints. No evidence was found for the buffering effect of social support on job related strains such as job dissatisfaction and boredom. Co-worker support was found to be more effective at buffering workers from strains than was support from either supervisors or from family.

Although acknowledging the popularity of the above findings, Haines et al. (1991) criticized the stress buffering research on primarily methodological grounds. They observed that previous research frequently analyzed multiple bivariate relationships rather than using a more appropriate multiple regression procedure, thereby increasing the risk of Type 1 error in these studies. The authors were also critical of the sampling procedures used in previous studies, noting that only male participants, representing a few industries and occupations, were sampled. This restricted sampling strategy severely limits the generalizability of the findings of these studies. Haines et al. (1991) attempted to address these issues in a study of 685 workers (16 years and older) drawn from a national sample. In particular, their sampling pool consisted of both men and women from a variety of occupations. Additionally, the authors used multiple regression, where appropriate, to analyze their data. Their findings suggested that workers from different age, sex, education and income groups may be differentially exposed to stressors and that these factors should be examined as potential confounding variables in future research. They also found a significant relationship between work support and several indexes of work strain. While arguing that "support for the buffer hypothesis is more tenuous than it appears", the authors found that work support did moderate the relationship between stressors and strains specifically caused by workload and conflict (Haines et al., 1991, p. 226). They found no differences in this effect across occupational groups.

The Absence of Buffering

Although social support has emerged as the primary moderator hypothesized to mitigate the effects of stress in the workplace, not all research has yielded support for this "buffering" expectation. LaRocco and Jones (1978), while supporting the hypothesis that

there is a main effect of social support on strains, found no evidence for the buffering hypotheses in a survey of 3,725 Navy enlisted personnel. Blau (1981) investigated the buffering hypothesis in study testing the person-environmental fit model of job stress. He found only partial support for this model. Specifically, he concluded that although work stress and social support had independent main effects on job dissatisfaction, "no type of social support (supervisor, co-worker, or off-job) acted as a buffer between any job stress-job strain relationships" (Blau, 1981, p. 299). Interestingly, he did find, and dismiss, two "buffering" interactions in this study. He conjectured that these findings were merely evidence of Type I error in his statistical analysis (i.e., due to the large number of regression equations employed).

Consistent with the above findings, Ganster et al. (1986) found modest support for the direct effect of social support in lowering strain, but no support for any buffering effect of social support on the relationship between stressors and strains. These authors also acknowledged the problematic nature of computing a large number of regression equations to investigate the potential buffering effects of different types of social support on various stressors and strains. They also concluded that the buffering hypothesis may receive more support in studies concerning stressful life events rather than specific studies of work stress. The authors speculated that this may be due to the fact that many life stressors (e.g., death of a spouse or change in residence) directly affect access to social support whereas work stressors do not.

Instances of "Reverse Buffering" and "Mixed Buffering"

Some of the most intriguing findings in the buffering literature have been those studies which reported a 'reverse buffering effect'. In these studies, increased social

support appeared to exacerbate the effects of stressors on strains. Beehr (1976) found that coworker support appeared to increase the effects of role ambiguity on worker job dissatisfaction. This author hypothesized that workers experiencing this stressor may communicate with each other in a manner which reduces self-blame, instead assigning blame for role ambiguity on the job itself. He stated that this type of communication may produce greater overall job dissatisfaction.

In a subsequent study of nurses, Kaufmann and Beehr (1986) found that both work and non-work related support had reverse buffering effects on the relationship between an index of work stressors (future job ambiguity and role overload) and psychosomatic strain. There was also a reverse buffering effect of social support in the relationship between work stressors and absenteeism. These authors offered three possible explanations for their findings. First, they extended Beehr's (1976) argument that the content of supportive communication may either help workers see that their situation is not as difficult as it appears, or it may convince them that they are suffering terribly. Second, they speculated that the source of support may not be independent of the source of stress (e.g., a supervisor who is causing stress among workers approaches an individual to give support but actually increases the workers stress level by singling him/her out). Third, they offered the possibility that frequent stressors leading to greater strains may cause workers to seek increased levels of support, as opposed to social support interacting with stressors to produce more strain.

In addition to incidents of reverse buffering in this literature, there have also been reports of "mixed buffering". In these studies, social support was found to reduce the effect of some strains from certain work stressors, but at the same time, increase the

effect of other strains from these work stressors. Chisholm, Kasl, and Mueller (1986) found mixed buffering results in their study of nuclear worker responses to the Three Mile Island (TMI) accident. Again, these authors found evidence for a main effect of social support on strains such as job satisfaction, greater optimism about their future employment as nuclear workers, and fewer psychosomatic symptoms. Despite these positive main effects, social support did not always moderate the stressor-strain relationship in a helpful manner. According to these authors, the direction of the moderating effect depended upon two factors:

> (a) the level of stress being considered and (b) the types of variables being examined. Social support consistently affects stress/strain relationships at low levels of stress but not at high stress levels. In contrast, stress/health outcome relationships are buffered at high stress levels but not at low levels (Chisholm, Kasl, & Mueller, 1986, p. 191).

In this study, worker's role classification as either supervisory or non-supervisory appeared to have an impact on whether buffering or reverse buffering was observed. Specifically, supervisors at TMI appeared to be adversely effected by supervisor support when under greater levels of stress. These workers reported greater job dissatisfaction, lower optimism regarding their job future, and less occupational self-esteem after the TMI incident when they were given high amounts of supervisor support. Non-supervisory staff experienced reverse buffering of co-worker support on job satisfaction and perceptions of job future. "In contrast, all three of the significant effects of supervisor support on job strains of non-supervisory employees at the two plants support the buffer hypothesis" (Chisholm et al., 1986, p. 189).

Chisholm et al. concluded that social support generally produces positive main effects on strain; however, the interaction of stressors and social support does not always yield beneficial results (lower strain). The authors concluded that the reason for differences in the buffering effect between supervisory and non-supervisory workers was not clear from their current study. Finally, they pointed to literature suggesting that it is unlikely that workers use only one strategy to cope with the complexity of organizational institutions. The authors stated that workers may use a combination of social support and "defensive coping" to deal with stress in their work settings.

Fenlason and Beehr (1994) also obtained "mixed buffering" results. They explored whether the content of supportive communication differentially affected the buffering effect of social support on strains in a sample of 351 female secretaries. These authors identified the following three types of supportive communication: 1) positive work-related conversation (e.g., congratulating one another on a job well done); 2) negative work-related conversation (e.g,. commiserating regarding the problems with working in a given environment); and 3) non-work related conversation (e.g., discussing non-work interests). When including the content of communication measure, they found that stressed workers who received positive job-related communication from their supervisors and family/friends reported less strains. However, greater co-worker negative job-related communication (interacting with the stressor "underutilization of skills") was associated with increased strain (reverse buffering). Increased job related communications with family and friends was also associated with greater strains. The authors speculated that positive communication results in buffering whereas negative communication (especially as related to work) is more likely to contribute to reverse

buffering effects.

In addition to the above analysis, the authors also examined the effects of social support using a general support index. They hypothesized that, although support from all sources (i.e., supervisors, co-workers and family/friends) would be related to strain, supervisor support would be more highly related to strain than the other sources of support. They speculated that co-worker support would be the second most strongly related to strain. The authors found this relationship with regard to the general support index, but not with the contents of communication scale. The only interaction observed using a general support index, rather than their contents of communication scale, revealed that the experience of role conflict/overload appeared to be greater under conditions of higher coworker instrumental support indicating a 'reverse buffering effect'.

Summary

Research regarding the interrelationships of work stressors, social support, and strains has generated inconsistent findings. Future research should focus on theory-based individual difference variables which are presumed to moderate these interrelationships. Clearer definitions of all of these constructs, along with improved sampling, instrumentation, exploration and control of potential covariates, and analysis of distinct types of strains (i.e. job-satisfaction and symptomatic distress) would greatly enhance the quality of this line of occupational stress research.

Attachment Theory as a Framework for Conceptualizing the Interrelationships Among Work Stress, Social Support, and Worker Strain

An explanation for the inconsistencies found in the buffering research may be derived through understanding individual differences in affect regulation and the

perception of social support. Attachment theory provides a conceptual framework for making such distinctions and may explain why increased social support appears to assist some workers in coping with stress, whereas disposing others to experience greater strains.

The origins of attachment theory can be found in the work of John Bowlby and Mary Salter Ainsworth (Ainsworth & Bowlby, 1991; Bretherton, 1992). Trained as a psychoanalyst, Bowlby initially sought empirical support of the tenets of object relations theory (Holmes, 1993). However, his exploration outside of the realm of analytic theory, into ethology (the scientific study of animals) and cybernetics, was the catalyst for Bowlby's elaboration of Attachment Theory. This developmental theory emphasizes the importance of close, enduring emotional bonds (or "attachments") in the formation of the human character. Bowlby posited that a child's actual experiences in the relationship with his/her primary caregiver were instrumental in determining his/her later personality development and relationship behavior. Ainsworth, a co-worker of Bowlby's in the early 1950's, would later provide empirical evidence supporting the existence of distinct attachment styles in humans. The classification and measurement of attachment styles, the continuity of attachment classification from infancy through childhood, and the lasting influence of attachment styles throughout the lifespan have been the focus of recent research investigations. The following review will provide the reader with an overview of the theoretical foundations of attachment theory, the current status of the classification and measurement of adult attachment styles, and a sample of research findings regarding the application of attachment theory to understanding an individual's reaction to stress, perception of others, and adult interpersonal behavior.

Attachment Theory: Key Concepts and Assumptions

Bowlby considered attachment as a basic behavioral system, distinct from mating and feeding, with its own evolutionary purpose. He defined attachment behavior as behavior with the goal of achieving proximity to a caregiver "whose evolutionary function is protection of the infant from danger" (Bretherton, 1992, p. 766). The child and his/her primary caregiver develop a "goal-corrected partnership" that preserves a specific proximity or "set goal". Infants display "attachment behaviors" that help maintain this set goal of proximity. These behaviors include verbal protests (e.g., crying or calling out) and also following or clinging to the primary caregiver. The parental contribution to this attachment partnership is to maintain a child within safe boundaries in the environment (i.e., a range where the child may explore but can return to safety if threatened).

Bowlby believed that actual experiences in an infant's life lead him/her to develop internal representations of the elements in the world around them. These representations are considered "working models" of the self, others, and the environment. Two types of experiences are crucial to the development of secure attachments to others; these are the experience of a secure base and the opportunity to explore the environment. The 'secure base' is a concept introduced by Ainsworth and embraced by Bowlby in the early nineteen-eighties (Bowlby, 1988). This term describes a condition in which children may explore their environment secure in the knowledge that when they return to their primary caregiver(s) they will be welcomed, comforted, reassured, and that their basic physical and emotional needs will be met. Children may safely engage their curiosity and test the limits of their abilities under these circumstances. Holmes (1993) summarized the effect

of this phenomenon as follows: "We can endure tough seas if we are sure of a safe haven" (p. 70).

Furthermore, Bowlby asserted that when a child's needs for attention, comfort, and protection are not met in infancy, lasting affective and behavioral problems can result. He proposed that children who lack a secure base would be more prone to depression, less resilient to stress, and would experience difficulty in subsequent intimate relationships (Bowlby, 1988). In addition, he believed that the absence of a secure working model inhibited the child's exploration of his or her surroundings, leading to continued insecurity regarding self, others, and the environment.

Mary Salter Ainsworth has been credited with advancing attachment theory through her development of an empirical methodology for identifying infant attachment styles (Bretherton, 1992). This method, called The Strange Situation, consists of a specific sequence of events, orchestrated in a laboratory setting, with the intention of activating the attachment system of the child through the stress of separation from his/her mother. Observers recorded and rated the mother-child interaction, as well as the child's behavior after a series of episodes involving separation and reunion.

The Strange Situation proved to be very useful in distinguishing patterns of attachment in the mother-child dyads. Ainsworth identified three distinct patterns of attachment which she labeled: secure, insecure/ambivalent, and insecure/avoidant. Children who were labeled "secure" in their attachment protested when their mothers left the room and sought contact when she returned. They were described as easily consoled and able to resume exploratory behavior. Their mothers were described as sensitive and responsive to their infant's needs. The insecure/ambivalent infants protested when their

mothers left and were alternately clingy and angry upon her return. Their mothers were observed to be inconsistently responsive to their infant's needs. Insecure/ambivalent children were distinguished from another group (insecure/avoidant) who also demonstrated insecure behavior, but who appeared unaffected by the separation from their mothers in the laboratory and ignored them when they were reunited. The mothers of insecure/avoidant children were observed to be insensitive to their infant's signals and were especially rejecting when their child sought physical contact.

Ainsworth's pioneering studies were greatly influenced by her correspondence with Bowlby as he developed the first volume of his classic trilogy, *Attachment and Loss* (Ainsworth & Bowlby, 1991). In these volumes, Bowlby (1969/1982, 1973, 1980) proposed that our childhood attachment styles, while not fixed, are relatively stable over time and continue to influence how we view ourselves and others. He believed that this is achieved through a cybernetic process in which attachment style influences an "individual's perceptions, information-processing, and interpersonal behavior in ways that produce schema-consistent experiences" (Lopez, 1995, p. 402). As an individual grows into adulthood, others who occupy emotionally significant roles in the person's life and who are perceived as more powerful and/or wiser (e.g., supervisors) may become the objects of attachment-related perceptions and behaviors (Bowlby, 1979; Lopez, 1997). Although the frequency and intensity of attachment behaviors diminish in adulthood, they tend to be "especially evident when a person is distressed, ill, or afraid " (Bowlby, 1979, p. 129). However, this 'continuity hypothesis' has not been critically tested as there have been no longitudinal studies of attachment styles from childhood through adulthood (Hendrick & Hendrick, 1994).

Contemporary Attachment Theory: Theoretical and Empirical Foundations

A major advance in contemporary attachment theory has been its application to understanding the behavior and relationships of adults. This body of research has been building since 1987 when Hazan and Shaver developed the first self-report measure of adult attachment styles. Since that time adult attachment researchers have focused on: a) improving the classification and measurement of adult attachment styles; b) the extension of attachment theory to understanding the affective and interpersonal relationships of adults; and c) the exploration of the impact of adult attachment style of work-related attitudes and behaviors.

The classification and measurement of adult attachment styles.

In their pioneering study, Hazan and Shaver (1987) translated Ainsworth's classification of childhood attachment into language appropriate to describe three different patterns of adult functioning (secure, avoidant, and anxious/ambivalent) and asked participants to decide which description best fit their feelings in close relationships (See Table 1). In their subsequent research, these authors found support for the idea that Ainsworth's attachment style categories could apply to adult romantic relationships. They also found that differences in adult attachment were related, in a theoretically consistent manner, to retrospective self-reports of childhood relationships with parents.

Although this pioneering work provided the impetus for a great deal of research into adult attachment, numerous authors criticized Hazan and Shaver's use of a single item, categorical measure to assess attachment style in adults. This criticism lead to the development of continuously scaled measures of adult attachment style (Collins & Reed, 1990; Simpson, 1990). These measures were developed through decomposing Hazan and

Table 1

Hazan and Shaver Attachment Style Inventory

Which of the following best describe your feelings?

Secure

I find it relatively easy to get close to others and am comfortable depending on them and having them depend on me. I don't often worry about being abandoned or about someone getting too close to me.

Avoidant

I am somewhat uncomfortable being close to others; I find it difficult to trust them completely, difficult to allow myself to depend on them. I am nervous when anyone gets too close, and often, love partners want me to be more intimate than I feel comfortable being.

Anxious/Ambivalent

I find that others are reluctant to get as close as I would like. I often worry that my partner doesn't really love me or won't want to stay with me. I want to merge completely with another person, and this desire sometimes scares people away.

Shaver's three descriptive paragraphs into separate items. Respondents rated themselves on each of these items. A factor analysis of these responses provided for the identification of two- (Simpson, 1990) or three- (Collins & Reed, 1990) dimensions thought to underlie adult attachment styles. After reviewing this research, Hazan and Shaver (1993) asserted that there are two dimensions underlying their measure: the first dimension represents the extend to which a participant expresses comfort with interpersonal closeness and dependence on others; the second dimension reflects the degree of anxiety or tension that the participant reports regarding separation and distance in romantic relationships.

More recently, Bartholomew (1990) proposed a four-group classification of adult attachment style (secure, preoccupied, avoidant, and fearful). This typology is grounded in Bowlby's theory that individuals have internalized working models of self and others based on their childhood experiences. Contained within a working model of self is the individual's belief regarding his/her worthiness of receiving support and love. The individual's working model of others holds his/her perception of the availability of the attachment figure to meet his/her needs. In this classification system, secure individuals are said to have positive views of self and of others; while insecure adults hold negative beliefs about either self, others, or both. Preoccupied individuals correspond closely to Hazan and Shaver's anxious/ambivalent description. They hold a negative view of self and a positive view of others. Both the dismissive and the fearful groups report wariness regarding intimacy; however, the difference between these two groups may be found in their distinct motivations for avoidance in relationships. Although dismissive individuals hold a negative view of others, they report a positive view of self. Their avoidance of

intimacy may be due to their unwillingness to compromise their independence for closeness with others. Fearful individuals hold both a negative view of others and themselves which may cause them to believe that they are unworthy of closeness. Unlike their dismissive counterparts, these individuals also fear interpersonal rejection.

Bartholomew and Horowitz (1991) developed a categorical measure of these four styles based on the design of Hazan and Shaver's Attachment Style Inventory. These authors obtained empirical support for the four-category typology of adult attachment. Griffin and Bartholomew (1994) assessed the validity of the self and other dimensions of the four-category model and found that these dimensions of attachment had construct, discriminant, and predictive validity.

In a study comparing the three- and four- category models of attachment, the same two dimensions were found to underlie both models (Brennen, Shaver, & Tobey, 1991). The results of this study also indicated that some of Hazan and Shaver's participants may have been misclassified based on their need to conform to the three choices which they were offered. The authors found that most participants who classified themselves as secure did so on both measures; however a minority of the respondents who classified themselves as secure on Hazan and Shaver's measure, endorsed the dismissive item on Bartholomew's scale. Anxious/ambivalent participants classified themselves as fearful or preoccupied on Bartholomew's measure, and avoidant participants distributed themselves into the dismissive and fearful categories. These findings support the use of a four-category typology of adult attachment style as it allows for finer distinctions along the two dimensions reflecting an individual's view of him/herself and others.

In a recent review, Lopez (1995) discussed numerous conceptual and methodological limitations in adult attachment research including a critique of these measurement-related difficulties. In addition, he revealed that there have been inconsistent findings regarding sex differences in adult attachment classification which may be due, in part, to the use of both three- and four- group classification models in across study comparisons. One study employing the four-group scheme found women overrepresented among individuals classified as fearfully attached and males overrepresented among persons classified with dismissive attachment styles. In other studies employing the four group taxonomy, no sex differences were noted across three different independent samples (Lopez, 1995). Cultural differences in the relative distribution of attachment styles have also been found using The Strange Situation. In response to these criticisms, Lopez stated that future research should carefully examine the potential moderating effects of gender, sex-role orientation, and cultural differences on the manner in which "attachment behavior is expressed and cooperatively managed in close relationships" (Lopez, 1995, p. 408).

Adult attachment related distinctions in affect regulation and interpersonal behavior.

Research on adults has produced a body of literature that supports numerous distinctions among individuals with different attachment styles. Researchers have found that adults with secure attachment styles report more relationship satisfaction, higher levels of trust in relationships, greater use of appropriate self-disclosure, more constructive approaches to conflict resolution, and greater collaboration in problem solving than their insecure peers (Carnelley, Pietromonaco, & Jaffe, 1994;

Lopez, Gover, Leskela, Sauer, Schirmer, & Wyssmann, 1996; Mikulincer & Nachshon, 1991; Pistole, 1989; Simpson, 1990). Adult attachment style differences in affect regulation and the development and perception of social support have also been observed. These findings can be helpful in theorizing about how individuals of different attachment styles may react to work related stress, and whether or not social support would be useful to them in reducing strains.

Kobak and Sceery (1988) found that secure college students endorsed fewer symptoms of distress on a self-report measure than did insecure respondents. This study also revealed that peers rated secure participants as more ego-resilient, less hostile, and less anxious than insecure participants. Attachment style differences in affect regulation were further supported through the work of Priel and Shamai (1995) who found that secure respondents reported less anxiety and depression than insecure respondents.

Researchers have also begun to investigate the relationship between patterns of attachment to others and the development and perception of social support. Several authors have shown that secure participants tend to perceive more support in times of distress than do their insecure peers (Florian, Mikulincer, & Bucholtz, 1995; Kobak & Sceery, 1988; Preil & Shamai, 1995). Preil and Shamai (1995) also found that secure participants reported more satisfaction with social support than did insecure participants. In addition, researchers have studied support seeking and support giving in couples during an anxiety provoking situation (Simpson, Rholes, & Nelligan, 1992).

Simpson et al. (1992) designed an experiment to study the relationship of adult attachment to support seeking and giving in heterosexual dating couples. During this experiment the female member of each couple was placed under stress. The researchers

observed the extent to which these women sought and accepted social support from their male partners. In addition they recorded the extent to which male participants offered support to their partners. Participants were classified on two continuous scales, believe to represent the underlying dimensions of attachment style: a) Anxious versus Nonanxious; and b) Secure versus Avoidant. No significant differences in support seeking and giving were revealed with regard to classification on the Anxious versus Nonanxious scale. However, with regard to support seeking by female partners and support giving by male partners, the authors found that more secure females sought greater support as their level of anxiety increased, and more secure men tended to offer greater support as their partner's level of anxiety increased. In contrast, more avoidant females sought less support as their anxiety increased and more avoidant males gave less support as their partner's anxiety increased. Interestingly, at lower levels of anxiety, more avoidant females sought greater support, and more avoidant males delivered more support than their more secure peers. This finding was explained in terms of the avoidant participants conflicting desire for, and yet fear of, proximity. The authors speculated that, "increases in perceived threat or distress sharply accelerate the onset of fear of proximity, resulting in decreased proximity seeking and giving" within the more avoidant groups (Simpson et al., 1992, p. 443). With regard to their reactions to support, both avoidant and secure participants appeared calmed by their partner's support.

Wallace and Vaux (1993) focused their research on understanding personality characteristics that influence an individual's ability to develop social support networks. They reasoned that negative help-seeking experiences, especially in the formation of early attachment styles, would play a critical role in the development of a negative belief

system regarding obtaining help from others (i.e., result in a negative network orientation). In their research on the relationship between network orientation and attachment style, these authors found that individuals who reported insecure attachment styles (i.e., anxious/ambivalent or avoidant) were more likely to "endorse beliefs and expectations reflecting the risk, costs, and futility of seeking help from network members" (Wallace & Vaux, 1993, p. 362).

Adult attachment and work-related behavior.

In a recent paper, Blustein et al. (1995) addressed the application of attachment theory to career development and organizational behavior. These authors asserted that our understanding of work-related behavior in adulthood would be enhanced by incorporating the role of relationships into career development theory. After a review of relevant literature, they proposed that workers with secure attachment styles would be more likely to experience adaptive relationships at work than insecure workers and would report higher levels of job satisfaction.

In a groundbreaking study, Hazan and Shaver (1990) proposed that, in several respects, adult work is functionally similar to Bowlby's concept of 'exploration' in childhood. These authors asserted that, for adults, work provides a source of actual and perceived competence just as play and exploration provide these opportunities for children. Furthermore, they stated that, "the balance between attachment and exploration associated with healthy functioning early in life is, in important respects, similar to the love/work balance that makes healthy functioning in adulthood" (Hazan & Shaver, 1990, p. 270).

Hazan and Shaver (1990) recruited members for their study using a questionnaire published in a Sunday magazine supplement. Respondents were, on average, graduates of college whose household income was between $30,000 to $40,000 per year. Their results yielded tentative support for several theoretically derived hypotheses. For example, they found that secure participants "approach their work with the confidence associated with secure attachments"(Hazan and Shaver, 1990, p. 278). In this respect, secure participants appeared to value and enjoy their work while still placing their relationships with others as the primary focus of their lives. Anxious/ambivalent workers reported that they often feared rejection for poor performance on the job and that their preoccupation with issues related to love gets in the way of their productivity at work. Of the three attachment style groups, avoidant workers reported the least satisfaction with their jobs; furthermore, their response patterns suggested that they used work to avoid social interactions. The results of this study are considered preliminary as the instrumentation used by the authors consisted of an unstandardized questionnaire of work attitudes and of a single item, forced choice measure to classify attachment style. Furthermore, their sampling technique limited the generalizability of these findings to a population that cannot be considered as representative of the larger population of adult workers.

In an effort to support and extend the findings of Hazan and Shaver, Hardy and Barkham (1994) studied a clinical population who where reporting occupational stress and depression. Their sample consisted of 219 participants who were referred to a clinic for distressed white collar workers. For inclusion in the study, participants were employed and were determined to be clinically depressed. They found that workers

classified as more anxious/ambivalent were fearful about their work performance and their relationships on the job. In contrast, the authors found that workers who received higher scores on the avoidant scale reported greater job dissatisfaction, more conflict with co-workers, and greater difficulties in their social relationships outside of work than did workers who scored lower on this scale. The sampling procedure used in this study limits the generalizability of the findings to populations of workers admitting distress. The authors in this study did improve upon the methodology of Hazan and Shaver by using more standardized measures; however, to measure attachment style they developed their own scale that should be considered exploratory.

Summary and Problem Restatement

There have been inconsistent findings in the occupational stress literature regarding the effect of social support on the relationship between work stressors and strains. Problems regarding sampling techniques, instrumentation, and data analysis may be contributing to these discrepant findings. In addition, important individual difference variables, which have yet to be adequately studied in this context, may (a) be significantly related to perceptions of stress, strain, and social support, and (b) moderate the stressor-strain relationships. Attachment theory provides a useful framework for hypothesizing about how individuals differ in their affect regulation and social behavior when under stress, their perceptions of social support, and their work-related attitudes and behavior.

Contemporary research on adult attachment has revealed adult attachment style differences in affect regulation and on indexes of adaptive relationship behavior. Given these findings, it seems reasonable to hypothesize that adult attachment style may be

directly related to indexes of symptomatic distress. In addition, recent studies regarding the contribution of adult attachment style to work behavior suggest that, by understanding a worker's attachment style, we may better predict job satisfaction. Furthermore, since attachment behavior is activated during times of stress, it seems reasonable to hypothesize that attachment style would moderate the relationship between work stress and indexes of both symptomatic distress and job satisfaction.

Hardy and Barkham's findings would also suggest that attachment style may influence the quality of an individual's work relationships. Since attachment theory predicts that attachment behavior in adults is likely to be demonstrated with regard to preferred individuals perceived as more powerful/or wiser, it is assumed that supervisory relationships will be more likely to be influenced by attachment style differences than co-worker relationships. In addition, adult attachment has been demonstrated to influence individuals perceptions and beliefs regarding the safety of seeking help from others in times of distress; therefore, under stressful conditions, attachment style may moderate the relationship between supervisor social support and symptomatic distress by clarifying which individuals are likely to seek and use social support when stressed. It is also predicted that attachment style will moderate the relationship between supervisor social support and job satisfaction under stressful work conditions.

Definitions

Stressors

In this study, work stress is conceptualized as the worker's perception that existing work demands, or "stressors", exceed his/her capabilities (Barone et al., 1988).

"Work stress" is an interactional construct that involves an appraisal regarding the intensity and frequency of this discrepancy by workers.

"Stressors" are defined as the specific job-related contributors to work stress (Fenlason & Beehr, 1992). Work stressors for an employee may include a perceived lack of one or more of the following: a) information, b) input into decisions, c) autonomy, d) clear communication, e) support, and f) recognition from supervisors (Barone, 1988). Other work stressors involve job risks and may include conflicting and excessive job demands, the need for emergency responding, extended work without reprieve, and other threats of harm to self and/or others (Barone, 1988).

Strains

For the purpose of this study, "strains" are the psychological outcomes that are a result of experiencing work stressors (Fenlason & Beehr, 1992). In this study, two types of strains will be examined: a) self-reported job dissatisfaction, and b) self-reported symptomatic distress. Job dissatisfaction is defined as the extent to which an employee indicates lack of overall satisfaction with his/her current job. Symptomatic distress is defined as the intensity of discomfort experienced by participants with regard to symptoms commonly observed among mental health outpatients.

Social Support

In this study, social support will be defined as emotional or instrumental support given to the participant by one of the following three sources: supervisors, co-workers, and others (spouse, friends, and relatives). Emotional support includes statements of caring or listening to one's concerns. Instrumental support refers to providing tangible assistance that is necessary to complete a task. This type of support may include

supplying advice, physical assistance, or the necessary materials for a worker to do his/her job.

Adult Attachment Styles

In this study, Bartholomew's (1990) four-group taxonomy of adult attachment styles will be used. The four adult attachment styles are defined as follows:

Secure adults report that they are comfortable with connection with others. They can also tolerate separation from others. They generally have a positive view others and of themselves. Secure adults report positive family memories from their childhoods. They describe their parents as being available and responsive to their needs.

Preoccupied adults focus intensely on relationships. They are, in general, more comfortable with connection than separation, although they express strong fears of abandonment. They have developed a negative view of themselves while viewing others in positive terms. For preoccupied adults, obsessiveness and jealousy often interfere with their relationships with others. Preoccupied adults report negative family memories from childhood. They describe developmental histories marked by inconsistent parenting, lack of parental support, and role reversal in their relationships with their parents.

Dismissive adults generally dismiss the need for connection with others and they tend to be counter-dependent in their relationships. Individuals with this style of attachment view themselves in positive terms while maintaining a negative view of others. Dismissive adults expect their partners to be unavailable and unresponsive to their needs. These expectations results in a general deactivation of attachment proximity-seeking behaviors.

Fearful adults are generally afraid of connection with others, express abandonment fears, and demonstrate a social avoidance. Individuals with this style of attachment view themselves and others in negative terms. Fearful individuals doubt their ability to be loved and expect their partners to be rejecting. They may demonstrate an erratic combination of avoidant and anxious proximity-seeking behaviors.

Hypotheses

There have been inconsistent findings regarding the role of social support in moderating the relationship between work stressors and strains. Attachment theory provides a conceptual model for reasoning about these discrepancies. Specifically, individuals with different attachment styles may perceive and react to social support in different ways, thereby moderating the effect of social support on the stressor-strain relationship. This investigation will address these relationships as well as other gaps in the adult attachment and social support buffering literature. The following hypotheses will be set forth in this study:

I. Relations among work stress, social support, and strain

Hypothesis 1. Work stress will be significantly correlated with indexes of strain.

1a. Stress will be significantly correlated (negatively) with job satisfaction.

1b. Stress will be significantly correlated (positively) with symptomatic distress .

Hypothesis 2. Supervisor support will be significantly correlated with indexes of strain.

2a. Supervisor support will be significantly correlated (positively) with job satisfaction.

2b. Supervisor support will be significantly correlated (negatively) with symptomatic distress.

Hypothesis 3. The source of social support will be significantly related to job dissatisfaction.

3a. Supervisor support will be more highly related to job satisfaction than will support from family/friends.

Hypothesis 4. Supervisor support will significantly moderate the relation of work stress to indexes of strain. Specifically, under high stress conditions, workers with high supervisor support will report significantly less strain than will workers with low support.

4a. Under high stress conditions, workers with high levels of supervisor support will report significantly greater job satisfaction than will workers with low levels of supervisor support.

4b. Under high stress conditions, workers with high levels of supervisor support will report significantly less symptomatic distress than will workers with low levels of support.

II. Relationships of attachment style differences to work stress, supervisor support, and indexes of strain.

Hypothesis 5. Workers' attachment styles will be significantly related to their levels of work stress.

5a. Secure workers will report significantly less work stress than will fearful workers.

Hypothesis 6. Workers' attachment styles will be significantly related to their perceptions of supervisor support.

6a. Secure workers will report higher levels of supervisor support than will fearful workers.

Hypothesis 7. Workers' attachment styles will be significantly related to their indexes of strain.

7a. Secure workers will report significantly higher job satisfaction than will fearful workers.

7b. Secure workers will report significantly less symptomatic distress than will fearful workers.

Hypothesis 8. Controlling for the main effects of work stress and supervisor support, adult workers' attachment orientations will significantly interact with their level of supervisor support to predict indexes of strain. Specifically, workers reporting lower anxiety and higher avoidance will exhibit significantly lower levels of strain under low support conditions than will workers reporting higher anxiety and lower avoidance.

8a. Under conditions of low supervisor support, individuals acknowledging high anxiety will report less job satisfaction and higher symptomatic distress than workers expressing less anxiety.

8b. Under conditions of low supervisor support, individuals acknowledging high avoidance will report higher job satisfaction and lower symptomatic distress than workers expressing less avoidance.

CHAPTER III

METHODOLOGY

Participants

A sample of 250 Michigan State University (MSU) employees was recruited to participate in this study through a weighted sampling procedure. The two subsamples in this study were university support staff and faculty/academic staff. University support staff is comprised of clerical-technical personnel, maintenance and skilled trades laborers, campus police, and operating engineers. The faculty/academic staff subsample is composed of professors, coaches, administrators, extension personnel, and library staff. Participants were randomly selected from their respective populations producing a total sample which was representative of MSU employees. A total response rate of 50% was achieved (N = 125). Surveys were dropped from the study if they contained a significant degree of incomplete information (e.g. blank measures), leaving117 valid surveys which were included in the data analysis. This sample size exceeded the number of responses needed (N = 94) to detect a medium effect at an alpha level of .05, with eight predictors and a power of .80 (Cohen, 1992).

The final sample was comprised of 61% Staff members (n = 71) and 39% Faculty/Administrators including those who categorized their occupational group as "Other" (n = 46). In the overall population of MSU employees, 58% were classified as Staff and 42% were classified as Faculty/Administrative staff. Table 2 provides detailed

Table 2

Sample Demographic Information

Variables	Population N = 8574		Sample n = 117	
	Total	%	Total	%
Occupational Group				
Staff	4936	58%	71	61%
Faculty, Administration, Other	3638	42%	46	39%
Sex				
Female	4377	51%	70	60%
Male	4197	49%	47	40%
Age				Mean = 44 years
Ethnicity				
African-American	578	7%	5	4%
Asian-American	399	5%	4	3%
Hispanic/Latino(a)	270	3%	2	2%
Multiracial			0	0%
Other			3	3%
Caucasian/White			103	88%
Other, Including Caucasian	7327	85%		
Marital Status				
Single			14	12%
Committed Partnership			10	9%
Married			80	68%
Divorce			12	10%
Widowed			1	1%
Highest Level of Education				
High School/GED			10	9%
Some College			21	18%
Associates Degree			9	8%
Bachelors Degree	1298	15%	31	27%
Masters Degree	1086	13%	15	13%
Doctorate Degree	2784	32%	25	21%
Other			6	5%
Length of Service at Present Job		Median = 5-9 years		Median = 5-10 yrs.
Yearly Income				Median = $30,000-$40,000 Mode = $20,000 to $29,999

Table 2

Sample Demographic Information - Continued

Variables	Population N = 8574		Sample n = 117	
	Total	%	Total	
Are Supervised by Others				
Yes			112	96%
No			5	4%
Supervise Others				
Yes			66	57%
No			47	40%
Missing Data			04	03%

demographic information about MSU workers and the sample that was used for this study. The sample population had more women (60%) than men (40%) represented, although the MSU worker population is more evenly divided with 51% women and 49% men. African-American and Asian-American workers were also slightly under represented in this sample. The sample was similar to the general worker population in terms of average length of service at MSU (5-10 year vs. 5-9 years respectively). No information was available regarding the average age, marital status, or the average yearly income of MSU employees. In our sample the average age of respondents was 44, 68% were married, and their average income was between $30,000 and $39,999 (the modal income was between $20,000 and $29,999). Ninety-six percent of the sample reported that they are supervised by others and 57% reported that they were supervisors as well.

Procedures

To minimize the risk of an order effect, the order of the survey instruments was varied, creating 6 versions of the survey. However, all packets had the background and demographic form as the last instrument, as recommended by Dillman (1991). Each participant was randomly assigned one version of the survey. The survey packet was comprised of a demographic and background information form, two measures of adult attachment style, a social support measure, an inventory of work stress, a job satisfaction scale, and a scale of symptomatic distress.

To increase the likelihood of survey response, a pre-notification postcard was sent to participants approximately two weeks prior to sending the actual survey packet (Weather, Furlong, & Solozano, 1993). This letter provided an introduction to the study, notification of when the participant could expect the survey packet to arrive, and a

request for participation in the study (See Appendix A). As incentive for participating in this study, subjects were notified that individuals returning completed surveys would be entered into a drawing for a $100.00 prize.

The survey packet consisted of a) a personalized cover letter explaining the purpose of the study, guaranteeing confidentiality and requesting participation in the study (See Appendix B), b) an informed consent form (See Appendix C), c) a demographic form (see Appendix D), d) one of six versions of the survey, and e) a stamped return envelope.

Two follow up contacts were made with participants. The first follow up contact was a postcard sent to each participant one week after the survey had been sent (See Appendix K). The postcard served as a reminder to those participants who had not completed the survey, and to thank those participants who had already returned them. The second follow-up mailing was sent to the non-respondents three weeks following the initial mailing. The content of this mailing was a) a letter explaining that the participant's completed survey had not yet been received and reviewing the information from the original cover letter (See Appendix L), b) a second copy of the same version of the survey, and c) another stamped return envelope.

Instruments

The survey packet included a demographic and background information form; two measures of adult attachment (the Relationship Questionnaire and Brennan et al.'s Experiences in Close Relationships); one measure of work stress (Work Stress Inventory); one measure of social support (Caplan et al., 1975); one measure of job

satisfaction (Job Satisfaction Scale); and one global measure of psychological adjustment (The Hopkins Symptom Checklist).

Demographic and Background Information Form. Participants were asked to provide the following demographic information: sex, age, level of education, ethnicity, and marital status. This form also inquired about the participant's job classification (faculty, staff, or administrative personnel) and length of time that he/she has been at his/her present job. Length of services was reported on a continuous scale with 1 = less than 1 year and 7 = more than 20 years on the same job. In addition, subjects were asked to indicate whether or not they supervise others and if they have a supervisor themselves (See Appendix D).

Attachment Style. Two measures of adult attachment, one categorical and the other continuous, were included in this survey.

Relationship Questionnaire. (RQ; Bartholomew & Horowitz, 1991). The RQ is a categorical measure designed to classify a respondant's attachment style based on his/her response to a single item (See Appendix E). Participants are asked to indicate which one of four descriptive paragraphs best portray their feelings about closeness and intimacy in romantic relationships. The four paragraphs respectively represent secure, dismissive, preoccupied, and fearful attachment styles. This measure has demonstrated moderate stability (test-retest correlations of .49 to .71) over an eight month period (Scharfe & Bartholomew, 1994a). Over a period of two years, this instrument has demonstrated test-retest reliability of .30 to .67 (Scharfe & Bartholomew, 1994b). Bartholomew and Horowitz (1991) provided convergent validity for this instrument with both friend and self reports of respondent's self-concept and sociability. A recent study

(Mickelson, Kessler, & Shaver, 1997) using a nationally representative sample reported the following attachment style distributions among 35 – 44 year olds: 9% endorsed anxious attachment styles, 59% classified themselves as secure, 28% reported avoidant attachment styles, and 4% of respondents were unclassifiable. Among 44-54 year olds in the same sample 8% endorsed preoccupied attachment styles as characteristic of them, 64% classified themselves as secure, 23% reported avoidant attachment styles, and 5% of respondents were unclassifiable. These findings are consistent with the distribution of attachment scores in other studies using older adults (Diehl, Elnick, Bourbeau & Labouvie-Vief, 1998; Klohen & Bera, 1998). For exploratory purposes, a second part was added to this measure which required participants to rate how characteristic each paragraph was of them with 1 = "not at all" and 7 = "extremely" (Behrens, 1998). This rating scale can also be used to assign an attachment category in the event that a respondent endorses more than one paragraph as most descriptive of them or neglects to choose a category at all (Davila, Burge, & Hammen, 1997).

Experiences in Close Relationships. (ECR; Brennan, Clark, & Shaver, 1996). This 36-item inventory is a continuously scaled measure of adult attachment (See Appendix F). Respondents were asked to indicate the extent to which each item describes how they have typically felt in romantic relationships. Responses were scored using a 7-point Likert scale (1 = Disagree Strongly and 7 = Agree Strongly). This instrument provides scores on two subscales that were derived through a comprehensive factor analysis of multiple self-report indexes of adult attachment orientations. The avoidance subscale measures the respondents' reported level of comfort with interpersonal intimacy and dependency. A high score on this subscale indicates greater

avoidance in relationships. The anxiety subscale measures the reported level of worry and tension that the respondent experiences in close relationships. A high score on this subscale indicates greater anxiety in relationships. Cronbach alpha reliability coefficients of .94 an .91 for the avoidance and anxiety subscales respectively, have been previously obtained (Brennan et al., 1996). In this study Cronbach alphas of .93 and .91 were obtained for the avoidance and anxiety subscales, respectively.

To explore the correspondence between the categorical and continuous measures of adult attachment, a one-way ANOVA and follow up between group comparisons using Scheffe's procedure were conducted. Table 3 presents a summary of the means and standard deviations on each of the ECR scales for secure, dismissive, preoccupied and fearfully categorized participants. These results indicate that the categorical and continuous measures are generally correspondent providing support for the concurrent validity of these measures. Secure individuals scored significantly lower on the avoidance dimension of adult attachment than either dismissive or fearful respondents; yet secure workers were not significantly different from preoccupied individuals on this dimension, $F(3,111) = 15.20$, $p < .001$. Regarding the anxiety dimension, secure and dismissive respondents reported significantly lower anxiety than either preoccupied or fearful individuals, $F(3,111) = 13.55$, $p < .001$.

Social Support was assessed by a set of three scales first developed by Caplan et al. (1975; See Appendix G). These scales measured respondents' perception of the level of emotional and instrumental support that they receive from the following three sources: their supervisor, co-workers, and family/friends. These scales were scored

Table 3

Means and Standard Deviations on ECR Scores for RQ Categories

RQ Category	Avoidance	Anxiety
Secure		
Mean	38.93	47.22
SD	14.23	15.52
Dismissive		
Mean	53.94	47.51
SD	19.44	15.88
Preoccupied		
Mean	54.83	74.67
SD	16.61	17.91
Fearful		
Mean	67.87	71.27
SD	16.75	19.02

using a 4-point Likert scale with 4 = very much and 1= not at all. A score of 0 was also included which indicated that the respondent has no such person available to them. Cross-sectional estimates of reliability of social support from supervisors, co-workers, and friends and family were, .83, .73, and .81, respectively (Caplan et al., 1975). This measure, and adaptations of it, have been used extensively by previous investigators attempting to understand the relationship between stress and social support (Fenlason & Beehr, 1994). In this study α = .88 for supervisor support, α = .74 for coworker support, and α = .82 for support from others.

The Work Stress Inventory (WSI; Barone, Caddy, Katell, Roselione, & Hamilton, 1988). This 40-item inventory required respondents to rate both the intensity and frequency of stress at work (See Appendix H). Ratings of stress were made on a 5-point Likert scale with 0 = none (intensity) or never (frequency) and 4 = very much (intensity) and "daily" (frequency). A Composite Score was also derived by multiplying scores for intensity by frequency score (I x F). The following two scales were derived from this inventory: Organizational Stress and Job Risk. Test-retest reliability on these scales (for intensity, frequency, and composite, respectively) are high, with levels .88, .83, and .84 on Scale 1 (Organizational Stress) and .90, .91 and .90 on Scale 2 (Job Risk) being reported in the literature. The frequency and composite indexes on the Organizational Stress Scale have been shown to be moderately correlated in the expected direction with work satisfaction, anxiety, and organizational commitment (Barone et al., 1988). The intensity of organizational stress alone was not significantly correlated with any of these outcomes. For the purpose of this study, composite scores on the Organizational Stress Scale were used to measure work stress across a wide range of stressors such as job

overload, underload, role conflict, role ambiguity, non-participation, and interpersonal conflicts at work. In this study an alpha level of .89 was obtained for the composite score on the Organizational Stress Scale.

The Job Satisfaction Scale (JSS; Pond & Geyer, 1987: Lent, 1992) is a modified version of the general job-satisfaction scale developed by Quinn and Sheppard (1974). It was originally adapted to written form by Pond and Geyer (1987) and refined by Lent (1992). This six item measure asked the respondents to rate their level of satisfaction with their present job (See Appendix I). According to this instrument's developers, these items measure "facet-free job satisfaction", which reflect a worker's affective reaction to their job without referring to any specific elements of their work. Items are rated on a 5-point scale, with 1 = indicating complete dissatisfaction and 5 = indicating complete satisfaction. Responses to each item were totaled to form an overall index of participants' job satisfaction, with high scores indicating a greater level of satisfaction. Lent (1992) reported an alpha coefficient of .93 on this measure, which is consistent with Pond and Geyer's earlier report of an alpha coefficient of .90 for this scale. In this study, an alpha coefficient of .89 was obtained for this measure.

The Hopkins Symptom Checklist (HSCL; Derogatis, Lipman, Rickels, Uhlenhuth, & Covi, 1974) is a 58-item self report measure of psychological symptoms often reported by outpatients (See Appendix J). Respondents rate their level of distress, during the preceding seven days, regarding these symptoms. Items are rated on a 4-point Likert scale with 1 = no distress and 4 = extreme distress. Results of factor analysis of this instrument revealed the following five underlying symptom dimensions: somatization, obsessive-compulsive, interpersonal sensitivity, anxiety and depression. Alpha

coefficients of these factors range from .84 (anxiety) to .87 (somatization and obsessive-compulsive). Test-retest reliability ranged from .75 (anxiety) to .84 (obsessive-compulsive) in evaluations completed one week apart. Derogatis et al. (1974) reported that the HSCL has demonstrated sensitivity to low levels of symptoms and to changes in emotional status among non-psychiatric outpatients.

In this study, intercorrelations among subscales ranged from $r = .51$, $p < .01$ (somatization and interpersonal sensitivity) to $r = .74$, $p < .01$ (anxious and obsessive-compulsive). Research has consistently revealed high intercorrelations among the subscales on the HSCL; therefore, subscale ratings were summed to obtain a total score that assessed the overall level of psychological distress reported by the respondent (Folkman, Lazarus, Gruen, & DeLongis, 1986). An alpha of .96 was obtained on the total score indicating the participants' overall level of psychological distress.

Research Hypotheses

As in previous research, the results of data analysis are expected to confirm a relationship between work stress and indexes of strain (job satisfaction and symptomatic distress). Social support is also expected to be related to these indexes of strain. Furthermore, it is predicted that social support will moderate the relationship between work stress and indexes of strain. The results of data analysis are also expected to reveal that adult attachment style is significantly related to a worker's level of stress, perception of support, and to indexes of work strain. This research will also attempt to explain previously discrepant findings regarding the buffering effect of social support on strain under conditions of high stress through the exploration of adult attachment style as moderating variable.

Data Analysis

The Statistics Package for Social Sciences (SPSS, Version 7.5.1) was used to conduct data analyses. Descriptive sample statistics (means, standard deviations, and ranges) were calculated and examined for all variables in the study. An intercorrelation matrix was calculated for the demographic variables and the key measures of interest.

Correlation analysis was used to examine the relationship between work stress, as measured by the WSI (Organizational Stress Composite Score), and the following two variables: 1) job satisfaction, as measured by the JSS, and 2) symptomatic distress, as measured by the HSCL (Hypotheses 1a and 1b). Correlation analysis was also used to examine the relationship between overall social support, as measured by the Caplan et al. (1975) social support scale, and the following two indexes of work strain: 1) job satisfaction (JSS), and symptomatic distress (HSCL). (Hypotheses 2a and 2b).

A Fisher *r* to *z* transformation, and a subsequent z-test of the transformed *r* values, was used to examine the between group differences in worker job satisfaction among various types of social support (i.e, supervisor support, co-worker support, and family/friend support). (Hypothesis 3a).

Multiple regression was used to examine the relationship(s) of social support and work stress to indexes of strain and thereby test hypotheses 4a and 4b. To provide for a more sensitive test to the interaction effects, raw scores were converted to z-scores, as recommended by Holmbeck (1997). Two separate regression models examined the effects of a) work stress (WSI) and supervisor support (Caplan et al, 1975) on job satisfaction (JSS); and b) work stress (WSI) and supervisor support (Caplan et al, 1975) on symptomatic distress (HSCL). Specifically, work stress was entered first into the

regression equation, followed by the social support variable, and the last step was to enter the interaction of supervisor support and stress.

To test Hypotheses 5a, 6a, 7a, and 7b, a one-way MANOVA was conducted. In this analysis, the independent variable was attachment style and the dependent variables were work stress, supervisor support, symptomatic distress, and job satisfaction. As the multivariate F was significant, follow-up univariate tests of attachment style on each dependent variable were conducted. Planned contrasts were used to examine between-group differences.

Once raw scores on predictor variables were converted to z-scores, hierarchical regression was used to test Hypotheses 8a and 8b. Specifically, the main effects of work stress and supervisor support were controlled in step 1 of these analyses. The main effects of the adult attachment dimensions of avoidance and anxiety on symptomatic distress and job satisfaction were tested in step 2. Finally, step 3 tested the two way interactions of work stress and avoidance and anxiety; the two way interactions of supervisor support and avoidance and anxiety; the three way interactions of work stress, supervisor support and avoidance; and the three way interactions of work stress, supervisor support and anxiety on symptomatic distress and job satisfaction.

CHAPTER IV

RESULTS

This chapter details the results of data analyses. The treatment of missing data and a summary of descriptive statistics for the sample are presented in the initial sections of this chapter. Next, the correlational findings are presented. Following this are the results pertaining to social support as a moderator of the work stress and strain relationship, as well as those relevant to the interrelationships among attachment style, work stress, social support and indexes of strain. Finally, post hoc analyses suggested by the previous findings are presented.

Treatment of Missing Data

All variables were examined for possible data entry errors and missing values prior to data analysis. Mean substitution was used to replace 13 missing values on the WSI and 4 missing values on the HSCL. Since a "neutral" rating was included in the ECR, this value was substituted for 4 missing data points on the ECR.

On the RQ, a number of participants did not respond to the continuously measured portion of this instrument. Therefore, this portion of the RQ was only used to derive the attachment style for those respondents who did not check one of the categories of attachment style as most descriptive of them (i.e., the item rated as most highly descriptive of the respondent was used to assign their attachment style). For two participants, a "most descriptive" attachment style could not be assigned because the

participant gave no response to either part of the RQ or gave equivalent ratings on the continuous portion of this instrument. The data for these individuals were automatically deleted from further analyses using the RQ. Participants providing incomplete data on the JSS (n=1) or the various subscales of the SSI (n=2 supervisor support; n=4 coworker support; n=5 other support) were also dropped from analyses using those subscales, due to the small number of items on each of these measures.

Also, prior to conducting further analysis, the data were examined for outliers by plotting all instruments against the attachment style categories. One outlier with regard to WSI scores was detected and deleted from further analysis using this measure.

Descriptive Statistics

Table 4 contains the mean, standard deviation, skewness, and range of the continuously scored variables in this study. The descriptive statistics for work stress are most similar to those found by Barone, Caddy, Katell, Roselinoe, and Hamilton (1998) for police officers, hospital nurses and women in general. The HSCL mean and standard deviation were similar to those found by Behrens (1998) in a study employing the HSCL as a global measure of symptomatic distress.

Supervisor support in this sample was higher than recently reported in the literature. Using the same measure of social support as in this study, Fenlason and Beehr (1994) separated support into instrumental and emotional types and reported means of 3.64 and 3.54, respectively. The findings of this study, regarding social support separated into the same categories, revealed a mean of 5.53 for instrumental support and 5.65 for emotional support.

Workers in this study also reported somewhat higher job satisfaction than in a recent study using the JSS. Lent (1992) reported an item mean on the JSS of 3.39 in her study of 168 adult workers. When the JSS data from this study was transformed, an item mean of 3.79 was obtained.

Regarding the measurement of adult attachment dimensions using the ECR, K. A. Brennan (January 22, 1999, personal communication) reported item means for the anxiety and avoidance scales as 3.46 and 2.93, respectively. To obtain item means, after re-coding the appropriate items and summing across scale items, the total is divided by the number of items (18) on each scale. Once the data from this study were transformed in the above manner, the item mean for the anxiety scale was 2.88 and the avoidance scale was 2.67.

Table 5 describes the distribution of participants' attachment style classification. Consistent with recent studies including post-college age respondents, few preoccupied participants were identified in this study (5%). Among 45-54 year olds in a nationally representative sample, 8% endorsed preoccupied attachment styles as characteristic of them, 64% classified themselves as secure, 23% reported avoidant attachment styles, and 5% of respondents were unclassifiable (Mickelson, Kessler, & Shaver, 1997). Furthermore, at age 52 only 5% of women, participating in a longitudinal study of personality characteristics and future plans, identified themselves as preoccupied (Klohnen & Bera, 1998).

Recomposition of RQ Classification

Theoretically, both preoccupied and fearful individuals have negative self models and are disposed toward high levels of attachment-related anxiety. These individuals are

Table 4

Descriptive Statistics for Continuously Scored Measures

Variable Name	M	SD	SK	Range
Work Stress Inventory	82.01	47.29	.90	2 - 248
Hopkins Symptom Checklist	85.02	20.32	1.126	58 - 158
Job Satisfaction Survey	18.93	4.41	-.830	7 - 25
Supervisor Support	11.21	3.67	-.540	0 – 16
Coworker Support	12.11	2.44	-.584	4 – 16
Support from Others	13.82	2.47	-1.23	5 – 16
Avoidance	48.11	19.07	.47	18 - 98
Anxiety	51.90	18.56	.651	19 - 100

also thought to share the characteristics of hypervigilance and hyperarousal in regard to threatening or stressful events (Lopez, 1995). Since a relatively small number of respondents endorsed preoccupied and fearful styles in this study, these categories were collapsed to form an "anxious" category to facilitate data analyses. The frequencies and percentages of attachment styles produced by this recoding of the RQ can be found in Table 6.

Correlational Findings

Table 7 presents an intercorrelation matrix for the demographic variables and key measures of interest in this study. No significant correlations were observed among measures of work strain and the key demographic variables "length of service" and "sex". However, "length of service" was moderately correlated with "avoidance" ($r = .26$, $p < .05$) indicating that workers reporting longer tenure in their present jobs expressed higher levels of attachment-related avoidance.

Examination of the correlational data provides support for hypotheses 1a and 1b. Work stress was significantly negatively correlated with job satisfaction ($r = -.44$, $p < .01$) indicating that workers who reported higher work stress acknowledged lower job satisfaction. Also, work stress was significantly positively correlated with symptomatic distress with $r = .65$, $p < .01$, demonstrating that workers reporting high levels of work stress experienced higher levels of symptomatic distress.

Supervisor support was significantly positively correlated with job satisfaction ($r = .49$, $p < .01$). This confirms hypothesis 2a in this study. In addition, supervisor support was significantly negatively correlated with symptomatic distress ($r = -.31$,

Table 5

Frequencies and Percentages of Attachment Styles

Attachment Style	N	%
Secure	59	51.3
Dismissive	35	30.4
Preoccupied	6	5.2
Fearful	15	13.0
Total	115	99.9%

Note. Percentage does not total 100.00% due to rounding error.

Table 6

Frequencies and Percentages of Recoded Attachment Styles

Attachment Style	N	%
Secure	59	51.3
Dismissive	35	30.4
Anxious	21	18.3
Total	115	100%

Table 7

Intercorrelation of Variables

	1	2	3	4	5	6	7	8	9	10	11	12
1. Age	---											
2. Sex	.12	---										
3. Education	-.18	.32*	---									
4. Length of Service	.55**	.07	-.22*	---								
5. Work Stress	-.22*	-.03	.11	-.25	---							
6. Avoidance	.06	-.26**	-.14	.26*	.12	---						
7. Anxiety	-.47	-.02	.02	-.09	.28**	.36**	---					
8. Supervisor Support	.06	-.03	-.19**	.01	-.46**	-.12	-.03	---				
9. Coworker Support	-.06	-.14	-.04	-.14	-.27**	-.04	-.05	.42**	---			
10. Others Support	.02	.09	.09	-.24*	-.24*	-.52**	-.23*	.13	.21*	---		
11. HSCL	-.11	.08	-.08	.12	.65**	.33**	.40*	-.31**	-.36**	-.31**	---	
12. JSS	.15	-.14	-.03	.01	-.44**	.05	-.13	.49**	.40**	.04	-.32**	---

**Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

Coding: Sex (1 = Female, 2 = Male); Education (1 = High School/GED, 6 = Doctorate Degree, 7 = Other)
Length of Service (1 = less than 1 year, 7 = over 20 years); HSCL = Hopkins Symptom Checklist; JSS = Job Satisfaction Survey

$p < .01$), confirming that those individuals reporting higher levels of supervisor support reported less symptomatic distress (Hypothesis 2b).

A Fisher *r* to *z* transformation was conducted in order to examine group differences in the relationship between different sources of social support and worker job satisfaction. There were no significant differences found between the effect of supervisor support as compared to coworkers support on job satisfaction ($z = .63$, $p = .26$). However, supervisor support was more highly related to job satisfaction than was support from family/friends ($z = 3.31$, $p < .01$), confirming hypothesis 3a. Co-worker support was also found to be significantly more related to job satisfaction than support from family and friends ($z = 2.70$, $p < .01$). These data indicate that on-the-job support is more highly related to job satisfaction than is support from family and friends.

Supervisor Support as a Moderator of the Work Stress-Strain Relationship

Prior to examining the respective unique and interactive contributions of work stress and supervisor support to the two indexes of work-related strain, the data were examined regarding the necessary assumptions related to regression. The only violation of these assumptions was with regard to normality. A histogram of the WSI exposed a positive skew, whereas histograms of the JSS and the social support variable revealed negatively skewed distributions. However, regression analysis is robust against violations of normality when sample sizes are large as in this study (Berry & Feldman, 1995). The assumptions of pairwise linearity and homoscedasticity were satisfied by examining bivariate scatterplots of the variables. Muticollinearity was evaluated through the collinearity diagnostics of SPSS. All tolerance proportions were found to be above

0.1, indicating that the independent variables are not subject to the problem of multicollinearity.

Table 8 presents the results of hierarchical regression analyses testing the direct and interactive contributions of work stress and supervisor support to the two indexes of strain. Both supervisor support and work stress demonstrated main effects on the prediction of job satisfaction with work stress accounting for 20% of the variation on this measure, and with supervisor support explaining an additional 10% of the variance. The interaction of supervisor support and work stress did not incrementally enhance the prediction of job satisfaction. With regard to the prediction of symptomatic distress, only work stress made a significant contribution; neither supervisor support nor its interaction with work stress significantly improved the prediction of symptomatic distress. Therefore, contrary to hypotheses 4a and 4b, when the main effects of work stress and supervisor support were controlled, the interaction of work stress and supervisor support did not significantly enhance the prediction of either job satisfaction or symptomatic distress.

Relationships of Adult Attachment Styles to Work Stress, Supervisor Support, and Indexes of Strain

Significant relationships were hypothesized between adult attachment style and work stress (hypothesis 5a) and perceptions of supervisor support (hypothesis 6a). It was also hypothesized that worker's attachment style would be related to job satisfaction (hypothesis 7a) and symptomatic distress (hypothesis 7b). A MANOVA was used as an initial test of these hypotheses.

Table 8

Hierarchical Regression Analyses for Work Stress (WS), Supervisor Support (SS), and their Interaction in Predicting Job Satisfaction and Symptomatic Distress

Job Satisfaction

		Unstandardized β	SE β	Standardized beta	*t*	*p*
Step 1	Work Stress (WS)	-2.0	.375	-.451	-5.32	.000
Step 2	Supervisor Support (SS)	1.62	.405	.358	3.99	.000
Step 3	WS X SS	.37	.347	.090	1.08	.283

Note. $R^2 = .20$ for Step 1; $\Delta R^2 = .10$ for Step 2 ($p < .001$); $\Delta R^2 = .01$ for Step 3 (ns).

Symptomatic Distress

		Unstandardized β	SE β	Standardized beta	*t*	*p*
Step 1	Work Stress (WS)	13.02	1.45	.647	8.99	.000
Step 2	Supervisor Support (SS)	.13	1.66	.006	.08	.939
Step 3	WS X SS	1.04	1.43	.055	.72	.470

Note. $R^2 = .42$ for Step 1; $\Delta R^2 = .00$ for Step 2 (ns); $\Delta R^2 = .00$ for Step 3 (ns).

All assumptions pertinent to MANOVA were tested. No outliers were found using the Mahalanobis distance with $p < .001$. As stated previously, one outlier was discovered using a boxplot of work stress and attachment style. This data point was removed from analyses.

Histograms were used to test the normality hypothesis. A histogram of the HSCL exposed a moderate positive skew and a histogram of the supervisor support variable revealed a moderate negative skew. However, since MANOVA analyses are robust to violations of normality when sample sizes are large and when the violation is created by skew rather than outliers, these data were not transformed (Tabachnick & Fidell, 1996). It is also noteworthy that the HSCL positive skew indicates that the sample reported few psychological symptoms of distress and that the negative skew of supervisor support ratings indicates that relatively high supervisor support was reported by these respondents. All other variables were found to have fairly normal distributions. Using bivariate scatterplots of all combinations of the dependent variables, the assumption of pairwise linearity was satisfied. Multicollinearity was evaluated through the collinearity diagnostics of SPSS. All conditioning indexes were satisfactory. The homogeneity of the variance-covariance matrices were assessed with Box's M. The results of this test produced strong evidence for the homogeneity of these variances, $\underline{F}$ (20, 15511) = .765, $\underline{p}$ = .759. This outcome means that the variance-covariance matrices can be combined to create a single estimate of error without distorting alpha levels (Tabachnick & Fidell, 1996). Since Box's M is considered a "notoriously sensitive test of homogeneity of variance-covariance matrices"; it is reasonably certain that the significance tests were robust, despite unequal cell sizes in MANOVA (Tabachnick & Fidell, 1996, p. 382).

A oneway MANOVA, with attachment style as the predictor, was performed on four dependent variables: symptomatic distress, job satisfaction, supervisor support and work stress. An alpha level of .05 was selected. Table 9 presents the means and standard deviations of the three attachment style groups on the measures of work stress, symptomatic distress, job satisfaction and supervisor support.

A significant multivariate F for workers attachment style was observed, Wilks' $F(8,210) = 3.62$, $p < .001$. Follow up univariate F tests revealed a significant relationships between attachment style and symptomatic distress [$F(2,108) = 12.10$, $p < .001$], work stress [$F(2,108) = 5.70$, $p < .01$], and supervisor support, [$F(2,108) = 3.42$, $p < .05$]. However, contrary to hypothesis 7a , no significant relationship was found between attachment style and job satisfaction, $F(2,108) = .76$, $p = .472$.

Due to the combination of preoccupied and fearful attachment style groups, secure participants were compared to the "anxious" attachment group in planned contrasts used to test hypotheses 5a, 6a, 7a, and 7b. Given the discrepancy in cell sizes, Levene tests for equality of variance were executed. The results of these tests indicated that the null hypothesis could not be rejected; therefore; the variances for each group were assumed to be equal (Norusis, 1997).

Univariate analysis of variance was used to test differences between secure and anxious attachment style groups on work stress, supervisor support, job satisfaction and symptomatic distress. Contrast coefficients of 1, 0, -1 were assigned to the secure, dismissive, and anxious groups respective. Results of these ANOVA tests revealed that secure workers reported significantly less work stress ($p < .01$), more supervisor support ($p < .05$), and less symptomatic distress ($p < .01$) than did anxious workers, thereby

Table 9

Means and SD of Attachment Groups on Work Stress, Symptomatic Distress, Job Satisfaction, and Supervisor Support

Variable Name	Mean	SD
Work Stress Inventory		
Secure	76.20	43.51
Dismissive	74.89	38.18
Anxious	113.61	59.24
Hopkins Symptom Checklist		
Secure	80.37	17.25
Dismissive	82.46	18.73
Anxious	103.14	22.43
Job Satisfaction Survey		
Secure	19.29	4.35
Dismissive	18.83	3.91
Anxious	17.86	5.44
Supervisor Support		
Secure	12.09	3.50
Dismissive	10.26	3.65
Anxious	10.05	3.67

supporting hypotheses 5a, 6a, and 7b, respectively. No significant between group attachment style differences were discovered in the rate of job satisfaction between secure and anxious groups, disconfirming hypothesis 7a.

Contributions of Work Stress, Supervisor Support, and Adult Attachment Orientations to Indexes of Work-Related Strain

Hierarchical regression analyses employing the dimensional indexes of adult attachment was used to gain a better understanding of the relationship between adult attachment, work stress, social support, job satisfaction and symptomatic distress. The results presented in Table 10 demonstrate that, when work stress and supervisor support were controlled, both adult attachment dimensions significantly enhanced the prediction of symptoms, but not job satisfaction. Adult attachment indexes did not significantly interact with work stress or supervisor support to predict job satisfaction or symptoms. However, it should be noted that more avoidant workers reported greater job satisfaction than less avoidant workers, and that the interaction of supervisor support with each adult attachment index appears to have some relationship to job satisfaction.

Post Hoc Analyses

Since attachment style related behaviors are thought to be especially activated in times of distress, removing the influence of stress in our initial regression equations (by controlling for work stress in the first step) may have prevented the detection of attachment style contributions to job satisfaction. To explore this possibility, a post-hoc regression of job satisfaction that included only supervisor support and the two attachment indexes was conducted. In this regression (see Table 11), attachment indexes marginally enhanced the prediction of job satisfaction (R^2 change = .04, $p < .06$), after

Table 10

Hierarchical Regression Analyses for Work Stress (WS), Supervisor Support (SS), Attachment Dimensions and their Interaction in Predicting Symptomatic Distress and Job Satisfaction

Symptomatic Distress

		Unstandardized β	SE β	Standardized beta	*t*	*p*
Step 1	Work Stress (WS)	13.08	1.64	.650	8.00	.000
	Supervisor Support (SS)	.13	1.66	.006	.76	.940
Step 2	Avoidance	3.76	1.47	.187	2.55	.012
	Anxiety	3.01	1.54	.150	1.96	.053
Step 3	WS X Avoidance	-1.13	1.91	-.055	-.59	.556
	WS X Anxiety	2.10	1.73	.117	1.21	.229
	SS X Avoidance	-4.40	2.25	-.002	-.02	.984
	SS X Anxiety	.56	1.83	.029	-.31	.758
	WS X SS X Avoidance	.64	1.78	.035	.36	.720
	WS X SS X Anxiety	.23	1.48	-.016	.15	.879

Note. R^2 = .42 for Step 1; ΔR^2 = .07 for Step 2 ($p < .001$); ΔR^2 = .01 for Step 3 (ns).

Job Satisfaction

		Unstandardized β	SE β	Standardized beta	*t*	*p*
Step 1	Work Stress (WS)	-1.26	.397	-.285	-3.18	.002
	Supervisor Support (SS)	1.62	.405	.358	3.99	.000
Step 2	Avoidance	.73	.375	.165	1.95	.054
	Anxiety	-.46	.391	-.103	-1.17	.245
Step 3	WS X Avoidance	-.31	.469	-.07	-.66	.509
	WS X Anxiety	.57	.426	.14	1.33	.187
	SS X Avoidance	-1.25	.555	-2.26	-2.26	.026
	SS X Anxiety	1.02	.450	2.24	2.27	.025
	WS X SS X Avoidance	.30	.438	.07	.68	.495
	WS X SS X Anxiety	-.37	.364	-.12	-1.01	.317

Note. R^2 = .30 for Step 1; ΔR^2 = .03 for Step 2 (ns); ΔR^2 = .06 for Step 3 (ns).

supervisor support was controlled. In addition, attachment indexes significantly interacted with supervisor support levels to predict satisfaction (R^2 change = .05, $p < .03$). Workers reporting higher avoidance reported significantly greater job satisfaction under low support conditions (Figure 1). Figure 2 describes the relationship between supervisor support, anxiety and job satisfaction. Those individuals who reported lower anxiety endorsed significantly greater job satisfaction under high support conditions than did those respondents who reported higher anxiety under the same high support conditions.

Several post hoc analyses were conducted to investigate possible explanations for unexpected findings (e.g., the lack of a moderating effect of supervisor support on the work stress-strain relationship). Post hoc analyses also further explored the relationship of workers' adult attachment styles to these variables.

In the original hypotheses, work stress was conceptualized as an interactional construct involving a worker's appraisal regarding the frequency that work demands exceed his/her capability and the intensity of distress that is created by this discrepancy. To measure this construct, the composite score on the Organizational Stress Scale of the Work Stress Inventory was used as the work stress variable. This score is created by multiplying respondents' ratings of the intensity (I) of stress that would be caused if they experienced various problems at work, by a rating of the frequency (F) which these events are actually experienced on their current job. This is a much more global measure of work stress than those used in the studies that have found a buffering effect of social support on the relationship between work stress and strains. Also note that a "0" rating on either the intensity or frequency scale cancels out the rating of the other in the composite score. Given the absence of an expected "buffering effect" of social support in

Table 11

Hierarchical Regression Analyses for Supervisor Support and Attachment Dimensions and their Interaction in Predicting Job Satisfaction

		Job Satisfaction				
		Unstandardized β	SE β	Standardized beta	*t*	*p*
Step 1	Supervisor Support (SS)	2.17	.366	.49	5.93	.000
Step 2	Avoidance	.78	.385	.18	2.04	.044
	Anxiety	-.76	.381	-.17	-1.99	.049
Step 3	SS X Avoidance	-1.20	.485	-2.48	-2.48	.015
	SS X Anxiety	.87	.385	2.26	2.26	.026

Note. $R^2 = .24$ for Step 1; $\Delta R^2 = .04$ for Step 2 ($p < .06$); $\Delta R^2 = .05$ for Step 3 ($p < .03$).

Figure 1. The Interaction of Avoidance and Supervisor Support in Predicting Job Satisfaction.

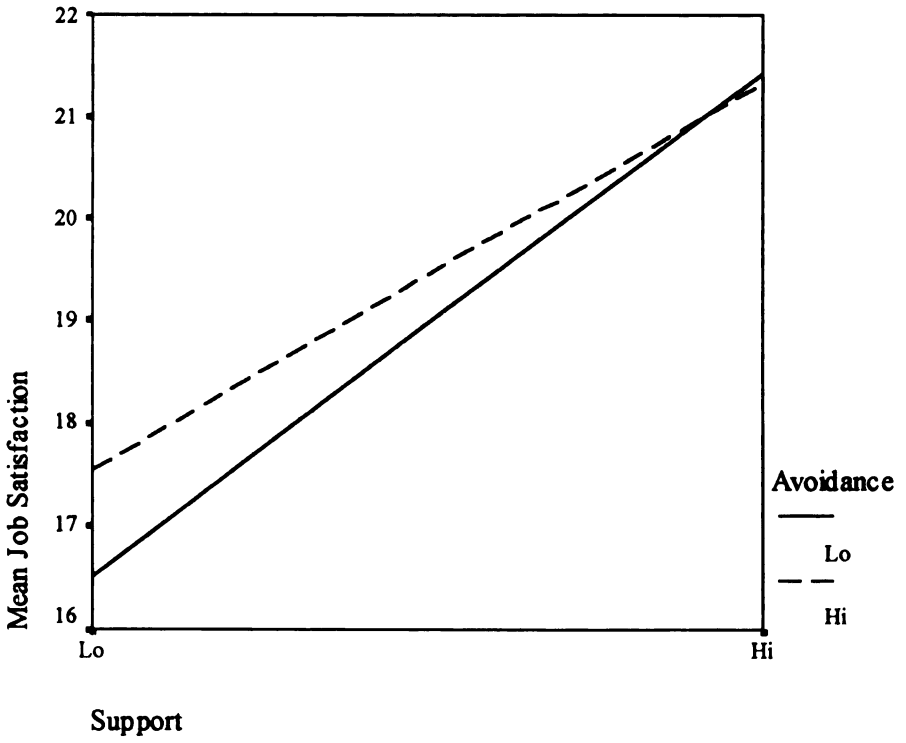
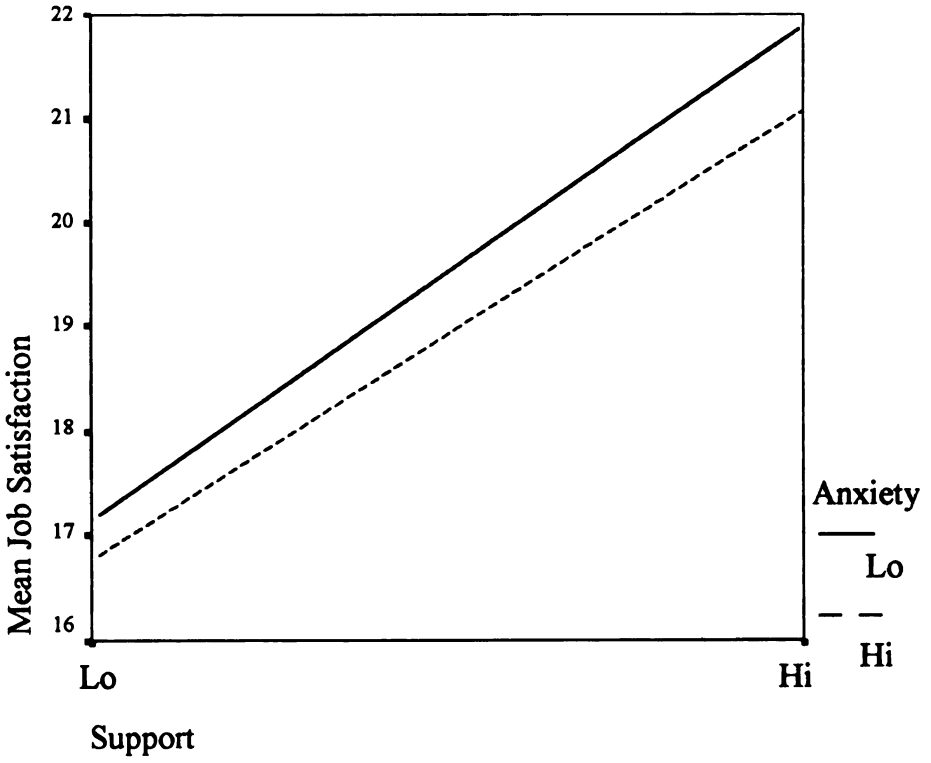


Figure 2. The Interaction of Anxiety and Supervisor Support in Predicting Job Satisfaction.



our original findings, this series of post hoc tests was designed to separate respondents' ratings of organizational stress intensity (OSI) and organizational stress frequency (OSF) to determine if supervisor support interacted differently with either of these ratings to predict job satisfaction and symptomatic distress.

Results of these regression analyses indicated that OSI interacted with supervisor support to significantly increase the prediction of job satisfaction (see Table 12) The nature of this interaction effect was explored and summarized in Figure 3. Those individuals who reported high stress intensity and high support reported greater job satisfaction than those reporting lower stress intensity under the same high support conditions. However, under low support conditions, those reporting lower stress intensity endorsed higher job satisfaction than those reporting higher stress intensity. Hierarchical regression was also used to explore the possible interrelationships of OSI, supervisor support and adult attachment indexes on job satisfaction and symptomatic distress. Results revealed no new interaction effects; however, avoidance scores and the interaction of OSI and supervisor support scores were significantly predictive of job satisfaction (see Table 13). Furthermore, OSI, avoidance, and anxiety scores were predictive of symptomatic distress. When the OSF score was substituted as the work stress variable, OSF, supervisor support and avoidance added to the prediction of job satisfaction (see Table 14), whereas OSF and anxiety were predictive of symptomatic distress (see Table 15).

Summary of Findings

Workers reporting high levels of work stress also reported higher levels of symptomatic distress and lower job satisfaction than workers reporting less work stress.

Table 12

Hierarchical Regression Analyses for Organizational Stress Intensity (OSI), Supervisor Support (SS) and their Interaction in Predicting Job Satisfaction and Symptomatic Distress

Job Satisfaction

		Unstandardized β	SE β	Standardized beta	*t*	*p*
Step 1	Organizational Stress Intensity (OSI)	-.418	.414	-.095	-1.01	.315
Step 2	Supervisor Support (SS)	2.16	.372	.485	5.80	.000
Step 3	OSI X SS	.90	.331	.226	2.70	.008

Note. R^2 = .01 for Step 1; ΔR^2 = .23 for Step 2 ($p < .001$); ΔR^2 = .05 for Step 3 ($p < .01$).

Symptomatic Distress

		Unstandardized β	SE β	Standardized beta	*t*	*p*
Step 1	Organizational Stress Intensity (OSI)	6.35	1.81	.313	3.51	.001
Step 2	Supervisor Support (SS)	-5.52	1.77	-.271	-3.11	.002
Step 3	OSI X SS	-1.32	1.63	-.072	-.81	.422

Note. R^2 = .01 for Step 1; ΔR^2 = .07 for Step 2 ($p < .01$); ΔR^2 = .05 for Step 3 (*ns*).

Table 13

Hierarchical Regression Analyses for OSI, Supervisor Support (SS), Attachment Dimensions and their Interaction in Predicting Job Satisfaction and Symptomatic Distress

Job Satisfaction

		Unstandardized β	SE β	Standardized Beta	*t*	*p*
Step 1	Organizational Stress Intensity (OSI)	-.37	.359	-.084	-1.00	.321
	Supervisor Support (SS)	2.15	.362	.484	5.94	.000
	OSI X SS	.90	.331	.226	2.70	.008
Step 2	Avoidance	.80	.381	.182	2.10	.038
	Anxiety	-.71	.387	-.162	-1.83	.069
Step 3	OSI X Avoidance	-.33	.437	-.079	-.76	.446
	OSI X Anxiety	.43	.426	.101	1.00	.319
	SS X Avoidance	-1.14	.536	-.218	-2.12	.037
	SS X Anxiety	.44	.506	.105	.86	.391
	OSI X SS X Avoidance	.16	.503	.035	.33	.745
	OSI X SS X Anxiety	6.45	.442	.018	.15	.884

Note. $R^2 = .29$ for Step 1; $\Delta R^2 = .04$ for Step 2 (ns, $p = .063$); $\Delta R^2 = .04$ for Step 3 (ns).

Symptomatic Distress

		Unstandardized β	SE β	Standardized Beta	*t*	*p*
Step 1	Organizational Stress Intensity (OSI)	5.50	1.77	.272	3.12	.002
	Supervisor Support (SS)	-5.52	1.77	-.271	-3.11	.002
Step 2	Avoidance	4.16	1.75	.205	2.38	.019
	Anxiety	5.26	1.77	.260	2.97	.004
Step 3	OSI X Avoidance	1.37	1.92	.070	.71	.447
	OSI X Anxiety	.61	1.91	.031	.32	.752
	SS X Avoidance	1.58	2.42	.066	.65	.514
	SS X Anxiety	-2.03	1.95	-.106	-1.04	.300
	OSI X SS X Avoidance	-.80	2.31	-.037	-.35	.730
	OSI X SS X Anxiety	-1.68	1.95	-.103	-.86	.391

Note. $R^2 = .17$ for Step 1; $\Delta R^2 = .15$ for Step 2 ($p < .001$); $\Delta R^2 = .03$ for Step 3 (ns).

Table 14

Hierarchical Regression Analyses for Organizational Stress Frequency (OSF), Supervisor Support (SS), Attachment Dimensions and their Interaction in Predicting Job Satisfaction

		Job Satisfaction				
		Unstandardized β	SE β	Standardized beta	*t*	*p*
Step 1	Organizational Stress Frequency (OSF)	-1.32	.424	-.298	-3.12	.002
	Supervisor Support (SS)	1.47	.427	.330	3.45	.001
Step 2	Avoidance	.84	.376	.189	2.22	.028
	Anxiety	-.54	.379	-.122	-1.42	.160
Step 3	OSF X Avoidance	-.36	.511	-.08	-.70	.488
	OSF X Anxiety	.74	.477	.19	1.56	.123
	SS X Avoidance	-1.11	.555	-.21	-2.01	.047
	SS X Anxiety	1.13	.481	.27	2.35	.021
	OSF X SS X Avoidance	.15	.461	.04	.32	.750
	OSF X SS X Anxiety	-.46	.364	-.15	-1.26	.210

Note. $R^2 = .30$ for Step 1; $\Delta R^2 = .03$ for Step 2 (ns); $\Delta R^2 = .06$ for Step 3 (ns).

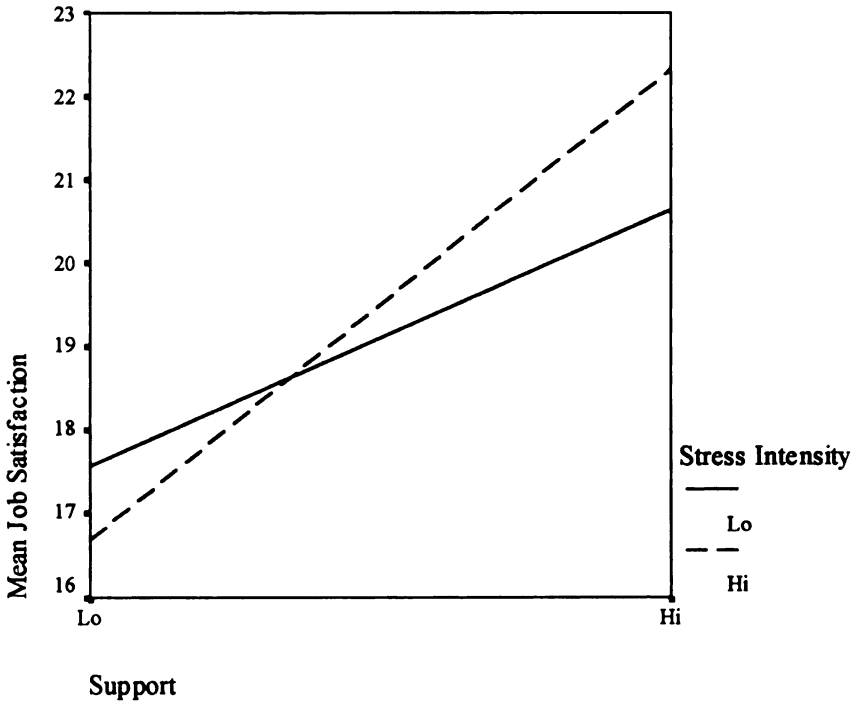
Table 15

Hierarchical Regression Analyses for Organizational Stress Frequency (OSF), Supervisor Support (SS), Attachment Dimensions and their Interaction in Predicting Symptomatic Distress

		Symptomatic Distress				
		Unstandardized β	SE β	Standardized beta	*t*	*p*
Step 1	Organizational Stress Frequency (OSF)	13.16	1.77	.647	7.46	.000
	Supervisor Support (SS)	.53	1.78	.026	.30	.767
Step 2	Avoidance	2.79	1.52	.137	1.84	.069
	Anxiety	4.51	1.53	.223	2.95	.004
Step 3	OSF X Avoidance	-1.82	2.12	-.086	-.86	.393
	OSF X Anxiety	3.48	1.98	.195	1.76	.082
	SS X Avoidance	-1.20	2.30	-.050	-.52	.603
	SS X Anxiety	1.27	1.99	.066	.64	.526
	OSF X SS X Avoidance	.60	1.91	.033	.31	.755
	OSF X SS X Anxiety	-.29	1.51	-.021	-.19	.847

Note. $R^2 = .40$ for Step 1; $\Delta R^2 = .08$ for Step 2 ($p < .001$); $\Delta R^2 = .02$ for Step 3 (ns).

Figure 3. The Interaction of Supervisor Support and Organizational Stress Intensity in Predicting Job Satisfaction.



When the effects of social support on job satisfaction were explored, on-the-job support (by supervisors and co-workers) was more strongly related to job satisfaction than was support from family and friends. Those workers who described greater supervisor support also reported lower levels of symptomatic distress than did workers reporting lower supervisor support. No evidence was initially found for the buffering effect of supervisor support on the work stress-strain relationship; however when work stress was redefined as the perception of the intensity of potential work stressors, supervisor support did moderate the relationship between stress and job satisfaction (see Figure 3).

Adult attachment style was found to be significantly related to work stress, symptomatic distress and supervisor support. Tests of planned contrasts between attachment groups revealed that secure workers reported significantly less work stress and less symptomatic distress than did anxious workers. Secure workers also reported more supervisor support than did anxious workers. No significant differences were found between secure and anxious attachment styles groups with regard to job satisfaction. However, post hoc analyses showed that the interaction of attachment style dimensions and supervisor support did significantly affect the prediction of job satisfaction, even after the main effect of supervisor support was controlled (See Figures 1 and 2).

CHAPTER V

DISCUSSION

This study sought to examine the contributions of work-related stressors, social support and indexes of adult attachment to job satisfaction and psychological functioning within an adult worker sample. Special consideration was given to exploring adult attachment style as a moderator of the stressor-strain and social support-strain relationships. In addition, the direct contribution of attachment styles to indexes of work-related strains was explored.

In this chapter, conclusions regarding the interrelationships of work stress, social support, and strains will be discussed initially. Second, the importance of the findings of this study in understanding the buffering effect will be considered. Third, conclusions regarding the relationships of adult attachment orientation to work stress, job satisfaction, symptomatic distress and social support are presented. Fourth, the limitations of this study are elaborated. Finally, the implications of the results of the present study to counseling theory, practice, and research are discussed.

The Relationships of Work Stress, Supervisor Support, and Strains

Consistent with previous findings, results revealed that workers reporting high levels of work stress also reported higher levels of symptomatic distress and lower job satisfaction than did workers reporting less work stress. In addition, workers reporting

high levels of supervisor support reported higher job satisfaction and less symptomatic distress than did workers acknowledging low levels of supervisor support.

Similar to the findings of Fenlason and Beehr (1994), support received at the workplace (i.e., from supervisors and co-workers) was found to be more highly related to job satisfaction than was support from family and friends. Furthermore, as expected in this study, supervisor support remained predictive of job satisfaction even after work stress was controlled.

Findings Regarding the Buffering Effect of Social Support

Contrary to expectations, when controlling for the main effects of work stress and supervisor support, the interaction of supervisor support and work stress did not significantly enhanced the prediction of symptomatic distress or of job satisfaction. Therefore, no evidence was initially found for the buffering effect of social support on the relationship between work stress and strain.

These results may indicate that work stress is a much more efficient predictor of symptomatic distress, and that it may subsume the contribution of supervisor support to this measure. Alternatively, it is possible that the negatively skewed distribution of supervisor support ratings in our sample (i.e., most participants reported high levels of support) may have diminished the ability of this measure to predict unique effects regarding symptomatic distress when stress levels were controlled.

Due to the unexpected nature of the above findings regarding job satisfaction, post hoc testing explored alternative operationalizations of work stress in terms of the respondent's perception of the intensity of various stressors versus the frequency of actual stressful events experienced on the job. Work stress was originally conceptualized as a

product of worker's ratings of the intensity of potential stressors by the frequency that these stressors occurred (I x F). In the revised models, the intensity and frequency scores were used separately to explore the unique contribution of each of these elements of work stress to the prediction of strains.

In these post hoc tests, occupational stress intensity (OSI) alone was not found to be significantly predictive of job satisfaction; however, supervisor support was found to moderate the relationship between worker's perceptions of the intensity of potential stressors and job satisfaction. Those who perceived stressors as more intense reported less job satisfaction under conditions of low supervisor support than those who perceived these stressors as less intense. However, those who perceived stressors as more intense and who received high supervisor support endorsed more job satisfaction than those who perceived stressors as less intense under the same high support conditions. These findings indicate that workers who perceive stressors intensely respond very well to high levels of supervisor support and perceive their jobs as more satisfying than workers who perceive stressors as less intense.

Unlike occupational stress intensity scores, occupational stress frequency (OSF) scores were predictive of job satisfaction but did not significantly interact with supervisor support to enhance the prediction job satisfaction. Therefore, it appears that, to effectively help workers manage their stress on the job, supervisors need to be sensitive not just to the amount or frequency of work stressors but more importantly their worker's perception of these stressors.

These findings are consistent with the theory that individual differences/personality variables affect the way that an individual may create or use

social support (Sarason et al., 1996). One advantage of this study over previous investigations into the buffering effect was the use of a psychometrically sound instrument to measure work stress capable of partialing out individuals' perceptual differences regarding stressors from the frequency of actual stressors. Since past research has not made this distinction, workers' negative affectivity (captured here in stressor intensity ratings) may have differentially affected the relationship of social support and stress to job satisfaction, and thus may have contributed to some of the inconsistent findings regarding the buffering effect in this literature.

Both occupational stress intensity and frequency were predictive of psychological distress in our sample; however, no interaction effects with supervisor support were detected. Therefore, the breakdown of work stress into the above two components did not enhance our understanding of the relationship between work stress and symptomatic distress. This finding is contrary to Beehr's (1985) assertion that psychological distress appears to be more amenable to the moderating effect of social support on the stressor-strain relationship.

Negative affectivity, defined as a stable interpersonal trait encompassing such characteristics as trait anxiety, depression, and low self esteem has been explored by previous researchers interested in the relationships between work stress and strain (Decker & Borgen ,1993; Schonfeld, 1996). Decker and Borgen (1993) explored various dimensions of work appraisal and the contribution of negative affectivity to work stress, strain, coping and job satisfaction. These authors found that negative affectivity has some effect on self-reports of psychological and physical strain; however it does not alter the relationship between occupational stress and these strains. Furthermore, negative

affectivity had no significant effect on measures of job satisfaction. The findings of the present study seem to be consistent with Decker and Borgen's (1993) findings in that the OSI (if considered an indicator of negative affectivity or the tendency to catastrophize), did not, by itself, predict job satisfaction but was predictive of symptomatic distress. Also, the OSI did significantly interact with social support in the prediction of job satisfaction.

Although, Shonfeld (1996) concluded that negative affectivity does not overly distort the relationship of selected self-report measures of work stressors and job satisfaction, the findings of this study suggest otherwise. Furthermore, Shonfeld chose to assess negative affectivity indirectly through the use of elements of the Center for Epidemiologic Studies Depression scale and a psychophysiologic scale. This conceptualization of negative affectivity would not have captured the type of work-related catastrophization revealed by the OSI in this study.

Previous studies investigating the buffering effect of social support on the work stress-work strain relationship have found discrepant results which could be due, in part, to the contamination of their work stress measures (to a greater or lesser degree) by work-related negative affectivity. If this speculation is accurate, those studies using measures that are susceptible to the bias of negative affectivity may have been more likely to demonstrate a buffering effect.

The Relationship of Adult Attachment to Work Stress, Job Satisfaction, Symptomatic Distress and Supervisor Support

The results of this study did confirm the hypotheses that adult attachment style would be significantly related to indexes of work stress and symptomatic distress.

Specifically, workers with higher levels of adult attachment anxiety reported significantly more work stress and symptomatic distress than did secure workers. In addition, dimensional measures of adult attachment orientation significantly enhanced the prediction of symptoms even after work stress and supervisor support levels were controlled. Although work stress was clearly the most efficient predictor of symptomatic distress (accounting for 42% of the variance), individuals with higher levels of avoidance and those with higher anxiety reported more symptomatic distress than individuals who scored lower on these dimensions of adult attachment (accounting for an additional 7 % of the variance on this strain index).

Considering these results, together with previous findings, it is unclear whether or not these individuals actually experience more stressful events at work or if they merely perceive their work environment as more stressful. In his comprehensive review of the literature regarding adult attachment style differences in affect regulation, Fuendeling (1998) concluded that studies have consistently found that insecurely attached individuals tend to make higher appraisals of threat to a variety of stimuli. Both Hazan and Shaver (1990) and Hardy and Barkham (1994) reported that anxious/ambivalent workers were fearful of rejection for poor job performance. Furthermore, Hardy and Barkham (1994) found that these workers reported fears regarding their work relationships. It is possible that, due to these fears, individuals with insecure attachment styles may actually instigate or exacerbate stressful events and interpersonal encounters in their work environment, thereby increasing their overall work-related distress.

In an innovative series of laboratory experiments, Mikulincer (1998) found support for the idea that the default coping strategies for avoidantly attached adults and

anxious-ambivalently attached adults are very dissimilar. For avoidant adults, disengagement from stress related cues and the pursuit of self reliance are the primary coping strategies; whereas, for anxious-ambivalent adults, hypervigilance regarding distress-related cues and attempts to secure the care and assistance of others are the default strategies. These coping strategies are believed to occur below the level of conscious awareness. However, Mikulincer found that these strategies do bias the way individuals process information about the self, with avoidant persons predisposed toward a positive view of self and anxious-ambivalent persons predisposed to a negative view of self under stressful conditions. Therefore, one possible result of work stress on anxiously attached individuals may be a hypersensitivity to criticism of work performance which, if perceived in this fashion by others, may cause supervisors to withdraw from them resulting in further distress to the worker who is already disposed to perceive him or herself in negative terms.

Additionally, previous research has indicated that individuals with insecure attachment styles demonstrate more anxiety and less competent affect regulation strategies than their secure peers (Bartholomew & Horowitz, 1991; Fuendeling, 1998; Kobak & Sceery, 1988). These characteristics may contribute to anxiously attached individuals reporting higher levels of symptomatic distress when under stressful conditions at work, as was found in this study.

The relationships among adult attachment style, supervisor support, and job satisfaction appear to be complex. Although no significant differences were found in job satisfaction among the three adult attachment style groups, the results of this study indicated a significant difference in the perception of supervisor support by anxious and

secure workers. Moreover, dimensional measures of adult attachment orientation did not enhance the prediction of job satisfaction after work stress and supervisor support were concurrently controlled. However, after controlling for work stress and supervisor support, the interactions of supervisor support with both the avoidance and anxiety dimensions of adult attachment, respectively, significantly enhanced the prediction of job satisfaction.

These findings may be due, in part, to the fact that this study's sample size was modest and that the distribution of supervisor support scores was skewed in a favorable direction. Also, the fact that work stress alone explained a substantial amount of job satisfaction variance may have made it especially difficult to discern any unique contributions of adult attachment orientations to the prediction of this work strain index. Indeed, when post-hoc regressions were repeated without inclusion of work stress scores, both adult attachment indexes were significantly predictive of job satisfaction. These findings are also consistent with attachment theory which posits that attachment-related cognitions and behaviors are especially activated during periods of stress; therefore, when work stress was initially controlled in the regression model, this relevant source of variability was removed, making it more difficult to detect attachment style-related contributions to job satisfaction.

These post-hoc analyses also revealed that the interactions of supervisor support and attachment dimensions were significantly predictive of job satisfaction when work stress was not part of the model. Under low support conditions, workers acknowledging greater adult attachment avoidance expressed greater job satisfaction than did their peers reporting lower avoidance. Moreover, workers endorsing higher levels of adult

attachment anxiety reported significantly lower job satisfaction under conditions of high supervisor support than did workers reporting lower anxiety.

These findings lend support to the ideas set forth by Fuendeling who asserted that what distinguishes avoidant from anxious individuals is their tendency to "make self-enhancing secondary appraisals of their ability to cope with threats" (Fuendeling, 1998, p. 304). The results of the present study also are consistent with those of Mikulincer (1998) who found evidence for the primacy of self-reliant coping among avoidantly attached individuals and also demonstrated the central importance of winning the support and compassion of others to anxiously-ambivalently attached adults. Therefore, the tendency to use self-reliant coping strategies may allow avoidant workers to preserve higher job satisfaction under low support conditions whereas less avoidant and more anxious workers may rely on external resources (in this case, supervisor support) as a preferred element of their coping strategy, thereby becoming more vulnerable to job dissatisfaction when needed support is unavailable.

Limitations

To fully appreciate these findings, the limitations of this study should be considered. First, data-gathering exclusively relied on self report measures; therefore, the data solely reflect the respondents' perceptions of their thoughts, feelings, behaviors, and of the world around them. Even the reports of respondents regarding the frequency of stressors at work is subject to distortion.

Second, although this study improved sampling over previously reviewed studies with regard to the variety of occupations studied, sampling from one employer may have contributed to less diversity in other important areas such as levels of supervisor support

and job satisfaction. This method of sampling thus limits the generalizability of these findings to workers on other large state university campuses. Although the university employees in this sample had different immediate supervisors and worked in different settings, they still shared the same institutional employer offering standard benefits and employee protection policies. These shared features may have contributed to less variable job satisfaction than if the sample was drawn from multiple employers. Reliance on a convenience, non-random, sample may have also introduced unknown bias. For example, workers who responded to this mail survey may have been more satisfied with their jobs than were non-respondents. Furthermore, large university settings are less vulnerable to stressors such as corporate take over rumors or threats of massive layoffs that have affected workers in for-profit industries in recent years. Theoretically, these stressors could affect the overall level of work-related stress in a sample which, in turn, could then affect findings regarding the buffering effect of social support on the stress-strain relationships.

Third, there were few participants who endorsed a preoccupied adult attachment style, necessitating their combination with fearful workers to form an "anxious" attachment style group. The results of this action is the potential loss of valuable information regarding attachment style variation on the other constructs under study. For example, although adults with fearful attachment styles, as well as those with preoccupied attachment styles, both have concerns about interpersonal rejection and are theoretically predisposed to hypervigilance, they are likely to differ with regard to their orientation toward support seeking. Fearful adults are likely to be apprehensive about forming close relationships due to fears of rejection, whereas preoccupied adults are more

likely to pursue closeness under stressful conditions. Unfortunately, this study could not explore these theoretical differences due to the aggregation of these two attachment style categories.

Finally, the choice of instrumentation for this study may have contributed to inconsistencies in findings from previous research on the affects of work stress and social support on strains. The WSI is a measure of the intensity and frequency of work stresses but does not break down into minute subscales with regard to different types of stress. Previous studies using measures of work stress which breaks down into these subscales (with relatively few items) have found the most evidence for the buffering effect of social support. However, the WSI has some unique characteristics (i.e., the ability to breakdown scores into Intensity (I) and Frequency (F) scales, while at the same time using the product of these scales as a system for checking the potential for negative affectivity to unduly influence overall composite scores), which allowed the researcher to explore work-related negative affectivity as a potential reason for previous inconsistent findings regarding the buffering hypothesis.

Implications

Despite the above mentioned limitations, the results of this study do provide meaningful implications for attachment theory and counseling practice. These results also suggest future directions for research on attachment theory and the management of work stress.

Implications for theory.

The results of this study advance attachment theory by demonstrating that attachment style differences impact the lives of individuals outside of their parental and

romantic relationships. Furthermore, these findings generally support the conclusions of several authors who have explored the role of attachment style in vocational behavior (Blustein et al., 1995; Hardy & Barkham, 1994; Hazan & Shaver, 1990; Lopez, 1997). Hazan and Shaver (1990) convincingly argued that work for adults functions similarly to exploratory behavior in childhood and is fostered by security in attachments. They found that secure workers approach their work with the confidence consistent with their attachment style. They also found that when adults feel insecure in their attachments, their concerns and fears may get in the way of their job satisfaction and their ability to cope with work-related demands and relationships. These findings were generally supported by the work of Hardy and Barkham (1994) as well. However, both of these studies were considered to be preliminary in nature due to sampling techniques employed and the use of exploratory measures. The present study sought to address these limitations through improved sampling and the use of established instrumentation, as well as to elaborate on the results of preceding studies.

Consistent with previous findings, job satisfaction was significantly related to adult attachment orientation with higher avoidance and lower anxiety associated with greater contentment. In addition, the results of this study extends the work of previous authors by demonstrating that workers endorsing anxious attachment styles reported significantly higher levels of work stress than did secure or dismissive workers.

Results also demonstrated that adult attachment styles were significantly related to symptomatic distress among a sample of adult workers. These findings add to the body of research suggesting the contribution of attachment behavior to affect regulation (Bartholomew & Horowitz, 1991; Fuendeling, 1998; Kobak & Sceery, 1988). Although

previous studies exploring adult attachment and affect regulation have primarily sampled from college age populations, this study provides evidence that these findings are not exclusive to young adults. Consistent with the findings of Bartholomew and Horowitz (1991) and Kobak and Sceery (1998), this study found that anxiously attached workers reported greater symptomatic distress than either of their secure or dismissive counterparts. Interestingly, when examining attachment-related orientations, this study revealed that workers endorsing higher anxiety and those acknowledging higher avoidance reported greater distress in terms of psychological symptoms, even after work stress was controlled. This finding is somewhat surprising in that avoidance is usually associated with a repression of feelings and with less willingness to report signs of "personal weakness" or distress (Fuendeling, 1998). However, there may be differences in the manner in which fearful-avoidant versus dismissive-avoidant individuals manage their affect, differences which could not be detected by the instrumentation in this study. For example fearfully attached individuals (who theoretically would endorse both high anxiety and high avoidance on dimensional measures of attachment) may be less inclined toward self-inflation and repression of affect as ways to regulate affect (Mikulincer, 1998).

Although this study did not completely resolve the controversy regarding the buffering effect of social support on the stress-strain relationship, the findings did demonstrate that the effect of supervisor support on job satisfaction depends upon the worker's perception of the intensity of potential work stressors. These results revealed that workers who are disposed to perceive work stressors more intensely are responsive to high levels of supervisor support and may depend upon this support more heavily than

other workers to ensure their job satisfaction. These findings suggest that individual differences are important to consider when building theoretical models regarding the response of workers to job stress. The findings of previous studies which did not consider occupational stress intensity and frequency separately may have been biased, to a greater or lesser degree, by work-related negative affectivity resulting in discrepant findings regarding the buffering effect. Future studies should explore this hypothesis further by including a measure of negative affectivity such as the Negative Emotionality (NEM) scale of Tellegen's (1982) Multidimensional Personality Questionnaire.

Implications for counseling practice.

These findings support the idea that supervisors may play a critical role in workers' experience of job-related stress and job satisfaction. Although, in general, workers with high supervisor support reported more job satisfaction, it is workers who perceive stressors more intensely who appear to garner the most benefit from supervisor support. In fact, these supported workers reported higher levels of job satisfaction relative to their similarly supported peers who see potential stressors as less intense. These findings also suggest that in order to maintain a highly satisfied workforce, supervisors and employers should continue to invest in developing their understanding of what constitutes high quality supervisor support and how to determine if workers are particularly in need of greater support.

Furthermore, gaining knowledge of worker's individual differences would be beneficial for employee assistance program (EAP) counselors in developing tailored stress management plans for workers presenting with psychological distress and job dissatisfaction related to work stress. Beyond being helped to cope with their distress,

workers who perceive stressors very intensely might be coached in ways of assertively expressing their need for supervisor support so that they can continue to maintain (or develop) a positive feeling about their jobs.

In addition, understanding a worker's attachment orientation may aid counselors in assisting adults who enter counseling with work related interpersonal concerns. Counselors may provide a secure base for workers who have anxious attachment orientations to explore their concerns and develop more effective coping strategies. For example, an anxiously attached worker who may be hypervigilant to work stressors, might benefit from "coaching" regarding detachment from stressors in the work environment or assertiveness training for clarifying and appropriately addressing interpersonal concerns.

Recommendations for future research.

It is recommended that future research address the limitations of this study in terms of sampling, design, and instrumentation. Sampling procedures could be improved by using more than one employer, while still retaining diversity of occupations in the sample. Furthermore, since preoccupied and fearful attachment styles are less common in older adult samples, more participants (and especially younger workers) may need to be recruited to study the unique contributions of these adult attachment style differences to the understanding of relationships among work stress, supervisor support, job satisfaction, and symptomatic distress.

Future research exploring these constructs would also benefit by using diverse methods of data gathering. One option might be to study small groups of supervisors and workers in objectively high stress conditions such as reorganization, during a budgetary

crisis, or under strict deadlines. These groups could be assessed through qualitative observation and by interview instruments, as well as through self-report measures. This strategy would provide a framework for more clearly understanding individual differences in perception of stress intensity and how it relates to attachment style activation. Furthermore, using interview strategies could help illuminate interpersonal dynamics around issues of trust, fear of abandonment and shame that may be activated under stressful conditions at work. By employing this multi-level strategy, the researcher(s) could also gain a greater understanding of which supervisory behaviors are perceived as the most helpful to workers in coping with their stress. These clarifications, in turn, could help supervisors better tailor their support to workers who are coping with stressful work conditions or with fears regarding potential stressors.

Future research using the above data gathering strategy would also provide a setting to study how different attachment style pairings (e.g., secure supervisor/avoidant worker or preoccupied supervisor/fearful worker) affects the request, delivery, and acceptance of social support under stressful condition. Studying groups of colleagues would also enable researchers to further investigate how adult attachment style affects self-presentation and identity negotiations in the work environment. For example, studying work units might help us answer questions such as, "If avoidant individuals do indeed inflate their self-reliance presentation how is this perceived by others?"; and "How does the presentation of self-reliance affect support that is offered to workers?".

Finally, the results of this study support the idea that the perception, and perhaps the anticipation, of stress is crucial to understanding how a worker responds to supervisor support. Future research regarding the buffering effect of social support should further

explore this finding. Furthermore, since anticipatory distress may reflect elements of neuroticism, an instrument designed to measure this construct should be incorporated in future research.

Conclusion

The results of this study indicate that the perception of work stress intensity and adult attachment orientation are important to consider when investigating the relationship between work stress and strains. The findings also suggest that negative affectivity may play a crucial role in understanding discrepant results in the stress buffering literature.

The present study has provided support for adult attachment style distinctions in the perception or experience of work stress and symptomatic distress. The findings confirm that adult attachment orientations significantly predict worker symptoms even after levels of work stress and supervisor support are controlled. Furthermore, there is preliminary evidence to suggest that adult workers' attachment orientations may interact with their perceptions of supervisory support in predicting current levels of job satisfaction. These finding substantiate Bowlby's assertion:

> For not only young children, it is now clear, but human beings of all ages are found to be at their happiest and to be able to deploy their talents to best advantage when they are confident that, standing behind them, there are one or more trusted persons who will come to their aid should difficulties arise (Bowlby, 1973, p. 359).

Given the central role of work in adult life and the negative consequences of experiencing stress in the workplace, work stress must be managed in the most effective manner possible. Taken together, the findings of this study support continued inquiry

regarding attachment related issues in the workplace as a means of developing and implementing more effective interventions for reducing worker strain.

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APPENDICES

APPENDIX A

Prenotification Postcard

Dear (Name inserted here):

I am writing to ask your cooperation in a study regarding the reaction of workers to stress in the workplace. You are one of a small number of MSU employees selected at random as potential participants in this study. A research packet, including 6 brief questionnaires, will be mailed to you in about 2 weeks along with a stamped return envelope. All survey responses will be kept completely confidential. It is important that we understand how workers react to stress and how we may keep them from the potential negative consequences of these experiences. Your participation in this study would be greatly appreciated.

Sincerely,

Lisa L. Schirmer, M.Ed.
Doctoral Candidate
MSU Counseling Psychology Program

P.S. As an added incentive, when you return a completed survey, you will be entered into a drawing for a $100.00 cash prize.

APPENDIX B

Work Stress Project
P.O. Box 510021
Livonia, MI 48185

November 12, 1997

Name
Address
City, MI Zip

Dear (Name inserted here):

I am writing once again to ask for your participation in a study regarding worker's reaction to stress in the workplace. This research is being conducted by Lisa L. Schirmer, a doctoral candidate in the Department of Counseling, Educational Psychology, and Special Education at Michigan State University (MSU), under the supervision of Dr. Frederick Lopez. Your name was drawn at random from a listing of MSU employees as a potential participant in this study.

The purpose of this research is to learn more about how workers are affected by stress from their jobs or at their workplace. We are also interested in exploring factors that may help protect workers from developing emotional/health problems due to stress. Enclosed you will find a survey packet containing questionnaires which solicit information regarding your general background; how you have been feeling recently; the level and frequency of stress that you experience at work; and, information about your work and personal relationships.

Please know that all survey responses will be kept completely confidential. Code numbers have been assigned to your name and you will not be asked to place your name on the survey packet. The primary researcher, Lisa Schirmer, will be the only person that has access to the list of code numbers and names. This list will be used only to keep track of surveys that have been returned and will be destroyed after the study is completed. I expect that it will take you about 20-30 minutes to complete the survey packet. I do not anticipate that your participation will result in any physical or emotional risk to you. Your participation is completely voluntary and you may withdraw from the study at anytime without penalty to you. As a benefit for your participation in this study, your code number will be entered into a drawing for a **$100.00 cash prize** when you return a completed survey packet.

I would be happy to answer any questions that you may have about this project. You can write to me at the above address, or call me collect at (313) 525-9236. You may receive a summary of the results of this study by writing "copy of results requested" on the back of your return envelope and printing your name and address below it. Please do not put this

information on the survey itself. Thank you, in advance, for your participation. Your cooperation in this study is greatly appreciated.

Sincerely,

Lisa L. Schirmer, M.Ed.
Doctoral Candidate
MSU Counseling Psychology Program

APPENDIX C

Participation Consent Form

Thank you for agreeing to participate in my study of worker's response to stress in the workplace. You will find a research code number in the top right hand corner of the first page of the survey packet. **Please copy your research code number below and also enter today's date in the appropriate spot.**

By placing your research number below, and returning a completed survey packet, you will be indicating that you understand:

1) the nature of this project and the nature of your participation;
2) that your participation is voluntary and that you can terminate your participation at any time without penalty;
3) that there will be no risk to you by completing this survey;
4) that it will take approximately 20-30 minutes to complete the survey;
5) that the results of this survey will be treated with strict confidence and that the participants will remain anonymous in any report of research findings.

By returning this form, along with your completed survey, you will also be entered into a **drawing for a $100.00 cash prize** in the form of a money order. If you are the participant randomly selected to receive this prize it will be mailed to you on or before December 22, 1997.

I have read the above and agree to participate in the study, being conducted by Lisa Schirmer, of worker's response to stress in the workplace. **Please enter me in the drawing for a $100.00 cash prize!**

_____ _____

YOUR RESEARCH CODE NUMBER TODAY'S DATE

APPENDIX D

Demographic and Background Information

Thank you for participating in this study. These final questions ask about your background. Please circle the number to the right of the information which best describes you, or place your response in the blank space provided (____).

Your sex:

Female	1
Male	2

Your current age: _____

Your ethnic/racial background:

African-American	1
Asian-American	2
Caucasian/White	3
Hispanic/Latino(a)	4
Multiracial	5
Other (please describe)	6

_____

Your Marital Status:

Single	1
Committed Partnership	2
Married	3
Divorced	4
Widowed	5

Please indicate the level of education which you have received:

High School/GED	1
Some College	2
Associates Degree	3
Bachelors Degree	4
Masters Degree	5
Doctorate Degree	6
Other (please explain)	7

_____

Your Occupational Group:

Administration	1
Faculty	2
Staff	3
Other (please explain)	4

_____

How long have you been at your present job?

Under 1 year	1
1 to 2 years	2
2 to 5 years	3
5 to 10 years	4
10 to 15 years	5
15 to 20 years	6
Over 20 years	7

Do you have a supervisor at work?

Yes	1
No	2

Do you supervise others at work?

Yes	1
No	2

Please indicate your yearly income from your current job:

$0 to $10,999	1
$11,000 to $19,999	2
$20,000 to $29,999	3
$30,000 to $39,999	4
$40,000 to $49,999	5
$50,000 to $59,999	6
$60,000 to $69,999	7
$70,000 and over	8

APPENDIX E

RQ

Directions: Please read each of the descriptive paragraphs below and place a checkmark (✓) next to the ONE paragraph that best describes how you feel about close relationships. After this, using the scale provided, choose a number from 1 to 7 to rate how characteristic each paragraph is to your typical relationships.

Scale:
Not at all Slightly Moderately Very Extremely
1-------2-------3-------4-------5-------6-------7

	Most descriptive of me (Check one)	Rating (1 to 7) (Rank all)
1. It is easy for me to become emotionally close to others. I am comfortable depending on others and having others depend on me. I don't worry about being alone or having others not accept me----------→	1. _____	_____
2. I am comfortable without close emotional relationships. It is very important for me to feel independent and self-sufficient, and I prefer not to depend on others or have others depend on me----------→	2. _____	_____
3. I want to be completely emotionally intimate with others, but I often find that others are reluctant to get as close as I would like. I am uncomforable being without close relationships, but I sometimes worry that others don't value me as much as I value them----------→	3. _____	_____
4. I am uncomfortable getting close to others. I want emotionally close relationships, but I find it difficult to trust others completely, or to depend on them. I worry that I will be hurt if I allow myself to become too close to others.----------→	4. _____	_____

APPENDIX F

ECR

Instructions: The following statements concern how you feel in romantic relationships. We are interested in how you generally experience relationships, not just in what is happening in a current relationship. Respond to each statement by indicating how much you agree or disagree with it.

		Disagree Strongly			**Neutral/ Mixed**			**Agree Strongly**
1.	I prefer not to show a partner how I feel deep down.	1	2	3	4	5	6	7
2.	I worry about being abandoned.	1	2	3	4	5	6	7
3.	I am very comfortable being close to romantic partners.	1	2	3	4	5	6	7
4.	I worry a lot about my relationships.	1	2	3	4	5	6	7
5.	Just when my partner starts to get close to me, I find myself pulling away.	1	2	3	4	5	6	7
6.	I worry that romantic partners won't care about me as much as I care about them.	1	2	3	4	5	6	7
7.	I am uncomfortable when a romantic partner wants to be close.	1	2	3	4	5	6	7
8.	I worry a fair amount about losing my partner.	1	2	3	4	5	6	7
9.	I don't feel comfortable opening up to romantic partners.	1	2	3	4	5	6	7
10.	I often wish that my partner's feelings for me were as strong as my feelings for him/her.	1	2	3	4	5	6	7
11.	I want to get close to my partner, but I keep pulling back.	1	2	3	4	5	6	7

		Disagree Strongly			Neutral/ Mixed			Agree Strongly
12.	I often want to merge completely with romantic partners, and this sometimes scares them away.	1	2	3	4	5	6	7
13.	I am nervous when partners get too close to me.	1	2	3	4	5	6	7
14.	I worry about being alone.	1	2	3	4	5	6	7
15.	I feel comfortable sharing my private thoughts and feelings with my partner.	1	2	3	4	5	6	7
16.	My desire to be very close sometimes scares people way.	1	2	3	4	5	6	7
17.	I try to avoid getting too close to my partner.	1	2	3	4	5	6	7
18.	I need a lot of reassurance that I am loved by my partner.	1	2	3	4	5	6	7
19.	I find it relatively easy to get close to my partner.	1	2	3	4	5	6	7
20.	Sometimes I feel that I force my partners to show more feeling, more commitment.	1	2	3	4	5	6	7
21.	I find it difficult to allow myself to depend on romantic partners.	1	2	3	4	5	6	7
22.	I do not often worry about being abandoned.	1	2	3	4	5	6	7
23.	I prefer not to be too close to romantic partners.	1	2	3	4	5	6	7
24.	If I can't get my partner to show interest in me, I get upset or angry.	1	2	3	4	5	6	7
25.	I tell my partner just about everything.	1	2	3	4	5	6	7
26.	I find that my partner(s) don't want to get as close as I would like.	1	2	3	4	5	6	7

		Disagree Strongly			Neutral/ Mixed			Agree Strongly
27.	I usually discuss my problems and concerns with my partner.	1	2	3	4	5	6	7
28.	When I am not involved in a relationship, I feel somewhat anxious and insecure.	1	2	3	4	5	6	7
29.	I feel comfortable depending on romantic partners.	1	2	3	4	5	6	7
30.	I get frustrated when my partner is not around as much as I would like.	1	2	3	4	5	6	7
31.	I don't mind asking romantic partners for comfort, advise or help.	1	2	3	4	5	6	7
32.	I get frustrated if romantic partners are not available when I need them.	1	2	3	4	5	6	7
33.	It helps to turn to my romantic partner in times of need.	1	2	3	4	5	6	7
34.	When romantic partners disapprove of me, I feel really bad about myself.	1	2	3	4	5	6	7
35.	I turn to my partner for many things, including comfort and reassurance.	1	2	3	4	5	6	7
36.	I resent it when my partner spends time away from me.	1	2	3	4	5	6	7

APPENDIX G

Social Support Scale

Using the scale adjacent to each of the items below, circle the number which best represents how much each of these individuals give you support in the following ways:

	Very Much	Some-what	A Little	Not At All	Don't Have Any Such Person
1. How much does each of these people go out of their way to do things to make your work life easier for you?					
A. Your immediate supervisor (boss)...	4	3	2	1	0
B. Other people at work...	4	3	2	1	0
C. Your spouse, friends and relatives...	4	3	2	1	0
2. How easy is it to talk with each of the following people?					
A. Your immediate supervisor...	4	3	2	1	0
B. Other people at work...	4	3	2	1	0
C. Your spouse, friends and relatives...	4	3	2	1	0
3. How much can each of these people be relied on when things get tough at work?					
A. Your immediate supervisor (boss)...	4	3	2	1	0
B. Other people at work...	4	3	2	1	0
C. Your spouse, friends and relatives...	4	3	2	1	0
4. How much is each of the following people willing to listen to your personal problems?					
A. Your immediate supervisor (boss)...	4	3	2	1	0
B. Other people at work...	4	3	2	1	0
C. Your spouse, friends and relatives...	4	3	2	1	0

APPENDIX H

WSI

Stress, for the purpose of this inventory, is defined as feelings of emotional strain, pressure, discomfort, uneasiness, and/or tension.

INSTRUCTIONS: You are to evaluate your current job for the amount and frequency of stress experienced. For each item, use the following scale to indicate the amount of stress that is experienced or would be if it were to occur.

0. None
1. A little
2. Moderate
3. Much
4. Very much

Then, use the following scale to indicate how often it occurs, stressful or not:

0. Never
1. Rarely (annually)
2. Sometimes (at least monthly)
3. Often (at least weekly)
4. Daily

Be sure to circle an answer for amount and frequency for each item.

EXAMPLE:

If you feel that "Not knowing what superiors expect of you," is very stressful, **whether or not you currently experience this problem** on the job, you would rate the amount of stress for item #1 as a "4", as shown below. In the next step, you rate the frequency that you experience this type of stress on your current job. If you never experience this type of stress, you would rate it a "0", as shown below.

	AMOUNT OF STRESS					FREQUENCY				
	NONE	LITTLE	MODERATE	MUCH	VERY MUCH	NEVER	RARELY	SOMETIMES	OFTEN	DAILY
1. Not knowing what superiors expect of you.	0	1	2	3	(4)	(0)	1	2	3	4

	AMOUNT OF STRESS					FREQUENCY				
	NONE	LITTLE	MODERATE	MUCH	VERY MUCH	NEVER	RARELY	SOMETIMES	OFTEN	DAILY
1. Not knowing what superiors expect of you.	0	1	2	3	4	0	1	2	3	4
1. Having to respond on an "emergency basis".	0	1	2	3	4	0	1	2	3	4
2. Disagreeing with superiors.	0	1	2	3	4	0	1	2	3	4
4. Not knowing how much authority you have.	0	1	2	3	4	0	1	2	3	4
5. Being injured as a result of the mistakes of others.	0	1	2	3	4	0	1	2	3	4
6. Having to deal with injury or death as part of your job.	0	1	2	3	4	0	1	2	3	4
7. Having to make decisions that will dramatically affect other peoples' live.	0	1	2	3	4	0	1	2	3	4
8. Finding that rewards are not based on performance (e.g., promotions, raises).	0	1	2	3	4	0	1	2	3	4
9. Having to deal with several pressing problems at once.	0	1	2	3	4	0	1	2	3	4
10. Working in a "high crime area."	0	1	2	3	4	0	1	2	3	4

	AMOUNT OF STRESS					FREQUENCY				
	NONE	LITTLE	MODERATE	MUCH	VERY MUCH	NEVER	RARELY	SOMETIMES	OFTEN	DAILY
11. Not knowing what superiors think of you.	0	1	2	3	4	0	1	2	3	4
12. Not having the opportunity to participate in decision making.	0	1	2	3	4	0	1	2	3	4
13. Having conflicting job responsibilities.	0	1	2	3	4	0	1	2	3	4
14. Working without adequate safety standards.	0	1	2	3	4	0	1	2	3	4
15. Having inadequate personnel or equipment to respond in an emergency situation.	0	1	2	3	4	0	1	2	3	4
16. Feeling there is no clear chain of command.	0	1	2	3	4	0	1	2	3	4
17. Having periods of inactivity Separated by periods of emergency response.	0	1	2	3	4	0	1	2	3	4
18. Having to physically restrain others.	0	1	2	3	4	0	1	2	3	4
19. Potential for being injured on the job.	0	1	2	3	4	0	1	2	3	4
20. Being held responsible for too many different activities.	0	1	2	3	4	0	1	2	3	4

	AMOUNT OF STRESS					FREQUENCY				
	NONE	LITTLE	MODERATE	MUCH	VERY MUCH	NEVER	RARELY	SOMETIMES	OFTEN	DAILY
21. Knowing that your error may harm another person.	0	1	2	3	4	0	1	2	3	4
22. Failing to receive recognition of achievement by supervisors.	0	1	2	3	4	0	1	2	3	4
23. Having to do things on the job that are against your better judgement.	0	1	2	3	4	0	1	2	3	4
24. Never knowing when a potentially dangerous event might occur.	0	1	2	3	4	0	1	2	3	4
25. Feeling that your work ability is underrated.	0	1	2	3	4	0	1	2	3	4
26. Not being permitted to make decisions on your own.	0	1	2	3	4	0	1	2	3	4
27. Working for long periods of time without rest.	0	1	2	3	4	0	1	2	3	4
28. Performing duties that are potentially dangerous to others.	0	1	2	3	4	0	1	2	3	4
29. Receiving criticism from superiors.	0	1	2	3	4	0	1	2	3	4
30. Receiving conflicting requests.	0	1	2	3	4	0	1	2	3	4

	AMOUNT OF STRESS					FREQUENCY				
	NONE	LITTLE	MODERATE	MUCH	VERY MUCH	NEVER	RARELY	SOMETIMES	OFTEN	DAILY
31. Finding a lack of assistance or support from superiors.	0	1	2	3	4	0	1	2	3	4
32. Working in excess of eight hours per day.	0	1	2	3	4	0	1	2	3	4
33. Working with dangerous materials.	0	1	2	3	4	0	1	2	3	4
34. Having ideas considerably different from those of your superiors.	0	1	2	3	4	0	1	2	3	4
35. Doing another person's job in addition to yours.	0	1	2	3	4	0	1	2	3	4
36. Having to maintain prolonged vigilance to protect the safety of others.	0	1	2	3	4	0	1	2	3	4
37. Potential for being the victim of a crime while on the job.	0	1	2	3	4	0	1	2	3	4
38. Being held responsible for mistakes made by co-workers.	0	1	2	3	4	0	1	2	3	4
39. Working while fatigued or tired.	0	1	2	3	4	0	1	2	3	4
40. Working under inconsistent policies and guidelines.	0	1	2	3	4	0	1	2	3	4

APPENXIX I

JSS

Directions: Circle one number on each of the following scales to represent your answer to these questions:

1. If you had to decide all over again whether to take the job you now have, what would you decide?

1	2	3	4	5
definitely not take job				definitely take job

2. If a qualified friend asked if he/she should apply for a job like yours with your employer, what would you recommend?

1	2	3	4	5
recommend not at all				recommend strongly

3. How does this job compare to your ideal job?

1	2	3	4	5
very far from ideal				very close to ideal

4. How does your job measure up to the sort of job you wanted when you took it?

1	2	3	4	5
not at all like what I wanted				just what I wanted

5. All things considered, how satisfied are you with your current job?

1	2	3	4	5
not at all satisfied				completely satisfied

APPENDIX J

HSCL

Using the scale below please indicate: "How have you felt during the past seven days including today?" Please rate yourself on the following symptoms using the four-point distress scale to the right of each item.

	not-at-all	a little bit	quite a bit	extremely
1. Headaches	1	2	3	4
2. Nervousness or shakiness inside	1	2	3	4
3. Being unable to get rid of bad thoughts or ideas	1	2	3	4
4. Faintness or dizziness	1	2	3	4
5. Loss of sexual interest or pleasure	1	2	3	4
6. Feeling critical of others	1	2	3	4
7. Bad dreams	1	2	3	4
8. Difficulty in speaking when you are excited	1	2	3	4
9. Trouble remembering things	1	2	3	4
10. Worried about sloppiness or carelessness	1	2	3	4
11. Feeling easily annoyed or irritated	1	2	3	4
12. Pains in the heart or chest	1	2	3	4
13. Itching	1	2	3	4
14. Feeling low in energy or slowed down	1	2	3	4
15. Thoughts of ending your life	1	2	3	4
16. Sweating	1	2	3	4
17. Trembling	1	2	3	4
18. Feeling confused	1	2	3	4
19. Poor appetite	1	2	3	4
20. Crying easily	1	2	3	4
21. Feeling shy or uneasy with the opposite sex	1	2	3	4
22. A feeling of being trapped or caught	1	2	3	4

	not-at-all	a little bit	quite a bit	extremely
23. Suddenly scared for no reason	1	2	3	4
24. Temper outburst you could not control	1	2	3	4
25. Constipation	1	2	3	4
26. Blaming yourself for things	1	2	3	4
27. Pains in the lower part of your back	1	2	3	4
28. Feeling blocked or stymied in getting things done	1	2	3	4
29. Feeling lonely	1	2	3	4
30. Feeling blue	1	2	3	4
31. Worrying or stewing about things	1	2	3	4
32. Feeling no interest in things	1	2	3	4
33. Feeling fearful	1	2	3	4
34. Your feelings being easily hurt	1	2	3	4
35. Having to ask others what you should do	1	2	3	4
36. Feeling others do not understand you or are unsympathetic	1	2	3	4
37. Feeling that people are unfriendly or dislike you	1	2	3	4
38. Having to do things very slowly in order to be sure you are doing them right	1	2	3	4
39. Heart pounding or racing	1	2	3	4
40. Nausea or upset stomach	1	2	3	4
41. Feeling inferior to others	1	2	3	4
42. Soreness of your muscles	1	2	3	4
43. Loose bowel movements	1	2	3	4
44. Difficulty in falling asleep or staying asleep	1	2	3	4
45. Having to check and double check what you do	1	2	3	4
46. Difficulty making decisions	1	2	3	4
47. Wanting to be alone	1	2	3	4
48. Trouble getting your breath	1	2	3	4
49. Hot or cold spells	1	2	3	4

	not-at-all	a little bit	quite a bit	extremely
50. Having to avoid certain places or activities because they frighten you	1	2	3	4
51. Your mind going blank	1	2	3	4
52. Numbness or tingling in parts of your body	1	2	3	4
53. A lump in your throat	1	2	3	4
54. Feeling hopeless about the future	1	2	3	4
55. Trouble concentrating	1	2	3	4
56. Weakness in parts of your body	1	2	3	4
57. Feeling tense or keyed up	1	2	3	4
58. Heavy feelings in your arms or legs	1	2	3	4

APPENDIX K

ThankYou/Reminder Postcard

Dear (Name inserted here):

Thank you for agreeing to participate in the Work Stress Project. If you haven not already done so, please complete and return the Work Stress Project Survey '97. Upon receipt of your completed survey, you will be entered in a drawing for a **$100.00 cash prize.** Thanks again for your participation!

Sincerely,

Lisa L. Schirmer, M.Ed.
Doctoral Candidate
MSU Counseling Psychology Program

APPENXIX L

Work Stress Project
P. O. Box 510021
Livonia, MI 48151

December 3, 1997

(NAME)
(ADDRESS)
(CITY, STATE ZIP)

Dear (Insert Name):

Approximately three weeks ago I wrote to you requesting your participation in a study regarding the reaction of employees to stress in the workplace. As of this writing, I have not received your completed survey. If you have not already completed the survey, I ask that you take the time to do so now. I have enclosed another copy of the survey for your convenience. Upon receipt of your completed survey packet, I will enter your survey code number into a drawing for a **$100.00 cash prize**.

Your response to this survey is important to the success of this study. You were one of 250 MSU employees selected at random to represent all university workers. In order for the results of this study to truly represent the community, it is essential that each person in the sample return his or her completed survey. The purpose of this research is to learn more about how employees are affected by stress from their jobs or at their workplace. I am also interested in learning more about factors that may help protect workers from developing emotional/health problems due to stress.

Remember that all survey responses will be kept completely confidential. Code numbers have been assigned to your name and you will not be asked to place your name on the survey packet. I will be the only person that has access to the list of code numbers and names. This list will be used only to keep track of responses that have been received and will be destroyed after the study is completed. I would be happy to answer any questions that you may have about this project. You can write to me at the above address, or call me collect at (313) 525-9236. You may receive a summary of the results of this study by writing "copy of results requested" on the back of your return envelope and printing your name and address below it. Please do not put this information on the survey itself. Thank you in advance for your participation.

Sincerely,

Lisa L. Schirmer
Doctoral Candidate
MSU Counseling Psychology Program