Stress in One Occupational Group: Teachers

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by

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Teaching can be a rewarding career but it can also be fraught with hazards. It is my hope that the fruits of the project help to restore some rewards that have been lost to those teaching in urban centers and, at the same time, remove some of the hazards.

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SIGNIFICANT FINDINGS

The findings indicate three classes of factors affect the well-being of new women teachers. The strongest effects were associated with working conditions. The next most important set of influences on teachers was social support. Personal coping behaviors were the least consequential influences.

The most persistent findings pertain to the importance of the school environment to the psychological well-being of women teachers. Regression analyses indicate that as school environments become increasingly dangerous and marked by disruptive student behavior, elevations in teachers' levels of depressive symptoms and sharp decreases in job satisfaction occur, controlling for a host of potential confounding factors (e.g., nonwork stress, preemployment levels of the outcome variables). Additionally, the work environment exerted detrimental effects on self-esteem, motivation to persist in the profession, and psychophysiological symptoms (e.g., headaches, stomachaches, etc.).

The importance of the work environment is underscored by other analyses that show that teachers who obtained jobs in the best run schools manifest high levels of psychological well-being compared to their own preemployment baseline levels, to their colleagues in the worst run school, and to a sample of demographically matched women who obtained full-time jobs outside of teaching. On the other hand, teachers who obtained jobs in the most chaotic and dangerous schools contrasted sharply with their colleagues having the best working conditions.

The findings also demonstrate the importance of social support for the psychological well-being of the working professionals. Support from three sources, friends and relatives outside of work, work colleagues, and work supervisors, were important for the well-being of teachers, controlling for potential confounders. The effects of support from supervisors had particularly beneficial effects on job satisfaction. Personal coping behaviors exerted statistically reliable, but weaker effects on well-being.

Based on the findings of this report, the author recommends that most the important ways to improve teachers' psychological well-being is for educational organizations to take steps to reduce both nonviolent but powerfully disruptive student behavior as well as physically assaultive behavior that some students (and outsiders) direct toward teachers and other students. In many instances, the addition of solidly professional supervision and the promotion of collegial relations among faculty members would benefit morale.

USEFULNESS OF THE FINDINGS

The study described in the Final Performance Report employed both quantitative and qualitative data analyses to identify factors that adversely affect, during the first three years of their careers, teachers' psychological well-being, as reflected in measures of depressive symptoms, psychophysiological symptoms (e.g., headaches, stomachaches, etc.), self-esteem, job satisfaction, and motivation to teach in the future. The most important factor identified concerns students but it is not the only factor.

Student behaviors adversely affect teachers' well-being in largely two ways. First, students can be physically assaultive with each other or with teachers, or the specter of violence can so pervade a school's atmosphere that teachers are affected even if they are not the immediate victims of violence. The second aspect of student behavior is more prevalent. This aspect concerns excessive verbally assaultive and disruptive behavior. Another dimension of the worst school environments is administrative insensitivity and/or incompetence. The data indicate that the supportiveness of supervision is directly related to teacher morale. Because in the worst schools, verbally and physically assaultive behavior from students and administrative ineptitude often come as a package, teachers can find themselves trapped in a work environment in which there is little opportunity to take ameliorative action.

The problems to which teachers are exposed are preventable. In considering means for reducing teachers' exposures to the adverse school conditions described above, two main avenues of action are available. Broadly they are the avenues of environmental protection and personal coping. The data suggest that personal coping behaviors exert statistically reliable beneficial effects; the effects, however, are weak. Many of the adverse conditions affecting the well-being of teachers often transcend the classroom and characterize whole schools; such conditions are beyond the control of any one individual teacher (e.g., students carrying concealed weapons). The environmental protection route, therefore, emerges as the more important avenue to ensuring the well-being of teachers.

The environmental protection avenue requires organizational change in the most chaotically run schools. It is very important that teachers be protected from verbally and physically assaultive youngsters. A reduction of student violence and disruption would prevent the dispiriting effects of many urban schools on teachers. Moreover, such preventive organizational efforts would go far to make the lives of children safer, healthier, and more connected to learning. Friedman's (1991) research also underlined the importance of the organizational factors in teacher distress.

The author recommends that educational administrative units not permit students who are inclined to engage in fighting, bring weapons to school, or threaten to harm teachers or other students to sit in regular classrooms. Such students need to be educated; however, other, safer sites with educators specifically trained to work with violent youth are required (see Cohen, 1973). Moreover, schools need to have effective strategies to manage the more prevalent problem of students who sabotage lessons with extremely disruptive behavior. Management of disruptive students, however, requires the collaboration of teachers (especially new teachers) and supervisors. School districts need to ensure that satisfactory supervisory staff be selected; the supervisory staff must be able to help and support teachers' efforts to manage classrooms.

ABSTRACT

The study described in the Final Performance Report examined the effects of working conditions on psychological and health-behavior outcomes in New York City area women who were new entrants into the teaching profession. Psychological outcomes included scales measuring Depressive Symptoms, Self-Esteem, Job Satisfaction, Motivation to Continue in the Teaching Profession, and Psychophysiological (PP) Symptoms (i.e., headaches, backaches, stomachaches, etc.). The health behaviors included Smoking, Alcohol Use, Tranquilizer Use, Obesity, and Days Absent from Work Due to Ill Health.

Working conditions were operationalized by self-report instruments that were specially constructed to minimize confounding with preemployment psychological distress and negative affectivity (i.e., a personality disposition to experience dysphoric moods). The principal work-environment measure used in the report is the Episodic Stressor Scale, an instrument that assesses the frequency of eventful stressors like student fighting and disruption. Research on alternative "objective" measures bearing on the level of dangerousness in New York City schools revealed major shortcomings including serious underreporting of crimes of against teachers.

Other factors that were studied included three varieties of social support, General Support (from friends and relatives outside of work), Colleague Support, and Supervisor Support. The effects of personal cognitive and behavioral coping behaviors and Locus of Control were also studied. Locus of Control refers the individual's generalized expectation regarding the extent to which reinforcement is controlled by the self or factors beyond personal control (Rotter, 1966).

Regression analyses were organized longitudinally. In one set of analyses, second-term outcomes were regressed on the first-term Episodic Stressor, Colleague Support, and Supervisor Support Scales as well as the preemployment General Support Scale. In a second set of analyses, second-year outcomes were predicted from first-year Episodic Stressors, Colleague Support, and Supervisor Support, and preemployment General Support. In a third set of analyses, third-year outcomes were regressed on second-year Episodic Stressors, Colleague Support, and Supervisor Support, and preemployment General Support. Potential confounders, including the preemployment counterpart of the outcome measure (e.g., preemployment Expected Job Satisfaction), negative affectivity, nonwork stressors, age, marital status, race, and social class of origin were also controlled.

The pattern of results indicated that the most important predictor of psychological outcomes was the Episodic Stressor Scale which was reliably related to elevations in Depressive Symptoms and decrements in Job Satisfaction at each of the three outcome periods. The Episodic Stressor Scale also affected Self-Esteem, Motivation, and PP Symptoms at various, but not every, time period. General Support reliably predicted better Self-Esteem but also exerted effects on psychological symptoms. Supervisor Support was reliably related to improved Job Satisfaction. It also predicted improved Motivation and Self-Esteem. Colleague Support predicted improved Job Satisfaction during the first year and, during the third year, decreased Depressive and PP Symptoms as well as improved Self-Esteem.

ABSTRACT (continued)

In general the effects of the risk and protective factors were considerably more predictive of changes in the psychological than the health-behavior outcomes. The effects on the health behaviors were either statistically significant but very weak (e.g., the effect of Episodic Stressors on Tranquilizer Use) or too sporadic over the time periods to reflect much more than Type I errors. The regressions revealed considerable stability in the health behaviors; longer time periods in which to study the effects of working conditions on health behaviors are, therefore, required.

The effects of the coping behaviors and Locus of Control were weakest. There was some evidence that the cognitive coping behavior Positive Comparisons (the tendency to make favorable comparisons between one's own work situation and the work situations of peers) exerts beneficial effects on Self-Esteem. There is also evidence that an internal locus of control (the belief that the individual, rather than forces outside the individual, controls the sources of reinforcement) exerts some but not complete buffering of work stressors on PP Symptoms.

Additional analyses supported the results. Analyses of variance comparing teachers in the best and worst run schools revealed sharp differences on post- but not preemployment Depressive Symptoms. Qualitative analyses of the teachers' written descriptions of their jobs revealed that teachers are affected by the quality of social relationships among their peers and between themselves and their supervisors. The analyses also revealed that student violence and endemic disruptive behavior short of violence exert major morale destroying effects. The pattern of quantitative and qualitative findings suggest that some school environments are normatively stressful.

Finally a set of analyses examined factors that contribute to the formation of Colleague and Supervisor Support. The analyses indicated that the women's preemployment social skills contribute to the formation of postemployment support from colleagues and supervisors; the effect sizes, however, were relatively modest.

SPECIFIC AIMS

The principal purpose of the research described in this report is twofold. First, the research assesses the effects of largely preventable job stressors on the psychological health and morale of beginning women teachers. Second, the research identifies specific features of teachers' work environments that affect their psychological health and morale.

Although the research presented here is clearly important to teachers and school administrators, its importance goes beyond the interests of the teaching profession. First, a viable and stable teaching profession is critical to the future of the nation's social and economic life. The research described here provides targets for changes that school districts need to make in order to ensure the high morale of America's teaching corps. Second, the report addresses issues that are relevant to other occupational groups. For example, the research addresses issues such as the importance of environmental protection vs. personal resources in effecting good mental health and high morale in the work force.

The specific aims of the research are enumerated below:

1. The purpose of the between-occupations component is to compare the development of psychological symptoms, work-related morale, and health behaviors, in teachers experiencing different levels of adversity in their working conditions and similar individuals who entered other occupations.

2. The purpose of the within-teachers component is to assess the effects of exposure to adverse working conditions on psychological symptoms, morale, and health behaviors.

3. The study also examined the effects of social support from coworkers, supervisors, and others on psychological health, morale, and health behaviors. Exploratory analyses assessed the interaction of the social support variables with working conditions. Other exploratory analyses examined the influence of occupational coping behaviors (e.g., advice seeking, selective ignoring) and the personal disposition locus of control. Both their direct effects and their effects in interaction with job conditions were explored.

4. The study provides a rich description of the hazards in the work environments of incumbents in a traditionally "female" occupation and identifies features of teachers' work environments associated with high levels of job-related morale.

5. The project examines factors that may shape the formation of social support at work, a social resource that has been hypothesized to exert health-beneficial effects on job incumbents.

BACKGROUND

The "economic instrumentality" of work is critical to the individual's well-being (Brief & Atieh, 1987); some working conditions, however, are likely to affect individuals' psychological functioning adversely. Although investigators have devoted much effort to assessing the effects of working conditions on psychological functioning, the research, with a small number of exceptions (Frese, 1985; Kohn & Schooler, 1982; Nelson & Sutton, 1990), has largely been unable to produce causal inferences. Occupational stress research has been hampered by cross-sectional designs, selected samples, and conceptual problems in operationalizing the independent and dependent variables.

Research on the relation of work to psychological functioning has begun to include women (Pugliesi, 1988; Rosenfield, 1989; Warr & Parry, 1982). With few exceptions (Parkes, 1982), research on women has many of the same design weaknesses as research on men. A good deal of research on women and work has been limited to the effects of women's occupancy of work roles (Pugliesi, 1988). By contrast, research on the effects of the quality of those roles would provide more insight into the causal dynamics of the workplace. The project described here, by overcoming many design limitations found in the existing literature, assessed the relation of workplace adversity to psychological functioning in women teachers.

There is considerably more to teaching than its economic instrumentality for teachers. Thwarted goals (Cooper & Marshall, 1976) and the threat, and reality, of urban school violence (Schonfeld & Santiago, 1994) are likely to affect teachers adversely. The teacher stress literature, however, shares a number of the limitations described above, making it difficult to draw firm conclusions regarding the relation of working conditions to psychological health.

Cross-sectional studies. Because the presumed independent variable's action must precede in time the onset of change in the dependent variable, cross-sectional studies shed almost no light on the impact of job conditions on workers' psychological functioning. A great deal of research on the effects of job conditions on the psychological health of workers in general (Beehr, 1995; Brett et al., 1990; Chen & Spector, 1991; Eaton et al., 1990; Greenberg & Grunberg, 1995; Hall & Spector, 1991; House, 1980; Jex & Spector, in press; Kelloway & Barling, 1991; LaRocco et al., 1980; Loscocco & Spitze, 1990; Miller et al., 1983; Parkes, 1990; Pearlin & Schooler, 1978; Phelan et al., 1991; Schaubroeck et al., 1992) and teachers (Belcastro & Hays, 1984; Galloway et al., 1984; Greenglass & Burke, 1988; Halpin et al., 1985; Johnson et al., 1982; Kyriacou & Sutcliffe, 1978, 1979a; Parkay et al., 1988; Russell et al., 1987; Schonfeld, 1990a; Starnaman & Miller, 1992; Zabel & Zabel, 1982) and other helping professionals (Deutsch, 1984; Farber, 1983; Firth & Britton, 1989; Jayaratne et al., 1986; Latack, 1986) in particular has been cross-sectional.

Longitudinal studies. Although longitudinal designs are ordinarily preferred to cross-sectional designs, longitudinal studies have also had limitations. For example, some longitudinal studies do not fully exploit their longitudinal character, linking risk and protective factors to outcomes from the same "time-2" measurement period (e.g., Doncevic et al., 1988; Nowack, 1991; Parkes, 1990; Wade, 1986). A parallel problem is the linking of time-1-to-time-2 changes in risk factors to collateral changes in putative outcomes (e.g., Holahan & Moos, 1981; Seeman, Seeman, & Budros, 1988). The

classic prospective design calls for the prediction of a time-2 outcome from a time-1 risk factor, controlling for time-1 levels of the outcome. It is, however, possible that many such studies are not "prospective enough" (Kasl & Cobb, 1982). Kasl (1983) found problematic longitudinal studies of work and health that begin after workplace exposures have occurred. Kasl and Cobb (1982) demonstrated the need for longitudinal studies to begin before (a) individuals have had an opportunity to adapt to their work environments and (b) workplace stressors have begun to exert effects.

In the context of research on stressors and mental health, Depue and Monroe (1986) advanced the view that longitudinal studies with a lag of one year or more may be less than optimal because some episodes of distress are acute, with onsets and offsets occurring between measurement periods, creating difficulties for dating and sequencing exposures and onsets of distress. The present study overcomes these difficulties by examining, within a three-year time frame that included eight, strategically placed data-collection periods, the effects of workplace stressors among beginning teachers.

Sample selection. Sample selection has been problematic in occupational stress research. One problem has been the overreliance on both veteran-worker (Schonfeld, Rhee, & Xia, 1995) and male samples (Kasl & Wells, 1985). Veteran workers are more likely to be resistant to the corrosive effects of job stressors and better adapted to their jobs than workers who quit or otherwise leave (Motowildo, Packard, & Manning, 1989). Moreover, links between working conditions and psychological functioning in veteran-worker samples are susceptible to selection-based explanations (Kasl & Cobb, 1982; Schonfeld et al., 1995). By contrast, research with newly employed workers better allows for a test of the selection hypothesis. Although Cobb (1976) strongly argued for longitudinal research on individuals making the transition into the work force, except for a small number of studies (e.g., Nelson & Sutton, 1990), research on such transitions has been rare. The focal concern of the project described here is just that kind of transition.

If research linking work environments to psychological functioning is conducted beginning relatively soon after the members of the target sample assume new work roles, even longitudinal designs can be problematic, particularly when the work environment exerts adverse effects soon after the job incumbent's entrance into the work role. Schonfeld et al. (1995) labeled this situation an immediate-exposure effects model. A time-1 relation between the work environment and psychological functioning may result from the action of workplace exposures; the time-1 relation, however, is also compatible with a reverse causal explanation (e.g., individuals with preexisting mental health problems creating their own poor working conditions). One way to assess immediate effects would be to begin the longitudinal study sufficiently early to allow for the collection, before the workers' entry into the work force, of data on workers' psychological functioning. This project began sufficiently early to ensure the collection of critical preemployment baseline data on the psychological functioning of the sample.

Measurement problems. Kasl and Cobb (1982) observed that the term "stress" has been used in at least five different ways. The term has been used to reflect: environmental conditions, appraised environmental conditions, responses to environmental conditions, responses to appraised environmental conditions, and the relation between environmental challenges and the individual's ability to meet them. Given such variety, it is unsurprising that

conceptual problems have plagued research requiring the measurement of stress. For example, some occupational-stress measures ask workers to rate the personal impact of various working conditions (e.g., Bhagat et al., 1985; Brief et al., 1988). Job stress is then operationalized by adding the negative ratings on the work-related items. Such scales are subject to confounding with preexisting psychological distress and/or the personality trait negative affectivity (NA; Parkes, 1990; Schonfeld, 1992b; Schonfeld et al., 1995; Watson et al., 1987). Moreover, Crandall (1992) found no empirical evidence for an advantage to such complex rating schemes in representing the stressfulness of environmental exposures.

Burnout instruments (Farber, 1984; Greenglass & Burke, 1988) used with teachers and other helping professionals are structured such that items refer to both difficulties at work and psychological distress, the putative independent and dependent variables (Schonfeld, in press a, b; Schonfeld et al., 1995). Self-report teacher-stress instruments (Brenner et al., 1985; DeFrank & Stroup, 1989; Dunham, 1984; Dworkin, 1984; Fimian & Fawtenau, 1990; Fimian & Santoro, 1983; Galloway et al., 1984; Kyriacou & Pratt, 1985) have been subject to confounding with NA and acute psychological distress (Schonfeld et al., 1995). Teacher-stress instruments typically suffer from circularity because they have respondents rate different environmental conditions by their capacity to provoke distress (cf. Kasl, 1978). An additional weakness in these instruments is that they, surprisingly, fail to ascertain the frequency with which teachers encounter the work-related stressors (Schonfeld et al., 1995).

A number of investigators (Kasl, 1978, 1987; Parkes, 1982, Susser, 1981; Theorell, 1987) have warned against the use of overly subjective measures of stress. One solution to the conceptual problems inherent in subjective measures of occupational stress is the use of external, objective measures of the workplace. Objective data on working conditions, however, can have limited utility when applied to within-occupation research. Between-occupations research has benefitted from the availability of objective, external measures of job characteristics. Examples of such objective measures are found in the Dictionary of occupational titles (DOT; U.S. Dept. of Labor, 1965) and the Quality of employment surveys (QES; Quinn & Staines, 1979). The DOT and the QES provide estimates of average values for various workplace conditions (e.g., noise) for each of a great variety of occupations. Because an occupation is summarized by a single value on each dimension, instruments like the DOT and the QES do not capture within-occupation variability in working conditions and, thus, are not applicable to within-occupation research.

Although objective measures of teachers' working conditions are, at least theoretically, superior to self-report instruments because objective measures are external to the teachers recruited to participate in a study, objective measures that pertain to New York City public school teachers—most participants in the project described here have taught in New York City public schools—are astonishingly weak. This author obtained official, objective data on school-by-school rates of assaults, sex offenses, and other crimes against teachers in New York City public schools. These rates were to be used as approximate external indices of the quality of teachers' work environments. Independently obtained findings (Dillon, 1994; Sachar, 1991; Schonfeld, 1992b), however, revealed that these data were biased due to a lack of candor on the part of administrators reporting the relevant findings.

Some occupational-stress researchers (Frese & Zapf, 1988; Kasl, 1987;

Theorell, 1987) advanced the view that under appropriate circumstances, worker reports provide trustworthy data on workplace exposures, provided that the self-report items avoid reference to emotional distress and minimize cognitive processing. Frese and Zapf (1988) criticized the view that because responses to questions about the work environment depend upon cognition, such responses are biased. They noted that individuals can accurately produce their age when asked. Frese and Zapf (1988) went on to show important differences between items like "I feel overwhelmed by the burden of this job" and "How many pieces of work do you complete in a shift?" (p. 382). Schonfeld (in press a; Schonfeld et al., 1995) demonstrated that neutrally worded self-report items (Kasl, 1987) ascertaining the frequency of teachers' exposures to a variety of workplace conditions (e.g., student fighting) can be created to minimize, if not eliminate, confounding with preexisting psychological distress and NA.

Comparison groups. With few exceptions (Eaton et al., 1990, Schonfeld, 1992a), a problem found in the research literature pertaining to teachers is the lack of satisfactory comparison groups. The problem of comparison groups has at least two dimensions: ascertaining suitable comparison samples in (a) between-occupations and (b) within-teachers analyses. The present study addresses both dimensions. First, the present study identified nonteacher comparison subjects who were similar to the teachers on social-demographic characteristics such as age and sex and, on whom preemployment levels of outcome measures like depressive symptoms were available. Second, because there is variation in the quality of teachers' job conditions, teachers who worked in poorly and well run schools could be compared controlling for social-demographic and preemployment characteristics.

Other Factors That Potentially Can Affect Outcomes

A number of factors other than the work environment can potentially affect outcomes. One of them, the personality dimension known as negative affectivity (NA), can bias estimates of effects. Other factors, like social support and coping behaviors, may affect outcomes independently of work stressors or in interaction with them.

Negative affectivity. NA, a mood dispositional trait, gives rise to dysphoric feelings that can affect an individual's attitudes and behavior (Watson & Clark, 1984; Watson & Pennebaker, 1989); NA can, therefore, bias self-report measures of both stressors and distress (Parkes, 1990). Schonfeld (in press a; Schonfeld et al., 1995) found that the neutrally worded self-report items used in this study keep to a reasonable minimum confounding with NA and prior distress. Watson et al. (1987) suggested that NA can also influence selection into work roles. The present study begins early enough to collect data on the preemployment levels of NA, making it possible to assess selection-based explanations.

Social support. There is mounting evidence that social support has beneficial effects on physical-health (House, Umberson, & Landis, 1988; Kaplan et al., 1988). The life stress literature also suggests that social support outside the work context reduces psychological distress (Cohen & Wills, 1985; Kessler & McLeod, 1985) either by buffering the impact of stressors or by exerting direct effects in either the presence or absence of stressors. A great deal of research on the effects of social support within the work context, however, suffers from some of the same limitations described earlier. The research on work-related support has been confined principally to men (Kasl

& Wells, 1985) and has been largely cross-sectional (e.g., Loscocco & Spitze, 1990), limitations not found in the present study.

House and Kahn (1985) advanced the view that "work-related sources of support" are more important in buffering the effects of occupational stressors than are nonwork sources. A review of the cross-sectional evidence (Buunk et al., 1989) is compatible with the view that support from supervisors is more important than support from colleagues. Some cross-sectional evidence suggests that support from coworkers may amplify, rather than buffer, the impact of working conditions on psychological outcomes (Buunk et al., 1989; Kaufmann & Beehr, 1986). The present study includes measures of social support from three sources, friends and relatives outside of work, colleagues, and supervisors.

Cohen and Syme (1985) suggested that for some populations "support will fluctuate as people are socialized into a new environment" (p. 16); prospective studies should, therefore, avoid predicting outcomes a few years in advance of the period during which support in the new environment first forms. The present study (a) exploits longitudinal intervals that are appropriate to the study of support in a new environment and (b) excludes from certain analyses (e.g., in predicting second-term outcomes from the first-term work environment) individuals who changed jobs, and thus colleagues and supervisors, during the interval.

Coping. Most studies of coping have been cross-sectional (e.g., Needle et al., 1981; Schonfeld, 1990b). When studied longitudinally (e.g., Aldwin & Revenson, 1987; Felton & Revenson, 1984; Parkes, 1990; Pearlin et al., 1981), investigators have not fully exploited the longitudinal character of their research designs. Typically, investigators have controlled for time-1 well-being only to examine the relation of time-2 coping to time-2 well-being, making it difficult to ascertain if the coping behaviors preceded changes in well-being or if changes in well-being preceded the coping behaviors. Like social support (Monroe & Steiner, 1986), coping can be influenced by preexisting psychological distress or NA (McCrae & Costa, 1984, 1994; Nelson & Sutton, 1990). The present study controls for the influence of prior distress when examining the relation of occupational coping and social support to future functioning.

Some findings suggest that, compared to the context of more personal parental and spousal roles, the more impersonal work role provides a less hospitable context for coping behaviors to exert ameliorative effects (Pearlin & Schooler, 1978). Consistent with this view, Nelson and Sutton (1990) did not find lagged effects for any coping behaviors on psychological distress in their short-term longitudinal study of new workers. Menaghan and Merves (1984) found that only one of the four coping behaviors studied, optimistic comparisons, was concurrently related to reduced distress, and that another coping behavior, restricted expectations, was related to increased distress. The present study examines the effects of a variety of occupational coping behaviors that are commonly used by the occupational group under study (Schonfeld, 1990b).

Findings from the Teacher Literature

Three cross-sectional studies (Finlay-Jones, 1986; Hammen & deMayo, 1982; Schonfeld, 1990a) suggest that teachers are at risk for high levels of psychological distress, particularly depressive symptoms. Other

cross-sectional evidence (Eaton et al., 1990) suggests that individuals in some types of teacher roles are at high risk for major depression while individuals in other types of teacher roles are at low risk; the characteristics of these roles, however, were not well specified. Schonfeld (1990a) found evidence of exceedingly low levels of job satisfaction among urban teachers. The cross-sectional literature (e.g., Blase, 1986; Dunham, 1984; Finlay-Jones, 1986; Harris, Kagay, & Leichenko, 1986; Kyriacou & Sutcliffe, 1978; Leach, 1984; Needle et al. 1981; Phillips & Lee, 1980; Schonfeld, 1990a) suggests that difficult student-teacher relationships and student violence and misbehavior are risk factors for distress and low levels of job satisfaction in teachers. Some cross-sectional teacher surveys (e.g., Dunham, 1984; Harris et al., 1986; Kyriacou & Sutcliffe, 1978) also identify difficult relationships with colleagues and supervisors as risk factors. One short-term longitudinal study (Korshavn, 1991) indicated that job conditions predicted, independently of preemployment personality, quitting after teachers' first year on the job; psychological outcomes such as depressive symptoms, however, were not examined.

The Present Study

The present study is longitudinal in design, following newly employed women teachers beginning with a preemployment period, through their first three years on the job. Because there is considerable within-occupation variability in the quality of school conditions, teaching is a particularly apt context in which to examine the effects of working conditions of psychological distress and job-related morale (Schonfeld, 1990a). Teacher affect, moreover, tends to be stable through the course of the school year (Brenner et al., 1985; Kinnunen & Leskinen, 1989), providing a suitable background against which to detect effects of working conditions, support, and coping.

In addition, the impact of adverse school conditions (e.g., aggressive students) is likely to be relatively immediate, beginning with the teachers' introduction to the job (Schonfeld, in press a; Schonfeld & Santiago, 1994). The present study, to allow for the collection of critical, preemployment symptom data, began prior to the teachers' obtaining their first jobs. In the first year, data were collected at three points in time within a period of less than one year: during a summer preemployment period and the fall and spring terms. In the second year of the study, data were collected during the intervening summer, and again during the fall and spring terms. During the third year, data were collected during the fall and spring terms. Epstein (1979) and Kasl (1983) underlined the importance of time-sensitive monitoring over a follow-up period. In sets of lagged analyses, outcomes like depressive symptoms and job satisfaction were predicted from working conditions measured earlier in time, adjusting for the preemployment counterparts of those outcomes (e.g., preemployment depressive symptoms, preemployment expected job satisfaction) as well as other potential confounders (e.g., major stressors occurring outside the workplace) and NA.

The neutrally worded self-report items assessed the occurrence of work-related stressors teachers specifically encounter. The items assessed episodically occurring events and ongoing conditions. The episodic stressors included events such as a fight between students, a student or parent threatening the teacher with personal injury, and a student using vulgar language. The ongoing conditions included circumstances such as an absence of highly motivated students, an excessively dirty school building, and lack of safety in or near school. Unlike many traditional stress instruments, the two sets of items do not ask the teachers to attribute annoyance, upset, or distress to the stressors. The scales were confined to assessing frequency or extent.

Schools that expose teachers to high levels of personal hazard and frustration, thwart goals, and offer little opportunity for mastery and professional accomplishment are thought to increase the teacher's risk for psychological distress and depression (cf., Cooper & Marshall, 1976; Seligman, 1975). It was therefore hypothesized that high levels of student misbehavior and interpersonal tension, as reflected by the study's measures of working conditions, put teachers at risk for psychological distress (e.g., depressive symptoms) and low levels of morale, i.e., job satisfaction and motivation to persist in the profession, controlling for potential confounders. In addition, because little is known about the effects of working conditions on teachers' health behaviors, the study examined the influence of working conditions on outcomes like smoking, alcohol use, tranquilizer use, obesity, and sick days. The study also explored direct and interactive effects of social support and coping on all outcomes.

RESEARCH DESIGN AND METHODS

A. Sample Selection

Participants were initially recruited in the late winter and the spring in upper-level senior-year education classes (1987 to 1990) that were identified by faculty and administrative informants as likely, based on extensive past experience, to include graduating students who would go on to obtain teaching jobs in the September following their graduation (the recruitment of the 1987 group was supported by a University grant). The colleges at which the classes were conducted were selected because they have been institutions that historically have supplied local school districts with teachers. In this respect, the participating teachers were representative of individuals who have traditionally entered the teaching profession in the New York City area. Graduating students (1988 to 1990) attending informant-identified upper-level psychology courses conducted at the same colleges were also recruited. Data supplied to the investigator by the Educational Testing Service suggest education and psychology students are similar demographically and academically. 88% of the participants recruited from education classes and 76% of those recruited from psychology classes were female. The table below shows the social demographic characteristics of the women who became teachers some time during the three years following college and the women who did not become teachers after college. Too few men (n = 55) became teachers to include them in the analyses. Except for the proportion married, differences between the teachers and nonteachers were small. The average ages of the groups are consistent with national and local trends regarding the aging of the undergraduate population (Schonfeld & Ruan, 1992).

Social Demographic Characteristics of Women Teachers and Nonteachers

Factor	Taught Some Time During the Early-Career Study[a] (n = 481)	Nonteachers Recruited from Education Courses (n = 125)	Nonteachers Recruited from Psychology Courses (n = 184)	p
Percent				
Married[b]	28.4	17.2	13.7	.01
Nonwhite	29.1	36.8	38.8	.05
Mean				
Age	27.5	27.5	26.0	ns
Soc. Class[c]	2.6	2.7	2.5	ns
HS average	86.1	86.0	85.9	ns
College GPA	3.21	3.08	3.13	.05

[a]The women in this column taught at some time during the three-year early career study including part-time. Five percent of these women were recruited from psychology courses; all the others were recruited from education courses. The table excludes "paraprofessionals," the New York City Board of Education term for assistant teachers.

[b] "Married" here refers to having been married as of the preemployment period.

[c]Social class of origin on Hollingshead's (1974) 5-category scheme.

The students attending the identified courses were asked to indicate whether or not they were about to graduate. This procedure was more practical than relying on records because an intensive check of registrars' records available at the time of recruitment revealed numerous errors in the codes identifying graduating and nongraduating students. Errors carried over to commencement programs. Because registrars' records would not be complete until the September following graduation (at the earliest), too late to facilitate the collection of critical preemployment data (New York metropolitan area teachers typically begin work in September), it was necessary to recruit participants by targeting, in colleges having a track record for staffing local school districts, college classes that had the largest share of graduating seniors who were likely to become teachers the next September.

In every class almost all students who identified themselves as graduating seniors consented to participate. The recruiter ascertained that more than 90% of the eligible students (those identifying themselves as scheduled to graduate that spring semester or the coming summer semester) completed letters of informed consent in the college classrooms in which recruitment took place. The table below describes the numbers of participants recruited.

Participants Recruited and Proportions on Which Data Collection Was Completed

Year Left College	Number Recruited	Percent Completed[a] First Summer (Time 0)	First Fall (Time 1)	First Spring (Time 2)	Second Summer (Time 3)
1987[b]	132	80.7 (of 161)	81.8	65.2	62.9
1988	263	89.3	77.2	78.3	77.6
1989	282	83.7	69.1	67.7	72.0
1990	259	83.4	74.5	75.2	74.1

Year	Number Recruited	Second Fall (Time 4)	Second Spring (Time 5)	Third Fall (Time 6)	Third Spring (Time 7)
1987[b]	132	71.2	77.3	67.4	67.4
1988	263	75.7	74.9	69.2	67.7
1989	282	70.2	68.1	71.3	73.8
1990	259	73.7	71.4	70.3	74.9

[a] Males and females were not separated in these figures. A review of participants' educational histories revealed that 12 participants, who had erroneously believed that they were eligible for the study, had no opportunity to graduate from college during the study period, and were retroactively deemed ineligible for the study. They were excluded from the table. Four women who became full-time teachers some time during the three years of the study but who had not graduated when they first became full-time teachers were included in the sample because (a) they were scheduled to graduate and (b) had sufficient credits to graduate but (c) technical reasons (e.g., dispute with the college about credit for a specific course) prevented their graduating. They obtained jobs that did not immediately require them to have a college degree (e.g., a teaching position in a parochial school). Four women who never became teachers but who obtained other types of full-time jobs some time during the three years of the follow-up were also included in the study because they too were scheduled to graduate but, for technical reasons, did not.

[b] Budgetary constraints in the University award supporting the work with the 1987 cohort meant that, with the exception of two individuals on whom partial Time-0 data were available, participants recruited in 1987 who did not complete the Time-0 questionnaire were not followed into later time periods. The project, however, continued to follow 1987 participants who completed the summer questionnaire but who may not have completed a later questionnaire. After Time 0, the completion rates for the participants recruited in 1987 use 132 in the denominator. The project continued to follow 1988 (n in denominator = 263), 1989 (n = 282), and 1990 (n = 259) subjects whether or not they participated at Time 0 or at any other data collection period.

In year-one the project obtained some data on 88% (717/936) of the sample. In year-two the project obtained some data on 83% (774/936) of the sample. In the third year, when the project had only two data collection periods, data were obtained on 76% (713/936) of the sample.

The project identified 444 women who taught full-time on some occasion during the three years of their participation in the study. Of the 444 women who, post-college, taught full-time, 12 held teaching jobs that were continuous with jobs they held before they graduated (e.g., a woman who taught in a local Catholic school prior to obtaining her baccalaureate continued to teach there after obtaining the degree--unlike local public schools many local Catholic schools hire teachers without baccalaureate degrees). The analyses described later pertain to individuals who are new to teaching, and thus exclude the 12. There were, however, exceptions to the exclusion rule for prior teaching. Ten women who had prior teaching experiences that were judged to be discontinuous with the jobs they obtained following graduation were considered to be new teachers (e.g., a woman who taught without a degree in her third-world country of origin prior to her emigrating to the United States and who obtained a job in the fall in a New York City public school).

Also not included in the analyses are 37 women whose only teaching jobs during the three-year period were part-time. Another 14 women who were paraprofessionals were also excluded. The 51 were excluded because their exposures are categorically different from that of full-time teachers.

B. Design

In year 1 subjects completed questionnaires in the summer, preemployment period (Time 0), fall (Time 1), and spring (Time 2). They were also contacted three times during the second year (summer, fall, and spring; Times 3, 4, and 5, respectively) and two times during the third year (fall and spring; Times 6 and 7, respectively).

The data obtained in the summer, preemployment period were as follows: basic demographic information including social class of origin, depressive symptoms, psychophysiological (PP) symptoms, alcohol consumption, cigarette smoking, tranquilizer use, self-esteem, expected job satisfaction, motivation to be a teacher in the near and distant future, life events (e.g., marriage, death of a loved one), social support, locus of control, assertiveness, and self-disclosure.

The measures employed in the fall (Times 1, 4, and 6) and spring (Times 2, 5, and 7) data collection periods of the first, second, and third years of the study were as follows: current job, depressive symptoms, self-esteem, job satisfaction, motivation to teach in the near and distant future, PP symptoms, tranquilizer use, alcohol consumption, cigarette smoking, absences from work due to illness, job resignations and other occupational exits, life events, teaching-related support from colleagues and supervisors, and measures of the school environment (e.g., violent students, vandalism). During Time 1, information was also obtained on whether the teachers' had prior acquaintance with any members of the school's professional staff.

The measures employed in the second summer (Time 3) are similar to the measures employed in the first summer (Time 0); however, assertiveness and self-disclosure items are not administered a second time.

The study employed carefully designed scales to measure adversity in teachers' working conditions. The items that composed the scales comprised neutrally worded self-reports of the frequency with which the teachers encountered the condition (e.g., students engaged in a fight). Consistent with the views of Kasl (1987), Theorell (1987), and Frese and Zapf (1988), the

instruments employed in the present study minimize reference to the degree to which the teacher is distressed, bothered, or upset by the condition. Such items are confounded with psychological symptoms.

C. Instruments

Wherever possible the scales included positively and negatively worded items to break subjects' tendencies toward response set. Moreover instruments of known validity were employed when such instruments were required. Research on psychological symptom scales indicates that compared to interview versions, written versions, like the ones used in the present study, tend to be less vulnerable to retesting artifacts (Jorm et al. 1989). The components of the various questionnaires are enumerated below. Validity efforts on the principal work-environment measures, the Episodic and Ongoing Stressors Scales, are described in the subsection on those scales.

Social support outside the occupational context. (Administered during the first and second summers to all subjects.) This measure is an 8-item, abridged version of Cohen et al.'s (1983) Interpersonal Support Evaluation List (ISEL) modified specially by Cohen (personal communication, 1986) for use in general population surveys. The scale includes items that assess tangible support, belongingness, and the availability of confidants. This abridged scale excludes the ISEL's self-esteem support items because they tend to be confounded with psychological symptoms (Schonfeld, 1991). Research (Schonfeld, 1995) with the scale indicates that it has satisfactory reliability, alpha = .74 (M = 3.61, sd = .39).

Locus of Control. (Administered during the first and second summers to all subjects.) Rotter's (1966) measure of locus of control was employed. Schonfeld (1995) found that the scale had satisfactory reliability in this sample, alpha = .73 (M = 11.27, sd = 4.18). Low scale scores reflect an internal orientation, the expectation that reinforcement is controlled by individuals. High scores reflect an external orientation, the expectation that individuals do not exert control, and that chance, luck, and larger forces control events.

Assertiveness. (Administered during the first summer to all subjects. This 8-item social competence measure was adapted from Levinson and Gottman (1978). The mean, standard deviation, and alpha coefficient for the scale were 3.62, .58, and .76, respectively.

Self-Disclosure. (Administered during the first summer to all subjects.) This second social competence measure was adapted from Jourard (1971). The 24-item measure is thought to assess a social behavior that wins friends Cohen et al. (1986), thereby increasing support for the individual. The mean, standard deviation, and alpha coefficient for the scale were 1.56, .52, and .90, respectively.

Self-Esteem. (Administered to all subjects in all data collection periods.) This 6-item measure of self-esteem derived from Pearlin and Schooler (1978). The means and standard deviations for the preemployment period and the teachers' second term are presented in Tables 1 and 2, respectively. The alpha coefficient for the scale exceeded .80.

Fateful Life Events. (Administered in all data collection periods to all subjects.) A short checklist of major, undesirable life events that are likely

to cause distress was constructed out of existing life event instruments (Dohrenwend et al, 1982; Paykel, 1978). The checklist includes undesirable, fateful events that are likely to have been caused by factors independent of the respondent's personality (e.g., death of a loved one). The items making up this scale are considered "causal indicators" (Bollen & Lennox, 1991) of major life stress outside of work, rather than "effects" of the construct life stress as in classical test theory. A coefficient alpha was, therefore, not warranted.

Depressive Symptoms. (Administered in all data collection periods to all subjects.) Depressive symptoms were measured with the 20-item Center for Epidemiologic Studies Depression scale (CES-D; Radloff, 1977; Weissman, 1977). The means and standard deviations for this scale are found in Tables 1 and 2. The alpha coefficient exceeded .90.

Psychophysiological (PP) Symptoms. (Administered in all data collection periods to all subjects.) These were measured by 17 items that ascertain the frequency of symptoms held to be psychosomatic (Cronkite & Moos, 1984). Such symptoms include headaches, chest pains, stomachaches, back pains, etc. Evidence adduced by Watson and Pennebaker (1989) and Schonfeld (in press) suggest that although PP symptoms scales tap acute distress, in young-adult samples such scales load on Negative Affectivity (NA), a personality dimension that is thought to reflect the disposition to experience distress. NA is thus likely to affect self-reports of life stress (Brief et al, 1988) and needs to be controlled in occupational stress research (Parkes, 1990). Preemployment PP Symptoms was therefore used as a control for the disposition. The means and standard deviations for this scale are found in Tables 1 and 2. The alpha coefficient exceeded .80.

Smoking and Alcohol Use. (Administered to all subjects in all data collection periods.) Smoking was ascertained by asking the respondent to indicate whether or not she smoked. If the respondent answered in the affirmative, she was asked to indicate the average number of cigarettes she smoked per day. Amount of alcohol consumed was ascertained by an item derived from Conway et al. (1981). Research on self-reported alcohol consumption suggests that such measures accurately assess consumption (Midanik, 1982).

Obesity. (Administered to all subjects in all data collection periods.) Obesity was measured by the Quetelet ratio (weight/height^2).

Tranquilizer Use. (Administered to all subjects in all data collection periods.) Beginning in the summer of 1988, one item was included that assessed the frequency with which the respondent used tranquilizers.

Expected Job Satisfaction. (Administered during the first summer to all subjects.) Expected job satisfaction was assessed with one item ("Overall, how satisfied do you expect to be in the job you are about to get?"). The Expected Satisfaction item was the only item that could be worded commensurately with any of the three Job Satisfaction items described below. The scale's mean and standard deviation are found in Table 1. Scales consisting of a single item are vulnerable to more unreliability than multi-item scales. It was, however, important to measure preemployment expectations about work because such expectations constitute a potentially important control variable when assessing the impact of working conditions on postemployment job satisfaction (Louis, 1980; Nelson, 1987).

Job Satisfaction. (Administered to all subjects in every data collection period except the first summer.) Three scalable items ("Overall, how satisfied are you with your current job?," "In general, to what extent does your job measure up to the sort of job you wanted when you took it?," and "If a good friend says he or she is interested in a job like yours, and wants you opinion, what would you tell your friend?") measuring job satisfaction were adapted from Quinn and Staines (1979). Means and standard deviations are found in Tables 1 and 2. The alpha coefficient exceeded .70.

Motivation to Be a Teacher in the Future. (Administered to all subjects during every data collection period.) Motivation to Teach was measured by three items ("In your estimation, how likely is it that you will be a teacher in two [five, ten] years time?") derived from Kyriacou and Sutcliffe (1979a). Means and standard deviations are found in Tables 1 and 2. The alpha coefficient was .59 during the preemployment period and exceeded .75 during postemployment periods.

A review of the teacher-stress literature and suggestions made by teacher-informants contributed to item development in both the Episodic and Ongoing Stressor Scales (the latter was formerly called the Strain Scale). The scales cover student, administrative, and colleague domains. The items measure only the frequency with which the teacher respondents encounter each potential stressor. Consistent with the earlier discussion of confounding in many stress measures, respondents are not asked to identify stressors by the distress they are thought to evoke.

Ongoing Stressors. (Administered only to teachers in the fall and spring of years one, two, and three.) The Ongoing Stressor Scale measures the average extent to which teachers encounter ongoing difficulties such as an overcrowded classroom, a classroom in disrepair, or a lack of safety in or near the school (Schonfeld 1990a, 1992a, 1995b, in press a). Each item was scored: 0 (not at all), 1 (to a minimal extent), 2 (to a small extent), 3 (to a moderate extent), and 4 (to a great extent).

Episodic Stressors. (Administered only to teachers in the fall and spring of years one, two, and three.) The Episodic Stressor Scale measures the average frequency with which teachers encounter eventful stressors such as a threat of personal injury, a confrontation initiated by an insolent student, or an episode of vandalism (Schonfeld 1990a, 1992a, 1995b, in press a). Each item was scored: 0 (not at all), 1 (once per month), 2 (once per week), 3 (2-4 times per week), and 4 (daily). Positively worded items (e.g., "A parent praised you") were reverse scored and included in both work-environment scales for the purpose of breaking response sets.

The reliability coefficients of both the Episodic and Ongoing Stressor Scales were satisfactory, exceeding .80. The means and standard deviations of the Episodic and Ongoing Stressor Scales changed slightly from one data collection period to the next. When the women first became full-time teachers, the mean and standard deviation of the Episodic Stressor Scales were 1.08 and .50, respectively. Because research evidence (Schonfeld, in press a; Schonfeld et al., 1995) indicates that, compared to the Ongoing Stressor Scale, the Episodic Stressor Scale was slightly less confounded with NA and preemployment psychological distress, the Episodic Stressor Scale was used in the analyses described in this report. However, reports demonstrate the overall comparability of effects on outcomes for the Ongoing and Episodic Stressor Scales (see Schonfeld, 1995a; in press a).

Previous research on the Stressor Scales. The two workplace stressor variables and the Colleague Support measure described above were pilot tested on a veteran-teacher sample (Schonfeld, 1990a). The study demonstrated satisfactory internal consistency reliability and validity coefficients (predicting psychological symptoms, Job Satisfaction, and Motivation). The two workplace stressor measures were more highly related to each other than to measures of nonwork stress. A second study (Schonfeld, 1994) conducted on a different veteran-teacher sample showed that the work-environment scales and the Colleague Support Scale had satisfactory retest reliabilities, were related to Satisfaction and Motivation (symptoms were not measured), and the correlations were not affected by social desirability bias. An initial study of the new teachers indicated that Time-1 work-environment measures (Schonfeld, 1995a) were more closely related to Time-2 outcomes (Depressive Symptoms, Job Satisfaction, and Motivation to Continue in the Teaching Profession) measured four and a half months after Time 1 than to the Time-0 (preemployment) counterparts of the outcomes measured four and a half months before Time 1.

Crimes. (Administered only to teachers in the fall and spring of years one, two, and three.) The teachers were asked to report on having been the victim of an assault, robbery, or property damage in or near the school. The Crime Scale also included assaults against other teachers. The Crime Scale was constructed simply by tallying the number of crimes. Unlike the two other measures of the work environment, the Crime items (like the life-event items) are considered causal indicators (Bollen & Lennox, 1991) of the construct to which the items contribute, rather than effects of the construct as in classical test theory. A coefficient alpha was, therefore, not warranted. Since few teachers were victims of serious crimes (e.g., assault), the author does not report on the Crime Scale here, although findings bearing on the scale can be found in Schonfeld (in press a).

Colleague and other work-related support. (Administered only to teachers in the fall and spring of years one, two, and three.) Perceived social support from colleagues was measured by a scale consisting of eight items assessing the availability of social companionship, confidants, and tangible help. Additional items adapted from House (1980) assessed perceived instrumental and socio-emotional support from supervisors. The means and standard deviations of the Colleague (M = 3.14, sd = .53 when the women first became full-time teachers) and Supervisor Support Scales (M = 18.26, sd = 4.80) changed slightly from one data collection period to the next. Reliability was satisfactory (alpha for Colleague Support > .70 and alpha for Supervisor Support > .80).

Other items ascertained whether the beginning teachers may have had prior acquaintance with some members the faculty (e.g., a college friend) and supervisors. These items contribute to analyses bearing on the formation of social support in the workplace.

Teacher coping. (Administered in the fall and spring of years one, two, and three only to teachers.) Items assessed behavioral and cognitive coping strategies the teachers employed in response to school-related stressors (Schonfeld, 1990a). Items were based (a) on existing instruments covering work roles and child supervisory roles as well as (b) on contributions made by teacher informants. The coping scales measure Advice Seeking (7 items), Positive Comparisons (2 items; favorably comparing one's work situation against that of others), Selective Ignoring (5 items; diverting one's attention from disagreeable aspects of the job), Optimism (2 items); inclination to use Discipline in response to student misbehavior (6 items), and belief that Direct Action in the classroom can effect educational goals (4 items). Prior research

(Schonfeld, 1995) with these scales indicates that the average alpha coefficient for these scales was .66.

Days Absent from Work Due to Ill Health. (Administered in the fall and spring of years one, two, and three to all subjects.) Items ascertained days absent from work resulting from ill health.

Job Leaves. (Administered in every data collection period following the first summer to all subjects.) Data were also collected on changing schools, quitting, firings, layoffs, and other job changes (e.g., transfers).

Unconstrained Commentary. (Administered in the fall and spring of years one, two, and three to all subjects.) Participants were given an opportunity to write about their jobs. Space on the surveys was provided for the commentary and participants were instructed that they could add their own paper if more than the alloted space was required.

RESULTS

1. Teacher and Nonteachers

A number of comparisons among teachers and nonteachers was conducted. In order to conduct these comparisons, the necessary groups of teachers and nonteachers were identified. First, women who were full-time teachers in one school during their first year on the job were stratified on their first-term Episodic Stressor Scale (in other words, the Episodic Stressor Scale the measured during their first semester of teaching). Based on scale scores marking the 33rd and 67th percentile ranks, the teachers were operationally defined as exposed to Low-, Medium-, and High-Adversity school environments. Next women who never taught during the three years of the study and who worked full-time in a nonteaching job during the same first-year period as the teachers were also identified. In order to control for differences in teaching-nonteaching job status, any nonteachers who obtained jobs rated 4 or less on Hollingshead's (1974) 9-point scale (there is also a 5-point scale that does not apply to these analyses) were excluded. The purpose of the exclusion rule was to ensure comparability to the teachers by excluding the small number of women who obtained blue collar and serving-type jobs (e.g., waitress). Typically, the nonteachers obtained jobs as social workers, secretaries, and clerks.

In order to improve the power of the analyses, a careful search of the data set located women who began their teaching careers later than the first fall semester (Time 1) following the traditional May-June college graduation ceremonies (e.g., women who started teaching in the spring term following graduation or even at some later date). Computer programs were written that merged these "late starters" with the women who began their careers "on time," i.e., the first fall after the May-June graduations, thus increasing the *ns* for the following analyses.

One-way analyses of variance (ANOVAs) were conducted to assess group differences on the preemployment counterparts of the psychological outcome measures (see Table 1). In addition, one-way ANOVAs (see Table 2) were also conducted to assess group differences on second-term psychological measures. Thus the analyses assessed preemployment and second-term differences as a function of the women's first-term status. Table 1 indicates that the women

Insert Table 1 about here

did not differ significantly on Depressive Symptoms, Self-Esteem, and Motivation to Teach (nonteachers were not included in the analyses of this outcome). Although the three groups of prospective teachers did not differ on Expected Job Satisfaction, the Nonteachers had significantly lower expectations. Nonteachers and women in the high adversity group showed significantly more preemployment PP Symptoms. As described in the next section, in each of the regression analyses involving teachers, preemployment PP Symptoms, a measure that loads on NA and that also taps acute distress, is controlled.

The ANOVAs bearing on second-term outcomes show group differences on every outcome (see Table 2). Among the teachers, the high-adversity group had the most disadvantaged scores (most Depressive Symptoms, poorest Self-Esteem, lowest Job Satisfaction, least Motivation, and most PP Symptoms). The nonteacher group, however, was more comparable to the high-adversity teaching group than to any other group. The findings suggest that the nonteaching group, beginning with the summer following college, had low expectations about their futures that carried through to their jobs. Although it is difficult to rule out selection, this early difference may partly reflect the uncertain employment picture many new college graduates faced in the late 1980s. The difference suggests that women who obtained jobs in low-adversity schools compared favorably to their nonteaching peers as well as to their peers in the worst run schools. The mean second-term CES-D score of the teachers in the worst run schools is alarmingly high, exceeding the value of 16, a score marking an increased risk for psychiatric disorder (Radloff, 1978; Weissman et al., 1978).

Insert Table 2 about here

By the beginning of their second year of work (their third term of teaching) the women who held full-time nonteaching jobs compared unfavorably with the teachers who worked in the most well run schools and resembled closely the women who taught in the worse run schools. For example, the nonteachers had very high levels of depressive symptoms (mean CES-D = 16.5, a value in the "clinical range"). Because the analyses were limited to full-time teachers who had not changed jobs between the time periods involved, the investigator limited the comparison group to women who worked full-time in nonteaching jobs and had not changed jobs during the intervening period. In addition, the comparison women had to have jobs the social status of which was similar to (or at least not too dissimilar from) that of teaching. Unfortunately only a relatively small number of women (n = 42) qualified for the comparison group, too few to continue into later time periods group comparisons on the psychological outcomes. Although generalizations regarding the stressfulness of the jobs (e.g., social work) held by the comparison women are tempting, the sample size is too small and too selected to be warrant any generalization.

Tables 3 and 4 show the results of ANOVAs comparing teachers and

Insert Table 3 about here

nonteachers on the health-behavioral outcomes. The analyses generally show no differences in initial health behaviors. Because there were some nonteachers with many days absent, the only second-term (see Table 4) difference between teachers and nonteachers was in days absent. As described above, the number of nonteachers who qualified for health-behavior comparisons at later time periods limited the usefulness of later comparisons.

Insert Table 4 about here

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2. and 3. Within-Teachers Analyses.

Overview of Data-Analytic Procedures

In each analysis, an outcome variable measured during a later academic term was regressed on the Episodic Stressor Scale from an earlier academic term. The regression analyses examined outcomes measured during the teachers' second term of their first year on the job, first term of their second year, and first term of their third year. Thus first-, second-, and third-year outcomes were examined. Of course outcomes assessed at other academic terms could have been examined; however, the span of coverage afforded by these analyses provides a reasonable look at the effects of the various risk and protective factors. Analyses of outcome data collected during other academic terms would not substantially change the thrust of this report.

Every regression equation included a number of control variables regardless of their significance levels: the preemployment counterpart of the outcome, preemployment PP Symptoms as a control for NA (when a later PP Symptoms Scale was the outcome the first two control variables were, of course, the same), age, race, social class of origin, marital status, and number of undesirable, fateful life events occurring outside the workplace. The three social support measures, General Support (from friends and relatives), which was measured during the preemployment period, and the Colleague and Supervisor Support scales, which were measured contemporaneously with the Episodic Stressor Scale, were also included in each equation.

Rather than controlling for the early-term counterpart of the later-term outcome, the preemployment counterpart was controlled because there is evidence that the early-term psychological measures had already been affected by job conditions, as per the immediate-exposure effects model described by Schonfeld (in press a; Schonfeld et al. 1995). By controlling for the preemployment counterpart of each later-term outcome, the regression weight for the Episodic Stressor Scale represents the average amount of change from preemployment baseline levels per unit change in the risk factor.

To conserve power, when the Episodic Stressor Scale was nonmissing but the participant had one or two other missing data points a procedure described by Cohen and Cohen (1983) was employed in order to avoid having to delete the subject from the analysis. A binary dummy-coded variable served a missing value indicator and was included in each regression equation and means were substituted for the missing values.

As indicated earlier, three series of regressions were conducted: second-term outcomes were predicted from first-term risk and protective factors; second-year (term-3) outcomes, from the first-year (term-1) factors; and third-year (term-5) outcomes, from second-year (term-3) factors. The three series are presented first for the psychological outcomes (Depressive Symptoms, Self-Esteem, Job Satisfaction, Motivation to Continue in the Teaching Profession, and Psychophysiological Symptoms). Three series of regression analyses are then presented for the health-behavior outcomes (Smoking, Alcohol Use, Obesity, Days Absent Due to Ill Health, and Tranquilizer Use).

The analyses were expected to reveal stable patterns. If for example, a factor is found to predict outcomes measured in one time period, one would expect to observe significant prediction more or less throughout the time chain. Otherwise, if a significant effect is found only once for such a predictor, the effect is likely to reflect a Type I error.

Two important constraints were placed on the regression analyses. First, the women had to have worked full-time in each time period. The exposures of full- and part-time teachers are markedly different. Second, each woman had to have remained a teacher in the same school across the two time periods involved a regression analysis (e.g., between term 1 and term 2). Although there is considerable overlap in the teachers studied at different time periods, some teachers who make up the sample for a set of analyses that examine outcomes measured at one time period may not be included when the analyses shift to examine outcomes measured at a different time period because some teachers changed schools or entered or left the profession at different times. It is possible, for example, for a teacher to be deleted from a term-1-to-term-2 analyses because she changed schools at some point between those two time periods; however, she may be included in the year-two-to-year-three analyses because she remained in the same school between the latter two time periods. The analyses linking earlier working conditions to later outcomes depend upon the assumption that there is continuity in workplace exposures over linked time periods.

As indicated in the previous section, in order improve power, a careful search of the data set identified women who began teaching careers later than the first fall semester (Time 1) following the traditional May-June college graduation ceremonies. Software was written specifically to merge these "late starters" with the women who began their careers "on time," i.e., the first fall after the May-June graduations. Compared to the sample sizes for analyses that were limited to women who obtained jobs on time (Schonfeld, 1995a), the "merger" increased ns, and thus improved power. A preliminary series of term-1-term-2 of analyses of the psychological outcomes (e.g., Depressive Symptoms, Self-Esteem, Job Satisfaction, Motivation, and PP Symptoms) using only women who began teaching on time (Time 1) produced results that were very similar

to parallel analyses that used all full-time teachers (provided of course they did not change schools) regardless of whether they started their careers at Time 1 or some later occasion.

Another power conserving method was also employed. With the excepton of the summer of 1987, if a woman failed to participate during a particular data collection period, the woman was not dropped from the study. The study team attempted to prevail upon the woman to participate at later time periods. Wherever feasible, the analyses capitalized on all eligible subjects (e.g., full-time women teachers working in the same school during the time periods involved in the analyses). Thus a woman could be included an analysis predicting term-5 outcomes from term-3 predictors if the woman missed the term-4 data collection period but had not changed schools during the interval.

The analyses still made use of control variables from the first-summer preemployment period (e.g., preemployment PP Symptoms) despite the fact that the late starters had longer preemployment periods. There were two considerations. First, the summer preemployment period is a common baseline for all women. The regression equations assess the effect of each risk and protective factor on later outcomes (e.g., second-term Depressive Symptoms) controlling for the preemployment counterpart of that outcomes (e.g., preemployment Depressive Symptoms). Thus the regression coefficient for the first-term Episodic Stressor Scale reflects the average amount of change from a common preemployment baseline per unit change in the risk factor.

The second consideration involved a comparison of two correlation matrices. One matrix was derived from a submatrix of the correlations in a fall-spring study that followed teachers who entered and remained in the profession for the year following graduation from college (Schonfeld, 1995a). No late starters were included in the study sample. The study provided correlations of the preemployment control variables (e.g., preemployment Depressive Symptoms) and preemployment social support with fall-term risk (e.g., Episodic and Ongoing Stressors) and protective factors (e.g., Colleague and Supervisor Support) and spring-term outcomes (e.g., spring-term Depressive Symptoms). Again, the first correlation matrix included only women who began teaching "on time." A second matrix paralleling the first was computed using the merged data set, thus including the women who started teaching on time as well as the late starters. The average correlational difference between the two matrices was .016, with a slightly higher average correlation for the matrix that included only on-time women. Thus merging the late starters into the analyses only trivially affected the influence of the preemployment control variables.

Psychological Outcomes

Term-2 Psychological Outcomes. The regression analyses pertaining to the second-term psychological outcomes (see Table 5) indicate that first-term Episodic Stressors predict second-term Depressive Symptoms, (lower) Self-Esteem, (reduced) Job Satisfaction, and (poorer) Motivation. Preemployment General Social Support had a beneficial effect on second-term Depressive and PP Symptoms as well as Self-Esteem. Both first-term Colleague and Supervisor Support contributed to later Job Satisfaction although the effect size for Supervisor Support was almost twice that of Colleague Support. Supervisor Support also had beneficial effects on Motivation To Teach.

Insert Table 5 about here

Exploratory analyses were conducted in order to locate the interaction of the support factors with the Episodic Stressor Scale. To conserve power, only one interaction effect was permited in any equation at any one time (future analyses will explore the "best" interactions). Additionally, each predictor variable used in assessing any interaction was centered about its mean in a procedure described by Jaccard et al. (1990) in order to minimize collinearity between the multiplicative interaction term and the "main effects" terms. In the term-1-term-2 analyses, little in the way of interactions was detected.

Only the multiplicative term representing the interaction of Supervisor Support and Episodic Stressors in predicting term-2 Motivation attained a conventional level of significance ($p < .05$). The interaction is depicted in Figure 1 (Figure 1 and later figures that graph interactions identify women who are high and low in the resource factor by selecting values one standard deviation above and below the sample mean for the resource). The interaction was not a buffering type. Under high support, workplace adversity was inversely related to Motivation. By contrast, in a buffering type interaction, the presence of high support would mitigate the impact of adversity in the work environment. Under low support, the women showed low levels of Motivation regardless of their levels of exposure to workplace adversity. In other words, low Supervisor Support behaved as if it were an additional stressor; absence of such support reduced Motivation in both good and bad work environments.

Insert Figure 1 about here

Additional exploratory analyses found little in the way of effects for the coping behaviors and Locus of Control. In the exploratory analyses of the effects of coping, each regression equation was extended to include one of the six coping scales or the dispositional factor Locus of Control on a rotating basis. Each equation thus included age, social class of origin, race, current marital status, undesirable fateful life events, the Episodic Stressor Scale, the three support measures, preemployment PP Symptoms, and the preemployment counterpart of the outcome. Next, one of the six coping scales or Locus of Control was added to the equation. Only one significant ($p < .05$) direct effect was detected: Term-1 Positive Comparisons were related to better Term-2 Self-Esteem. In a final step, an interaction term involving the coping behavior or Locus of Control and the Episodic Stressor Scale was added. No significant interactions were detected.

Second-Year (Third-Term) Psychological Outcomes. Each of the psychological outcomes from the first term of the teachers' second year (third term) was regressed on the same set of predictors and control variables used to predict the second-term psychological outcomes. Because of quitting and transfers, fewer women persisted in the same school between the first and second year, reducing ns and, consequently, the power to detect effects (compare the ns in Tables 5 and 6). Table 6 indicates that first-term Episodic Stressor Scale predicted second-year Depressive Symptoms, poor Self-Esteem, and job dissatisfaction. General Support predicted improved Self-Esteem. Supervisor Support predicted improved Job Satisfaction. Colleague Support did not significantly predict any of the psychological outcomes.

Insert Table 6 about here

Exploratory analyses examined the interactive effects of each of the three social support variables as well as the direct and interactive effects of the coping behaviors and Locus of Control. A limited number of significant direct effects was found: Positive Comparisons and Optimism decreasing future Depressive Symptoms ($p < .05$); Positive Comparisons increasing Self-Esteem ($p < .05$).

Compared to the term-one-to-term-two analyses, there were more significant interaction effects in the year-one-to-year-two analyses. A buffering type interaction was suggested for Episodic Stressors and Supervisor Support in their combined effect on Depressive Symptoms ($p < .06$). The interaction is depicted in Figure 2.

Insert Figure 2 about here

A similar pattern of buffering was found for the interaction of Episodic Stressors with (a) Supervisor Support ($p < .05$) and (b) Locus of Control ($p < .05$) on PP Symptoms. In the latter interaction "internality" can be construed as the buffering "resource." By contrast, the interaction of the Episodic Stressor Scale with the coping behavior Optimism ($p < .05$) did not reflect a buffering type interaction. Among the women who were initially high in Optimism, adversity in the work environment was directly related to second-year Depressive Symptoms. By contrast, women low in Optimism showed relatively high levels of Depressive Symptoms. Optimism also interacted ($p < .05$) with the Episodic Stressor Scale to affect Motivation to Teach. Under low Optimism, Motivation was low virtually independently of working conditions. Under high levels of Optimism, Motivation declined steadily with increasing adversity in the work environment. Although Direct Action interacted ($p \approx .05$) with Episodic Stressors to affect Job Satisfaction, the interaction did not reflect buffering. Indeed such an interaction may be said to reflect "reverse buffering" (Beehr, 1994). Compared to women who were low in Direct Action, women who were high on Direct Action showed a sharper decline in Job Satisfaction as a function of workplace adversity.

On balance there was evidence supporting the view that Supervisor Support and an internal locus of control provided some stress buffering.

Third-Year (Fifth-Term) Psychological Outcomes. Each of the psychological outcomes from the teachers' third year (actually the first term of the teachers' third year; overall their fifth term as teachers) was regressed on the the following predictors: Episodic Stressors, Supervisor Support, and Colleague Support from the teachers' second year (the first term of the teachers' second year; their third term overall) as well as preemployment General Support. The analyses were limited to women who did not change schools between those second- and third-year periods. Regression equations were

adjusted for the same control variables described earlier (the preemployment counterpart of the later-term outcome, preemployment PP Symptoms, age, race, social class of origin, marital status, and number of undesirable, fateful life events occurring outside the workplace). Table 7 indicates that, relative to preemployment baselines, second-year Episodic Stressors were significantly related to elevated third-year Depressive and PP Symptoms as well as diminished Job Satisfaction. Second-year Colleague Support was significantly related to reduced third-year Depressive and PP Symptoms and marginally related to better Self-Esteem. Second-year Supervisor Support predicted higher levels of third-year Job Satisfaction. Preemployment General Support was marginally related to better third-year Self-Esteem. General Support exerted only a marginal effect on third-year Self-Esteem.

Insert Table 7 about here

Exploratory analyses assessed for interactions between the support measures and the Episodic Stressor Scale. One significant interaction was found: Episodic Stressors and General Support interacted ($p < .05$) to affect later Self-Esteem. The shape of the interaction suggested buffering: under low but not high support, adversity in the school predicted poor Self-Esteem.

Additional exploratory analyses examined direct and interactive effects of coping and Locus of Control. Four direct effects were detected: two involving Discipline Use and two, Selective Ignoring. Discipline Use was significantly related to reduced Job Satisfaction and Motivation ($p < .05$). Selective Ignoring was related to <u>increased</u> Depressive ($p < .01$) and PP Symptoms ($p < .05$).

A number of significant coping-related interaction effects was detected; most, however, were conceptually similar (see Figure 3). Locus of Control ($p < .05$) interacted with Episodic Stressors to predict later Depressive Symptoms. As shown in Figure 3, among both "internals" and "externals" Episodic Stressors predicted later elevated Depressive Symptoms; among externals, however, Stressors predicted symptoms more sharply. Such an interaction may be aptly named "modest buffering." Conceptually similar modest buffering interactions obtained for Optimism ($p < .01$) and Locus of Control ($p < .05$) in predicting future PP Symptoms. Under both low and high levels of Optimism, Episodic Stressors predicted symptoms; under low Optimism, Stressors predicted symptoms more sharply. Likewise, among both internals and externals Episodic Stressors predicted future PP Symptoms; among externals, however, Stressors were more highly related to symptoms. Advice Seeking interacted ($p < .05$) similarly with Episodic Stressors in predicting Job Satisfaction: under low Advice Seeking Episodic Stressors were more sharply related to declining Job Satisfaction than under high Advice Seeking. Advice Seeking also interacted ($p < .05$) with Episodic Stressors to affect Motivation. The interaction was disordinal as per Figure 4 shown in the next section. Selective Ignoring similarly, disordinally interacted ($p \approx .05$) with the Episodic Stressor to affect Self-Esteem.

Insert Figure 3 about here

Health Behavior Outcomes

Regression procedures paralleling the procedures employed in examining the relation of risk and protective factors to psychological outcomes were used to study the relation of the work environment and support factors to the health-behavior outcomes. Similar power-conserving strategies were also put in place (e.g., merging late starters with women who began their careers on time, centering many predictors, dummy coded missing value indicators). In each regression equation, a number of factors were controlled including the preemployment counterpart of the later-term outcome (except for Days Absent from Work Due to Ill Health because there was no preemployment counterpart), preemployment PP Symptoms as a control for NA, age, race, social class of origin, marital status, and number of undesirable, fateful life events occurring outside the workplace.

Term-2 Health Behavior Outcomes. Table 8 summarizes the results bearing on the direct effects of the predictors on each of the five health behaviors assessed during the second term. First-term Colleague Support was the only factor to predict number of cigarettes smoked mainly because, as separate within-smokers analyses revealed, Colleague Support predicted average number of cigarettes smoked by women who initially were smokers. None of the factors predicted alcohol consumption significantly. Episodic Stressors was the only factor to predict later Tranquilizer Use; this relation, however, was extremely modest. The base rate for Tranquilizer Use during the preemployment period was very low (1%). Only four of 161 women who did not use tranquilizers during the preemployment period had become tranquilizer users by the second term. None of the factors predicted Obesity. Supervisor Support was the only factor to be even marginally related to Days Absent Due to Ill Health. Greater Supervisor Support was related to fewer Days Absent.

Insert Table 8 about here

Exploratory analyses of interactions of the support factors with Episodic Stressors are presented for three of the five health-behavior outcomes (as indicated above Tranqulizer Use was too rare an outcome to make the analyses useful; too few smokers were available [n = 35] to examine interactions in within-smokers analyses; too few women made the transition from smoker to nonsmoker [n = 5] or vice versa [n = 7]). Only one significant Stressor-by-Support interaction was found. Among women who were high in General Support, work-environment adversity was directly related to obesity during the second term. Among women who were low in General Support, work stressors were inversely related to term-two obesity. The interaction was disordinal as depicted in the next section in Figure 4.

Exploratory analyses were extended to the direct and interactive effects of the coping behaviors and Locus of Control. A small number of direct and interactive effects were observed. First-term Discipline Use was related to fewer ($p < .01$) Term-2 absences while Optimism was related to increased Alcohol Use ($p < .01$). Episodic Stressors and Discipline interacted ($p < .05$) to suggest that Discipline Use buffers the impact of Stressors on alcohol consumption. Among women who were more likely to use discipline in response to student misbehavior, Episodic Stressors were negatively related to Alcohol

Use. Among women who were less likely to use discipline, Episodic Stressors were directly related to Alcohol Use.

Second-Year (Third-Term) Health Behavior Outcomes. Because of transfers, quitting, and other job leaves the sample size was reduced compared to the previous regression analyses (n = 137 for Smoking; n = 134 for Absences Due to Ill Health; n = 135 for Alcohol Use; n = 133 for Obesity; and n = 106 for Tranquilizer Use). Because more time may be required before health behaviors, in comparison to psychological outcomes, change in response to job conditions, it is important to examine the relation of job conditions to the outcomes measured during the second and third years. The Episodic Stressor Scale, however, exerted no direct effects on any of the second-year health-behavior outcomes (since so few direct effects were detected for second- and third-year health-behavior outcomes these results are not presented on separate tables; they are, however, summarized in Table 9). Supervisor Support was the only support variable related to the health behaviors. A logistic regression analysis indicated that Supervisor Support was related to increased risk for having become a smoker by the second year. Since few women smoked or used tranquilizers, the exploratory analyses described next do not examine those factors.

A number of interaction effects were detected. The effect of the Episodic Stressors on later Alcohol Use was buffered by Colleague Support ($p < .05$): under low support, Alcohol Use was directly related to stress; under high support, Alcohol Use was inversely related to stress. The only other interactions involving the support factors occurred in the context of Obesity. Each support variable, General, Colleague, and Supervisor Support, interacted with Episodic Stressors to affect Obesity. The equation containing the interaction of Supervisor Support and Episodic Stressors explained the most variance in Obesity (R^2 = .93, a very large coefficient of determination by social-science standards but not surprising given that the equation controls for initial obesity; the relation of initial to second-year obesity is very strong, r^2 = .87, leaving little residual variance in second-year Obesity for Episodic Stressors and the support factors to explain). The the interaction of the stressor variable and Supervisor Support was disordinal: under low Support, Obesity was directly related to Episodic Stressors; under high Support, Obesity was inversely related to Episodic Stressors (see Figure 4). Such an interaction does not reflect buffering because under low stress and high support one finds higher levels of obesity than under low stress and low support.

Insert Figure 4 about here

Analyses were extended to the coping behaviors and Locus of Control. A two direct effects were detected. Discipline Use was inversely related to Days Absent ($p < .05$) and Selective Ignoring was inversely related to Obesity ($p < .01$).

Third-Year (Fifth-Term) Health Behavior Outcomes. Each of the health-behavior outcomes from the teachers' third year (overall their fifth term as teachers) was regressed on the the following predictors: Episodic Stressors, Supervisor Support, and Colleague Support from the teachers' second year (their third term overall) as well as preemployment General Support. The analyses were limited to women who did not change schools between those second- and third-year periods. Regression equations were adjusted for the same group of

control variables described earlier. With preemployment smoking controlled, no potential risk/protective factor significantly predicted third-year smoking (using both logistic and ordinary least squares regression procedures; n = 166). Only the Episodic Stressor Scale predicted third-year Tranquilizer Use (n = 128); this relation, however, was again extremely modest. Only four teachers, albeit all worked in the most adverse school environments, used tranquilizers. Given the small numbers of women who changed their smoking- and tranquilizer-related behaviors, the report does not explore Smoking and Tranquilizer Use further.

The regression analyses bearing on Days Absent Due to Ill Health (n = 167), Alcohol Use (n = 165), and Obesity (n = 164) revealed only two direct effects for the main risk/protective factors. The Episodic Stressor Scale was predicted elevated Obesity ($p < .05$). Supervisor Support predicted greater Alcohol Use ($p < .05$). No direct effects were found for either Colleague or General Support. No direct effects on Days Absent were detected.

Exploratory analyses of interactions of the support factors with Episodic Stressors were conducted for Days Absent, Alcohol Use, and Obesity. None was significant at the .05 level. The exploratory analyses were extended to examine direct and interactive effects of the coping behaviors and Locus of Control. There were a small number of effects. Direct Action was related to reduced Obesity ($p < .05$). Direct Action interacted with Episodic Stressors ($p < .05$) to suggest a buffering effect on later Alcohol Use. Under low Direct Action, Episodic Stressors were related to increasing alcohol consumption; however, under high Direct Action Stressors exerted almost no effect on Alcohol Use. Locus of Control interacted with Episodic Stressors ($p < .05$) to affect Obesity. The interaction was disordinal: among Externals, Episodic Stressors were directly related to Obesity; among Internals, the slope of Obesity on Episodic Stressors was not as steep but most Internals were more obese than most Externals.

4. Qualitative Research on Teaching Conditions.

The study also included a component in which qualitative data on the teachers' work environments were collected. As part of this component, the teachers were provided an opportunity to describe, in their own words, their work experiences. The purpose of this component was to obtain rich descriptions of the conditions that affect teachers. The teachers' writings were unconstrained by the investigator. The qualitative data analyses (also see Schonfeld, 1995b; Schonfeld & Santiago, 1994) involved two readers independently and iteratively content analyzing consecutive series of 50 to 100 teachers' commentaries. Beginning with a tentative set of categories to classify the themes to emerge from the writings, categories were progressively refined as disagreements between the readers were identified. At the conclusion of the procedure, the readers obtained a satisfactory level of agreement on the thematic categories to emerge from the teachers' writings (kappa = .79). Then all the writings were classified using the final set of thematic categories.

The four most frequent themes to emerge included: (a) interpersonal tensions and lack of support among colleagues/supervisors, (b) being happy with one's job, (c) classroom management problems, and (d) violence and other

security problems. The first two themes concerned social support and the social environment. Teachers described their dismay when supervisors absented themselves from the supervisory role or when the teacher obtained a job in a school characterized by interpersonal tensions among her more senior colleagues. By contrast, when novice teachers reported being happy with their jobs, they often attributed, at least in part, their well-being and success in managing a classroom to good relationships with colleagues and supervisors. To give the reader a flavor for what such teachers report in this area, consider the following fourth grade Catholic school teacher who wrote, "Where I work the teachers are very close. They help each other when help is needed. There is only one [other] teacher who is also teaching for the first time and we are close. We usually talk about school and our own personal life but we don't do any recreation together."

By contrast, an unhappy fourth grade public school teacher wrote that "The principal is at war with every incompetent [assistant principal]. As a result she has turned a deaf ear to all of the teachers' problems. If our problems are brought to her attention, she 'solves' the problem by putting the problem back at the teachers." Another fourth grade public school teacher wrote, "The teachers in the school...are divided into factions and there is a great deal of friction between the groups." Based on the teachers' descriptions of their circumstances at work, key contributors to morale problems are the amount of interpersonal tensions among the faculty and want of supervision.

The teachers' writings bearing on the third theme suggest that problems in classroom management are very distressing. A first grade public school teacher reported, "My students have very short attention spans. They just will not behave. They will be quiet and well behaved for five minutes and then they are off again. In everything we do from reading to going down the stairs it takes us at least ten minutes to quiet down. I try rewarding and praising good behavior but that doesn't mean anything. Sometimes when I'm standing trying very hard to teach a lesson, no one pays attention. I feel frustrated at least twice a day for the entire school week. I sometimes just want to quit...." Another first grade public school teacher wrote, "The children in my class have had behavior problems. Since I began to work, I have become sick with my nerves and have lost a lot of weight. I think that I would be happier if I were to quit my job at this point."

A prekindergarten teacher wrote, "When I was first interviewed for this job my principal said the children were slow. I told him that I could deal with slow but not too many discipline problems. He assured me there were no discipline problems. However, I soon found out that 10 out of the 20 children in my class belong in special education for emotional problems as well as severe learning disabilities. [Administrators] removed the top seven children in my class so they can be in a more positive learning environment and are doing well. The [remaining children include] a child whose mother and two sisters died of AIDS, two self-destructive children, a child who sings whenever he feels like it, a child who likes to roll on the floor, and quiet but resistant others who refuse to work....I feel more like a baby-sitter than a teacher and get little support past the removal of my high functioning students." Another prekindergarten teacher wrote, "Presently a number of children have been transferred to my class. All of them have problem behaviors. Fighting, name calling, swearing, and the inability to literally sit still for short periods of time remain problems for them. Furthermore, it is unclear how much the children who have been in the class before these 'new' children arrived have been influenced by the new arrivals."

A public high school teacher wrote, "Since I am a new teacher, I've been trying to motivate students in class and to [get them to] do their homework. I've found out that most of the students do not do their homework if I don't threaten them with calling their parents. There is also a group of students who always misbehave in class (keep talking all the time) and I cannot keep them from talking." Another public high school teacher wrote, "I work in one of the unhealthiest environments! The school is falling apart, there are not enough teacher resources, very little teacher support, and the students are generally nasty, impolite, and totally non-cooperative. The result is that I feel that my health is suffering tremendously. It was a very big step when I decided to choose the career of teaching. Now, I often feel so confused and depressed. I pray that all high schools are not this bad. I truly long to be an effective teacher."

A public junior high school teacher wrote, "All my life, I dreamed of being a teacher. No one was ever able to steer me away from this. Now I am totally unhappy with my career. My students have no motivation to learn and hate coming to school. Seventy-five percent are major behavior problems. Each day I become more and more frustrated. All I do is preach discipline and respect. I want to teach English literature! I do not want to be a zoo keeper or a warden in a prison anymore! Therefore, I am in the process of changing careers. What a shame—this is the biggest disappointment in my life." Many teachers consistently described children who were verbally, if not physically assaultive. The teachers reported that verbal assaults had psychological costs.

The effect of the assaultive character of the schools in which many teachers work is reflected by this woman who quit her job as an elementary school teacher: "I loved the teaching profession but because of my experience at P.S. xxx I doubt I'll ever teach again. If I do, it will not be for the New York City Board of Education. My present job requires me to work many more hours and much harder but I am a much happier person. The stress caused by teaching a rough class is incredible. I used to come home crying every night."

Next I turn to the fourth theme to emerge from the teachers' writings, that of violence and other security problems. A third grade public school teacher wrote, "The students in my school are physically violent. It seems that fighting is the only solution to their problems. I was previously working in this school as a substitute teacher. It is discouraging and depressing to me to see that even first graders are fighting. There seems to be no love, friendship, or caring going on among the students. The teachers in this school are good and they try very hard to encourage love and friendship. Several of the parents seem concerned and aware of this problem but most of the other parents don't care. Many of these children are bright and talented. But something is not right!"

Another public school teacher wrote, "One of the worst classes I have is a fourth grade Gates class [a class in which youngsters have been held over for lack of progress in reading] in which the children are around age 13. They are very rough children and I have to break up fights regularly. Last week as I was getting the children ready to be dismissed, an object which looked like a gun fell out of a child's pocket. I was in a panic until the boy picked it up turned it over and it was red and purple. In this class I would not have been surprised if it were a real gun. Weapons are constantly being taken away from children in this class. Also lately there has been a big security problem in

the building. Several times intruders have entered the building. Last week children reported being threatened by a man with a knife and a gun. Since I have been teaching my health has declined. I am constantly sick with whatever the kids have and I have developed an ulcer-like condition. Last year I was perfectly healthy. I have decided that since I have the grades, in two years I will start law school."

A public high school teacher commented, "Although all jobs have their share of stress, in my mind the most stressful aspect of being a teacher is the sometimes uncontrollable violence that occurs in many urban schools. Knowing that students are walking around with weapons and/or drugs provides a teacher with great ambivalence as any student can explode at any given moment. As an educator, I would like to see more done to deter such happenings."

A public junior high school teacher wrote about the end of her first year: "I was attacked by a student last June--a 16-year-old seventh grader--and very disgusted that the principal did not have her apologize to me. Also, I was amazed that I had enough self-discipline not to slug this student back, as she was pummeling me. I was afraid to use my full strength to pull her off me--I didn't want to touch her for fear of losing my license."

Even prekindergarten teachers are not insulated from violence, "My supervisor was not helpful. She was daily informed of an insubordinate assistant teacher in my classroom. I was attacked by this person who is almost 100 pounds more than me and ten inches taller than I am. The school is not standing behind me even though they told me this person is being put on probation due to insubordinate behavior in the classroom."

This fourth grade teacher reported her reasons for leaving teaching after her first year, "Since the last time I completed this questionnaire I have given up the teaching profession because I was physically assaulted by one of my students. If I was in a better neighborhood I would have (probably) loved my job but as it stands now, I doubt I will ever teach again."

Theoretical Relevance of Qualitative Research. In the history of science, uncontrolled qualitative observational research has played an important role in the context of discovery (Reichenbach, 1951) and theory development although qualitative observational research contributes little to hypothesis testing (Schonfeld, 1995b). The qualitative findings make some contact with Dohrenwend's (1979) theory of stress. In reviewing research on individuals exposed to extreme situations, Dohrenwend (1979) found that stressful life events can engender psychopathology in individuals who had previously been free of psychopathology. The research indicates that undesirable life events are particularly toxic when such events (a) are unanticipated, unscheduled, and outside the individual's control, (b) lead to physical exhaustion, and (c) reduce social support. The elements of Dohrenwend's (1979) theory of stress are to some extent outlined in the above described qualitative data. Single adverse workplace events often do not simultaneously capture all three components of Dohrenwend's (1979) "pathogenic triad;" the problems teachers in the worst run schools face, however, come as an ensemble that together suggest the three components.

After four or more years studying in an institution of higher learning, prospective educators are unlikely to anticipate the violence and endemically discourteous and disrespectful behaviors that are frequently everyday conditions in our schools. The unrealistic expectations many new workers bring

to their jobs contribute to worker demoralization later on (Louis, 1980). By contrast, ordinary expectations regarding workplace safety and respect are not met when individuals get teaching positions in the most chaotic and threatening schools. This suggests that demoralization in teachers working in the most chaotic schools is quite severe, a suggestion borne out in the quantitative findings.

5. Formation of Work-Related Support.

Analyses were undertaken to identify factors that contribute to the formation of social support at work, i.e., Colleague and Supervisor Support. Regression analyses ($n \approx 242$) were limited to teachers who worked full-time in the fall immediately following college graduation (Time 1) regardless of their later work experience. The sample was so limited in order to best capture the immediate role transition from college student to employed professional. The analyses revealed that the single most important preemployment factor to predict the formation of Colleague Support was the teacher's preexisting level of support from friends and relatives (beta = .26, $p < .001$), controlling for preemployment symptoms ($p < .16$). No other factor, including Assertiveness and Self-Disclosure, social skills measured during the preemployment period, and prior acquaintance with teachers in the fall-term school was related to support formation.

Next, fall-term Supervisor Support was regressed on the same set of predictors. Only Assertiveness (beta = .15, $p < .05$ controlling for preemployment PP Symptoms; beta = .13, $p < .06$ controlling for preemployment CES-D) predicted Supervisor Support. No other factor, including prior acquaintance with supervisors, was related to this type of support.

The findings suggest that preexisting social skills, assertiveness and other unspecified skills that help elicit support from friends and relatives outside of work, also elicit support from supervisors and colleagues. The effect sizes, however, were not so large ($.04 \leq R^2 \leq .11$) as to preclude school organizations from taking steps to enhance support from these sources.

DISCUSSION

Table 9 summarizes the results of all the regression analyses that pertain to the psychological and health-behavioral outcomes. The most consistent result to emerge from the analyses was the link between working conditions and psychological outcomes. More specifically, adverse working conditions, as reflected by the Episodic Stressor Scale, consistently predicted increases in Depressive Symptoms and decreases in Job Satisfaction from preemployment baseline levels (Expected Job Satisfaction was measured during the preemployment period). To a slightly lesser extent, adverse working conditions predicted poorer Self-Esteem, reduced Motivation to Teach, and increased PP Symptoms.

Insert Table 9 about here

The teacher-nonteacher comparisons detailed in Table 2 highlight the importance for teachers in obtaining jobs in safe, well run schools. The teachers who obtained jobs in the best run schools compared favorably in terms of Depressive Symptoms and Job Satisfaction with the teachers who worked in the most adverse school environments as well as with the nonteacher comparison women. Teachers who worked in the best run schools compared favorably to their

own preemployment baseline levels of Depressive Symptoms while the teachers who worked in the most adverse school environments compared unfavorably to preemployment baselines (Schonfeld 1995a, in press a).

Outcomes like Depressive Symptoms respond to acute stressors. Because more time may be required before evolving health behaviors change in response to job conditions, it was not surprising to find that the effects job conditions exert on health behavioral, as compared to psychological, outcomes were fewer. Evidence of the greater stability of the health behaviors can be seen in comparing Tables 5 and 8. The standardized regression coefficients of the preemployment baseline measures tended to be higher in predicting term-2 health-behavior outcomes like Smoking, Alcohol Use, and Obesity than in predicting term-2 psychological outcomes.

Episodic Stressors exerted, at most, weak effects on Tranquilizer Use. Somewhat stronger effects on Obesity were detected by the third year. Longer-term replication studies are required, however, to better examine the link between health behaviors and working conditions in teachers.

The **support factors** were also more closely related to psychological than health-behavior outcomes. General Support from Friends and Relatives predicted reduced Depressive and PP Symptoms during the first year and enhanced Self-Esteem during the first, second, and third years.

The effects of the two work-support measures, Colleague and Supervisor Support, were consistent to the extent that they enhanced psychological outcomes, although the psychological outcomes varied somewhat by time period. Supervisor Support tended to be a slightly better predictor. During the first and second years Supervisor Support predicted better Self-Esteem, Job Satisfaction, and Motivation although two of the second-year outcomes were marginally significant (the effect sizes mirrored the first-year effect sizes) given the loss of power due to teacher turnover. Supervisor Support also predicted third-year Job Satisfaction. Colleague Support predicted Job Satisfaction during year one and Depressive and PP Symptoms during year three. The interplay of the effects of Colleague and Supervisor support suggests that as the individuals advance through different career stages, the roles played by various sources of support change.

The results concerning the formation of social support at work suggest that Colleague and Supervisor Support do not materialize independently of the social skills the new teacher brings to the workplace. Nonetheless, the results indicate that preemployment characteristics of teachers explain only a small portion of the variance in support. The climate and culture of the school make a considerable contribution to Colleague and Supervisor Support (cf. Sarason, 1971).

Compared to their effects on the psychological outcomes, the effects of the support measures on the health behavioral outcomes were fewer. Colleague Support was related to number of cigarettes smoked during the first year. The effect occurred among women who had already been smokers by the preemployment period. Supervisor Support predicted having taken fewer sick days during the first year. Supervisor Support also predicted small but statistically significant increases in smoking during the second year and Alcohol Use during the third year. Because the direct effects of the support variables on the health behavioral outcomes are few and contradictory, they may reflect Type I errors.

The effects of the coping variables and Locus of Control were more sparse; however, evidence of consistency appeared in four instances. First, Discipline Use was linked to reduced absences during both the first and second years. During the third year, it came as no surprise that Discipline Use was related to decreased morale as reflected in the Job Satisfaction and Motivation Scales. Second, Selective Ignoring was linked to increases in both Depressive and PP Symptoms during the third year. When it interacted with Episodic Stressors to affect Self-Esteem, the interaction was disordinal and not a buffering type. Other research on coping suggests that Selective Ignoring is not an efficacious coping behavior in the context of work (Menaghan & Merves, 1983; Pearlin & Schooler, 1978). Ignoring in teachers, given the dangers the qualitative data indicate exist in some school environments, can be harmful. Why first-year Selective Ignoring predicts decreased second-year Obesity is not clear and stands out as an anomalous finding that does not cohere with the other findings.

The third consistency concerns Positive Comparisons. Menaghan and Merves (1984) provided some evidence to suggest ameloriating effects for similar cognitive coping behaviors. Although Postive Comparisons did not exert the same effects through the three time periods (increases in Self-Esteem at years one and two; decreases in Depressive Symptoms at year two), the effects were related. There is evidence that scales measuring depressive symptoms and self-esteem reflect underlying nonspecific psychological distress (Dohrenwend et al., 1980).

The fourth consistency pertains to the "modest" buffering effects of an internal locus of control. One buffering effect was found at year two and two were found at year three. The effects were confined to the symptom measures. The findings are consistent with a body research which suggests that compared to externality, internality holds greater benefit for psychological outcomes (Kasl, 1989; Kyriacou & Sutcliffe, 1979b; McIntyre, 1984; Parkes, 1991; Pearlin & Schooler, 1978). With some exceptions (Parkes, 1991), the great majority of research on the effects of control beliefs has been cross-sectional. It should be pointed out that the control beliefs that were measured in this study were obtained during the preemployment period (earlier than any of the coping behaviors) which if anything, should work against finding effects during years two and three. Another anomalous finding, here one that does not dovetail with the three interactions just described, is the disordinal interaction of Locus of Control and Episodic Stressors that affects year-three Obesity. A conservative conclusion to draw is that control beliefs hold promise as modifiers of occupational stressors but future research on longitudinal samples would further elucidate such a view.

As indicated earlier in this report, it is the pattern of findings that provides the weight of evidence for effects. Isolated direct and interactive effects (e.g., the effects associated with Advice Seeking) linked to a coping behavior are unlikely to reflect a true effect. The effects bearing on the Direct-Action coping behavior and described in Table 9 are too fragmentary to show a trend. Although there is evidence that Direct Action may mitigate the impact of stressors on Obesity and Alcohol, if only during the teachers' third year, the effects do not square with the disordinal interaction at year two affecting Job Satisfaction. The conservative response to these findings is to suspend judgment and suspect Type I errors. With some exceptions (Schonfeld, 1990b), prior research (e.g., Pearlin & Schooler, 1978; Menaghan & Merves, 1984) suggests that Direct Action does not exert psychologically beneficial effects in the context of the workplace.

Limitations

A limitation of the study is related to the study's strength. Although subjects were recruited directly from the main candidate stream that supplies new teachers to the schools of a major urban center, the data do not warrant generalization to all teachers. Replication research with male and veteran teachers would be helpful in assessing the generalizability of the findings. It would also be of interest to examine longitudinally the relation of job conditions to psychological distress and work-related morale in other helping professionals who have considerable, and potentially stressful, client contact (e.g., social workers and nurses). Research on student nurses demonstrates clear effects of working conditions on mental health (Parkes, 1982).

The present study's reliance on self-report instruments is another limitation; the regression analyses, however, controlled for preemployment baselines of the outcome measures, reducing the likelihood that the results simply reflected artifacts of preexisting response tendencies. The measures of working conditions, moreover, were constructed to minimize confounding with preemployment mental health and break tendencies toward response set. The measures manifest greater evidence of validity than objective data concerning the stressfulness of school environments, i.e., the New York City Board of Education's reports, which were discussed earlier, on assaults and other crimes against teachers. With regard to the coping scales, there is evidence that compared to measures derived from the observations of others (e.g., supervisors), self-report instruments are better suited for assessing an incumbent's occupational coping behavior (Latack, 1986).

A third limitation is the study's focus on acute distress and demoralization. More extensive longitudinal research is required to assess the effects of prolonged exposures to adverse working conditions. The present study, however, suggests such effects. The average third-year Depressive Symptom (CES-D) scores of women exposed to the most adverse work environments were very high, exceeding the CES-D's "clinical cutoff" of 16, a value at or above which marks an increased risk for affective illness (Radloff, 1977; Weissman et al., 1977). It should, however, be borne in mind that in the absence of clinical depression, elevated scores on scales like the CES-D index nonspecific psychological distress (Dohrenwend et al., 1980), which itself constitutes a mental health problem (Link & Dohrenwend, 1980). The data clearly indicate that a good many teachers were experiencing extreme psychological distress and that should be a cause for public concern.

A fourth limitation concerns the item composition of some of the coping scales. The Positive Comparisons Scale consisted of two items. Cohen (1982) showed how unreliability decreases power and contributes to Type II errors. A stronger test of the effects of Positive Comparisons could have been made had a more reliable, multi-item measure been employed. It is hoped that future investigators will conduct stronger tests of the effects of this cognitive coping behavior. It should also be borne in mind that high reliability is not always to be expected in every coping measure. The Advice Seeking Scale consists of a series of items that ascertain the teacher's inclination, in response to work-related difficulties, to seek advice from a relative, friend, paraprofessional, guidance counselor or school psychologist, supervisor, doctor or psychologist, and another teacher. Although the scale consists of seven items, its relatively low reliability (alpha = .70 at Time 1) reflects the fact that having some advisors obviates the need for others (cf. Parkes, 1994).

A fifth limitation is the composition of the nonteacher sample. Too few women obtained and persisted in full-time jobs that were comparable in social status to that of the teachers to make the extensive teacher-nonteacher comparisons. The data, however, suggest that the comparison jobs were about as stressful as the jobs of teachers working in the most chaotic schools. A plurality of control women obtained jobs in social work. It would be important for other investigators to study longitudinally human service occupations and helping professionals because those occupations provide another view of job factors that can be considered stressors (e.g., angry client contact).

Alternative Explanations

One explanation suggests that self-selection or selection by administrative gatekeepers accounts for the relation of working conditions to psychological functioning. In a different context, Kornhauser (1965) observed that "the impact of industrial jobs may be due to variations in personal make-up among men who go into different kinds of work" (p. 15) as well as to differences on the shop floor. A plausible argument can be made that classroom difficulties could sometimes result from preexisting depression in a teacher (Schonfeld & Ruan, 1991). In the present study, the findings are generally incompatible with selection-based and reverse-causal explanations. Differences in preemployment depressive symptoms do not account for much variation on the work-environment scales. In fact, the work-environment measures were considerably more closely related to future than to preexposure mental health, Satisfaction, and Motivation (Schonfeld, 1995a).

Another explanation holds that the relation of the work-environment measures to the psychological outcomes is artifactual, reflecting a common relation of the work environment and the outcomes to NA (Brief et al., 1988). The findings, however, are incompatible with the NA hypothesis. In the regression analyses, which controlled for PP Symptoms, the work-environment was nonetheless related to future outcomes. For example, when the later Depressive Symptoms were regressed on a temporally earlier Episodic Stressor Scale, both preemployment PP Symptoms and preemployment Depressive Symptoms, two factors that together account for considerable variance in trait distress (Schonfeld, in press a), were controlled without reducing to nonsignificance the effect of the work-environment scale.

The Effects of Working Conditions

The results support the view that the assaultive nature of some school environments adversely affects teachers, particularly in regard to Depressive Symptoms and Job Satisfaction. Kasl (1983) emphasized the stressfulness of unanticipated events. The qualitative data (also see Schonfeld & Santiago, 1994; Schonfeld, 1995a) underline the shock of encounters with aggressive students. Few academically trained individuals entering a profession after such training anticipate violence and disrespect as everyday working conditions. In the case of the women teachers entering the most chaotic schools, "realistic" expectations regarding workplace safety and respect are unmet. The qualitative data on teachers who work in the most poorly run schools underline the applicability to teaching of Dohrenwend's (1979) triadic theory of stress (see Schonfeld, 1995b). Threatening events that many teachers encounter are (a) often unanticipated or outside their control as well as (b) physically draining, and (c) that interpersonal relationships among the faculty and administrators in the most poorly run schools are frequently unsupportive and often freighted with tension and hostility.

What is toxic in the work environments of many teachers can be identified from the items that make up the Episodic Stressor Scale and from the qualitative data. Students are assaultive in largely two ways. They can be physically assaultive with each other or with teachers, or the specter of violence can so pervade a school's atmosphere that teachers are affected even if they are not the immediate victim of violence. The other aspect of student assaultiveness is more prevalent. This aspect concerns excessive verbally hostile and depreciatory behavior aimed at the teacher's person and/or at disrupting instruction (see Schonfeld, 1995b). A third dimension of the worst school environments is administrative insensitivity and/or incompetence. Because in the worst schools, verbally and physically assaultive behavior from students (and even outsiders) and administrative ineptitude come as a package, teachers often find themselves trapped in a work environment in which there is little opportunity for ameliorative action.

The findings presented in this Final Performance Report are consistent with two important studies (Friedman, 1991; Mäkinen & Kinnunen, 1986). Friedman (1991), in a study of Israeli teachers, found that, compared to personal factors, school-environment factors played a larger role in burnout. Schonfeld (in press b) adduced evidence for the view that burnout is better conceptualized as depressive symptoms that develop in response to adverse working conditions.

Mäkinen and Kinnunen (1986), in a longitudinal study of Finnish teachers, found that student motivation and conduct were related to concurrent and lagged depressive and anxiety symptoms. Mäkinen (personal communication, 1994) found that NA did not explain how teachers describe student behavior. NA also failed to explain the relation of student motivation and conduct to concurrent and later symptoms.

Social and Psychological Resources

Social support showed evidence of affecting psychological outcomes. The influence of General Support showed some specificity. Its influence was mainly limited to general psychological outcomes like Self-Esteem and Depressive Symptoms. Supervisor Support, by contrast, showed specific effects on the work-related psychological, or morale, outcome Job Satisfaction. Colleague Support straddled the two other types of support. It affected Job Satisfaction in the first year and, Depressive and PP Symptoms as well as Self-Esteem in the third. The pattern of effects suggests that even at this early stage of the women's careers, the functions of supporters, particularly collegial supporters, change between the first and the third years of teachers' careers, points in time in which the women were evolving out of the role of novice teacher. The most supportive colleagues are likely to increasingly resemble friends found outside the work role.

The findings regarding coping and Locus of Control suggest that the effects of those factors are more modest and less consistent than social support. Pearlin and Schooler (1978) advanced the view that compared to the context of roles like that of parent and spouse, work roles, by virtue of the more impersonal organization of the workplace, provide an inhospitable terrain for coping behaviors to influence psychological outcomes. Schools, by contrast, are not impersonal places. Teachers have personal contact with children every day. Schonfeld (1990b) hypothesized that the more personal character of the teaching role, in comparison to other occupational roles, provides a better

context for work-related coping behaviors to reduce psychological distress; his supporting evidence, however, was cross-sectional. Although the longitudinal evidence from the present study suggests that the influence of personal resources is largely overpowered by job conditions, the evidence indicates that some coping behaviors (e.g., Positive Comparisons) or Locus of Control exert modest ameliorative effects, although the effects are not as extensive as that of having a supportive supervisor.

The problems to which teachers are exposed are preventable. In considering means for reducing teachers' exposures to the adverse conditions described earlier, we may consider two main avenues of action. Broadly they are the avenues of environmental protection and personal coping or responsibility. Jeffery (1989) suggested that it possible to define water sanitation as a problem of personal rather than public responsibility. The personal orientation would require that all citizens boil drinking water at sufficiently high temperatures for a long enough period to destroy the cholera vibrio and other micro-organisms. Psychologists would develop strategies to best reinforce low-risk water treatment behavior. The alternative environmental protection avenue to a healthy water supply provides an obviously safer route to protecting the public's health. From the standpoint of the teacher, the superior route to a better school environment begins with environmental protection and, consequently, the school organization.

Conditions affecting the well-being of teachers often transcend the classroom and characterize whole schools (Schonfeld, 1992c). These factors are generally impervious to personal coping behaviors. Schonfeld (1992c) gave as an example the case of a high school teacher who was inadvertently shot by a student who, in a surprise attack, was taking aim at another student. No amount of personal coping could have protected the teacher. If students engage in violent or chronically disruptive behavior, those behaviors echo throughout the school and touch most of the staff. Such behaviors are normatively stressful to teachers. The findings bearing on the coping behaviors suggest that the solution to the problem of dangerous and chaotic urban schools is not in training each teacher to cope more effectively or in changing teachers' personalities, as if that were possible. The solution lies in changing the organization of the school. In contrast to the coping-related findings, the quality of supervision, a school factor, affected Job Satisfaction and Motivation To Be a Teacher. It is very important that teachers be protected from verbally and physically assaultive youngsters. A reduction of student violence and disruption would prevent the dispiriting effects of many urban schools on teachers. Moreover, such preventive organizational efforts would go far to make the lives of children safer, healthier, and more connected to learning.

How to bring about workplace change is an important issue. Deutsch (1988) advanced the view that worker participation should be a required element in stress reduction. Friedman's (1991) research underlined the importance of the organizational factors in teacher distress. Future prevention trials based on these ideas are warranted. Prevention trials involving large public institutions like schools need not be viewed as a visionary enterprise, too impractical to undertake. Such trials can capitalize on "natural" differences already existing in schools (cf. Rutter, Maughan, Mortimore, & Ouston, 1979).

CONCLUSIONS

The most persistent findings pertain to the importance of the school environment to the psychological well-being of women teachers. Regression analyses indicate that as school environments become more dangerous and more chaotic, elevations in depressive symptoms and sharp decreases in job satisfaction among other adverse outcomes occur, controlling for a host of potential confounding factors (e.g., negative affectivity, nonwork stress, preemployment levels of the outcome variables). The importance of the work environment is further underscored in other analyses that indicate that teachers who obtained jobs in the best run schools show levels of psychological well-being that compared favorably to their own preemployment baselines (Schonfeld, 1995a, in press a), to their colleagues in the worst run school, and to a sample of demographically matched women who obtained full-time jobs outside of teaching.

The findings also demonstrate the importance of social support for the psychological well-being of the working professionals. Support from three sources, friends and relatives outside of work, work colleagues, and work supervisors, were important for the well-being of teachers, controlling for potential confounders. The combined influence of support led to reduced depressive and psychophysiological symptoms, enhanced self-esteem, increased job satisfaction.

The effects of coping and Locus of Control were considerably less extensive than the effects of social support but there was evidence of a small number of reliable effects. For example, the coping tendency of the individual to make positive comparisons with peers exerts some beneficial effects on later self-esteem. By the same token, there is some evidence that the coping tendency of ignoring bad aspects of the work environment has negative effects on the individual. An internal orientation on the personality dimension Locus of Control (the belief that the individual, rather than forces outside the individual, controls the sources of reinforcement) shows evidence of modestly mitigating <u>but not eliminating</u> the impact of adverse job conditions on psychophysiological symptoms in the second and third years the teachers are on the job.

The risk and protective factors identified in this report exert the bulk of their effects on psychological outcomes (e.g., depressive and psychophysiological symptoms, self-esteem, job satisfaction, and motivation to continue in the profession). The factors exert no effects or statistically reliable but weak effects on health behaviors (e.g., tranquilizer use, obesity).

The author of this report recommends that most important ways to improve the psychological health of teachers is for educational organizations to take steps to reduce powerfully disruptive and physically assaultive behavior that some students direct toward teachers. In many instances, the addition of solidly professional supervision and the promotion of collegial relations among faculty members would benefit morale.

References

Aldwin, C.M., & Revenson, T.A. (1987). Does coping help? A reexamination of the relation between coping and mental health. Journal of Personality and Social Psychology, 53, 337-348.

Beehr, T.A. (1994). Meta-analysis of occupational stress and social support. Annual meeting of the Midwestern Psychological Association, Chicago.

Beehr, T.A. (1995). Psychological stress in the workplace. Routledge: London.

Belcastro, P.A., & Hays, L.C. (1984). Ergo...ergophobia...ergo...burnout? Professional Psychology: Research and Practice, 15, 260-270.

Bhagat, R.S., McQuaid, S.J., Lindholm, H., & Segovis, J. (1985). Total life stress: A multimethod validation of the construct and its effect on organizationally valued outcomes and withdrawal behaviors. Journal of Applied Psychology, 70, 202-214.

Blase, J.J. (1986). A qualitative analysis of sources of teacher stress: Consequences for performance. American Educational Research Journal, 23, 13-40.

Bollen, K., & Lennox, R. (1991). Conventional wisdom on measurement: A structural equation perspective. Psychological Bulletin, 110, 305-314.

Brenner, S.-O., Sorbom, D., & Wallius, E. (1985). The stress chain: A longitudinal confirmatory study of teacher stress, coping, and social support. Journal of Occupational Psychology, 58, 1-13.

Brett, J.F., Brief, A.P., Burke, M.J., George, J.M., & Webster, J. (1990). Negative affectivity and the reporting of stressful life events. Health Psychology, 9, 57-68.

Brief, A.P., & Atieh, J.M. (1987). Studying job stress: Are we making mountains out of molehills? Journal of Occupational Behaviour, 8, 115=126.

Brief, A.P., Burke, M.J., George, J.M., Robinson, B.S., & Webster, J. (1988). Should negative affectivity remain an unmeasured variable in the study of job stress? Journal of Applied Psychology, 73, 193-198.

Buunk, B.P., Janssen, P.P.J., & Vanyperen, N.W. (1989). Stress and afiliation reconsidered: The effects of social suppport in stressful and non-stressful work units. Social Behaviour, 4, 155-171.

Chen, P.Y., & Spector, P.E. (1991). Negative affectivity as the underlying cause of correlations between stressors and strains. Journal of Applied Psychology, 76, 398-407.

Cobb, S. (1976) Social support as a moderator of life stress. Psychosomatic Medicine, 38, 300-313.

Cohen, H.L. (1973). Behavior modification and socially deviant youth. In C.E. Thoresen (Ed.), Behvarior modification in education: Seventy-second yearbook of the National Society for the Study of Education (Part 1). Chicago: University of Chicago Press>

Cohen, J., & Cohen, P. (1983). Applied multiple regression/correlation analysis for the behavioral sciences (2nd ed.). Hillsdale, NJ: Erlbaum.

Cohen, P. (1982). To be or not to be: Control and balancing of Type I and Type II errors. Evaluation and Program Planning, 5, 247-253.

Cohen, S., Mermelstein, R. Kamarck, T., & Hoberman, H. (1983). Measuring the functional components of social support. In I.G. Sarason & B.R. Sarason (Eds.), Social support: Theory, research and applications (pp. 73-94). The Hague, Netherlands: Martines Niijhoff.

Cohen, S., & Syme, S.L. (1985). Issues in the study and application of social support. In S. Cohen & S.L. Syme (Eds.), Social support and Health (pp. 3-22). Orlando, FL: Academic Press.

Cohen, S., & Wills, T.A. (1985). Stress, social support, and the buffering

hypothesis. Psychological Bulletin, 98, 310-357.
Conway, T.L., Vickers, R.R., Ward, H.W., & Rahe, R.H. (1981). Occupational stress and variation in cigarette, coffee, and alcohol consumption. Journal of Health and Social Behavior, 22, 155-165.
Cooper, C.L., & Marshall, J. (1976). Occupational sources of stress: A review of the literature relating to coronary heart disease and mental ill health. Journal of Occupational Psychology, 46, 11-28.
Crandall, C.S. (1992). Psychophysical scaling of stressful life events. Psychological Science, 2, 256-259.
Cronkite, R.C., & Moos, R.H. (1984). The role of predisposing and moderating factors in the stress-illness relationship. Journal of Health and Social Behavior, 25, 372-393.
DeFrank, R.S. & Stroup, C.A. (1989). Teacher stress and health: Examination of a model. Journal of Psychosomatic Research, 33, 99-109.
Depue, R.A., & Monroe, S.M. (1986). Conceptualization and measurement of human disorder in life stress research: The problem of chronic disturbance. Psychological Bulletin, 99, 36-51.
Deutsch, C. (1984). Self-reported sources of stress among psychotherapists. Professional Psychology Research and Practice, 15, 833-845.
Deutsch, S. (1988). Workplace democracy and worker health: Strategies for implementation. International Journal of Health Services, 18, 647-658.
Dillon, S. (1994, July 7). Report finds more violence in the schools: Board says principals covered up incidents. New York Times, pp. B1, B7.
Dohrenwend, B.P. (1979). Stressful life events and psychopathology: Some issues of theory and method. In J.E. Barrett, E.M. Rose, & G.L. Klerman (Eds.), Stress and mental disorder (pp. 1-15). New York: Raven.
Dohrenwend, B.P., Shrout, P.E., Egri, G., & Mendelsohn, F.S. (1980). Nonspecific psychological distress and other dimensions of psychopathology: Measures for use in the general population. Archives of General Psychiatry, 37, 1229-1236.
Dohrenwend, B.S., Krasnoff, L., Askenasy, A.R., & Dohrenwend, B.P. (1982). The Psychiatric Epidemiology Research Interview Life Events Scale. In L. Goldberger & S. Breznitz (Eds.), Handbook of stress: Theoretical and clinical aspects (pp. 332-363). NY: Free Press.
Doncevic, S., Theorell, T., & Scalia-Tomba, G. (1988). The psychosocial work environment of district nurses in Sweden. Special Issue: Stress in the public services. Work and Stress, 2, 341-351.
Dunham, J. (1984). Stress in teaching. Beckenham, Kent, UK: Croom Helm.
Dworkin, A.G. (1988). Teacher burnout in the public schools. Albany, NY: State University of New York Press.
Eaton, W.W., Anthony, J.C., Mandel, W., & Garrison, R. (1990). Occupations and the prevalence of major depressive disorder. Journal of Ocupational Medicine, 32, 1079-1087.
Epstein, S. (1979). The stability of behavior: I. On predicting most of the people most of the time. Journal of Personality and Social Psychology, 37, 1097-1126.
Farber, B.A. (1983). Psychotherapists' perceptions of stressful patient behavior. Professional Psychology Research and Practice, 14, 697-705.
Farber, B. (1984). Stress and burnout in suburban teachers. Journal of Educational Research, 77, 325-331.
Felton, B.J., & Revenson, T.A. (1984). Coping with chronic illness: A study of illness controllability and the influence of coping strategies on psychosocial adjustment. Journal of Consulting and Clinical Psychology, 52,

343-353.
Fimian, M.J., & Fawtenau, P.S. (1990). The validity and reliability of the Teacher Stress Inventory: A re-analysis of aggregate data. Journal of Organizational Behavior, 11, 151-157.
Fimian, M.J. & Santoro, T.M. (1983). Sources and manifestations of occupational stress as reported by full-time special education teachers. Exceptional Children, 49, 540-543.
Finlay-Jones, R. (1986). Factors in the teaching environment associated with severe psychological distress among school teachers. Australian and New Zealand Journal of Psychiatry, 20, 304-313.
Firth, H., & Britton, P. (1989). "Burnout," absence and turnover among British nursing staff. Journal of Occupational Psychology, 62, 55-59.
Frese, M. (1985). Stress at work and psychosomatic complaints: A causal interpretation. Journal of Applied Psychology, 70, 314-328.
Frese, M., & Zapf, D. (1988). Methodological issues in the study of work stress: Objective vs subjective measurement of work stress and the question of longitudinal studies. In C.L. Cooper & R. Payne (eds.), Causes, coping and consequences of stress at work (pp. 375-411). Chichester: Wiley.
Friedman, I.A. (1991). High- and low-burnout schools: School culture aspects of teacher burnout. Journal of Educational Research, 84, 325-333.
Galloway, D., Panckhurst, F., Boswell, K., Boswell, C., & Green, K. (1984). Mental health, absences from work, stress, and satisfaction in a sample of New Zealand primary school teachers. Australian and New Zealand Journal of Psychiatry, 18, 359-363.
Greenberg, E.S., & Grunberg, L. (1995). Work alienation and problem alcohol behavior. Journal of Health and Social Behavior, 36, 83-102.
Greenglass, E.R., & Burke, R.J. (1988). Work and family precursors of burnout in teachers: Sex differences. Sex Roles, 18, 215-229.
Hall, J.K., & Spector, P.E. (1991). Relationships of work stress measures for employees with the same job. Work and Stress, 5, 29-35.
Halpin, G., Harris, K., & Halpin, G. (1985). Teacher stress as related to locus of control, sex, and age. Journal of experimental Education, 53, 136-140.
Hammen, C., & de Mayo, R. (1982). Cognitive correlates of teacher stress and depressive symptoms: Implications for attributional models of depression. Journal of Abnormal Psychology, 91, 96-101.
Harris, L., Kagay, M., & Leichenko, S. (1986). The Metropolitan Life Survey of former teachers in America. NY: Metropolitan Life.
Holahan, C.H., & Moos, R.H. (1981). Social support and psychological distress: A longitudinal analysis. Journal of Abnormal Psychology, 90, 365-370.
Hollingshead, A.B. (1974). Four-factor index of social status. Working paper. New Haven: Yale University.
House, J.S. (1980). Occupational stress and the mental and physical health of factory workers. Ann Arbor: Survey Research Center Institute for Social Research, University of Michigan.
House, J.S., & Kahn, R.L. (1985). Measures and concepts of social support. In In S. Cohen & S.L. Syme (Eds.), Social support and health. Orlando, FL: Academic Press.
House, J.S., Landis, K.R., & Umberson, D. (1988). Social relationships and health. Science, 241, 540-545.
Jaccard, J., Turrisi, R., & Wan, C.K. (1990). Interaction effects in multiple regression. Newbury Park, CA: Sage.
Jayaratne, S., Chess, W.A., & Kunkel, D.A. (1986). Burnout: Its impact on

child welfare workers and their spouses. Social Work, 31, 53-59.
Jeffery, R.W. (1989). Risk behaviors and health: Contrasting individual and population perspectives. American Psychologist, 44, 1194-1202.
Jex, S.M., & Spector, P.E. (in press). The impact of negative affectivity on stressor-strain relations: A replication and extension. Work and Stress.
Johnson, A.B., Gold, V., & Vickers, L.L. (1982). Stress and teachers of the learning disabled, behavior disordered, and educable mentally retarded. Psychology in the Schools, 19, 552-557.
Jorm, A.F., Duncan-Jones, P., & Scott, R. (1989). An analysis of the re-test artefact in longitudinal studies of psychiatric symptoms and personality. Psychological Medicine, 19, 487-493.
Jourard, S.M. (1971). Self-disclosure: An experimental analysis of the transparent self. New York: Wiley.
Kaplan, G.A., Salonen, JT, Cohen, R.D., Brand, R.J., Syme, L., & Puska, P. (1988). Social conenctions and mortality from all causes and from cardiovascular disease: Prospective evidence from Eastern Finland. American Journal of Epidemiology, 128, 370-380.
Kasl, S.V. (1978). Epidemiological contributions to the study of work stress. In C.L. Cooper & R. Payne (Eds.), Stress at work (pp. 3-48). NY: Wiley.
Kasl, S.V. (1983). Pursuing the link between stress life experiences and disease: A time for reappraisal. In C.L. Cooper (Ed.), Stress Research (pp. 79-102). NY: Wiley.
Kasl, S.V. (1987). Methodologies in stress and health: Past difficulties, present dilemmas, future directions. In S.V. Kasl and C.L. Cooper (Eds.), Stress and health: Issues in research methodology (pp. 307-318). Chichester, UK: Wiley.
Kasl, S.V. (1989). An epidemiological perspective on the role of control in health. In S.L. Sauter, J.J. Hurrell, and C.L. Cooper (Eds.), Job control and worker health (pp. 162-189). Chichester, UK: Wiley.
Kasl, S.V., & Cobb, S. (1982). Variability of stress effects among men experiencing job loss. In L. Goldberger & S. Breznitz (Eds.), Handbook of stress: Theoretical and clinical aspects (pp. 445-465). NY: Free Press.
Kasl, S.V., & Wells, J.A. (1985). Social support and health in the middle years: Work and the family. In S. Cohen & S.L. Syme (Eds.), Social support and Health (pp. 175-198). Orlando, FL: Academic Press.
Kaufmann, G.M., & Beehr, T.A. (1986). Interactions between job stressors and social support: Some counterintuitive results. Journal of Applied Psychology, 71, 522-526.
Kelloway, E.K., & Barling, J. (1991). Job characteristics, role stress and mental health. Journal of Occupational Psychology, 64, 291-304.
Kessler, R.C., & McLeod, J.D. (1985). Social support and mental health in community samples. In S. Cohen & S.L. Syme (Eds.), Social support and Health. Orlando, FL: Academic Press.
Kohn, M.L., & Schooler, C. (1982). Job conditions and personality: A longitudinal assessment of of their reciprocal effects. American Journal of Sociology, 87, 1257-1286.
Kornhauser, A. (1965). Mental health of the industrial worker. New York: Wiley.
Korshavn, S. (1991, April) Occupational stressors, organizational characteristics, teacher self-perceptions and teacher retention. American Educational Research Association, Chicago.
Kyriacuou, C., & Sutcliffe, J. (1978). Teacher stress: Prevalence, sources, and symptoms. British Journal of Educational Psychology, 48, 159-167.

Kyriacou, C., & Sutcliffe, J. (1979a). Teacher stress and satisfaction. Educational Research, 21, 89-96.
Kyriacou, C., & Sutcliffe, J. (1979b). A note on teacher stress and locus of control. Journal of Occupational Psychology, 52, 227-228.
Kyriacou, C., & Pratt, J. (1985). Teacher stress and psychoneurotic symptoms. British Journal of Educational Psychology, 55, 61-64.
LaRocco, J.M., House, J.S., & French, J.R.P. Jr. (1980). Social support, occupational stress, and health. Journal of Health and Social Behavior, 21, 202-218.
Latack, J.C. (1986). Coping with job stress: Measures and future directions for scale development. Journal of Applied Psychology, 71, 377-385.
Leach, D.J. (1984). A model of teacher stress and its implications for management. Journal of Educational Administration, 22, 157-172.
Levinson, R.W., & Gottman, J.M. (1978). Toward the assessment of social competence. Journal of Consulting and Clinical Psychology, 46, 453-462.
Link, B., & Dohrenwend, B.P. (1980). Formulation of hypotheses about the true prevalence of demoralization in the United States. In B.P. Dohrenwend, B.S. Dohrenwend, M.S. Gould, B. Link, R. Neugebauer, & R. Wunsch-Hitzig (Eds.), Mental illness in the United States (pp. 114-132). NY: Praeger.
Loscocco, K.A., & Spitze, G. (1990). Working conditions, social support, and the well-being of female and male factory workers. Journal of Health and Social Behavior, 31, 313-327.
Louis, M.R. (1980). Surprise and sense making: What newcomers experience in entering unfamiliar organizational settings. Administrative Science Quarterly, 25, 226-251.
McIntyre, (1984). The relationship between locus of control and teacher burnout. British Journal of Educational Psychology, 54, 235-238.
McCrae, R.R., & Costa, P.T., Jr. (1984). Personality, coping, and coping effectiveness in an adult sample. Journal of Personality, 54, 385-405.
McCrae, R.R., & Costa, P.T., Jr. (1994). The stability of personality: Observations and evaluations. Current Directions in Psychological Science, 3, 173-175.
Menaghan, E.G., & Merves, E.S. (1984) Coping with occupational problems: The limits of individual efforts. Journal of Health and Social Behavior, 25, 406-423.
Miller, J., Schooler, C., Kohn, M.L., & Miller, K.A. (1983). Women and work: The psychological effects of occupational conditions. In M.L. Kohn and C. Schooler (Eds.), Work and personality: An inquiry into social stratification (pp. 195-216). Norwood, NJ: Ablex.
Monroe, S.M., & Steiner, S.C. (1986). Social support and psychopathology: Interrelations with preexisting disorder, stress, and personality. Journal of Abnormal Psychology, 95, 29-39.
Motowidlo, S.J., Packard, J.S., & Manning, M.R. (1989). Occupational stress: Its causes and consequences for job performance. Journal of Applied Psychology, 71, 618-629.
Needle, R.H., Griffen, T., & Svendsen, R. (1981). Occupational stress: Coping and health problems of teachers. Journal of School Health, 51, 175-181.
Nelson, D.L. (1987). Organizational socializations: A stress perspective. Journal of Occupational Behaviour, 8, 311-324.
Nelson, D.L., & Sutton, C. (1990). Chronic work stress and coping: A longitudinal study and suggested new directions. Academy of Management Journal, 33, 859-869.
Nowack, K.M. (1991). Psychosocial predictors of health status. Work and

Stress, 5, 117-131.
Parkay, F.W., Greenwood, G., Olejnik, S., & Proller, N. (1988). A study of the relationship among teacher efficacy, locus of control, and stress. Journal of Research and Development in Education, 21, 13-22.
Parkes, K.R. (1982). Occupational stress among student nurses: A natural experiment. Journal of Applied Psychology, 67, 784-796.
Parkes, K.R. (1990). Coping, negative affectivity, and the work environment: Additive and interactive predictors of mental health. Journal of Applied Psychology, 75, 399-409.
Parkes, K.R. (1991). Locus of control and the demand-discretion model of stress. British Journal of Psychology, 82, 291-312.
Parkes, K.R. (1994). Personality and coping as moderators of work stress processes: Models, methods and measures. Work and Stress, 8, 110-129.
Paykel, E.S. (1978). Contribution of life events to causation of psychiatric illness. Psychological Medicine, 8, 245-253.
Pearlin, L.I., Lieberman, M.A., Menaghan, E.G., & Mullan, J.T. (1981). The stress process.Journal of Health and Social Behavior, 22, 337-356.
Pearlin, L.I., & Schooler, C. (1978). The structure of coping. Journal of Health and Social Behavior, 19, 2-21.
Phelan, J., Schwartz, J.E., Bromet, E.J., Dew, M.A., Parkinson, D.K, Schulberg, H.C., Dunn, L.O., Blane, H., & Curtis, E.C. (1991). Work stress, family stress and depression in professional and managerial employees. Psychological Medicine, 21, 999-1012.
Pugliesi, K. (1988). Employment characteristics, social support and the well-being of women. Women and Health, 14, 35-58.
Quinn, R.P., & Staines, G.L. (1979). The 1977 Quality of Employment Survey: Descriptive statistics with comparison data from the 1960-70 and the 1972-73 surveys. Ann Arbor, MI: University of Michigan.
Radloff, L.S. (1977). The CES-D scale: A self-report depression scale for research in the general population. Applied Psychological Measurement, 1, 385-401.
Reichenbach, H. (1951). The rise of the scientific philosophy. Berkeley: University of California Press.
Rosenfield, S. (1989). The effects of women's employment: Personal control and sex differences in mental health. Journal of Health and Social Behavior, 30, 77-91.
Rotter, J.B. (1966). Generalized expectancies for internal versus external control of reinforcement. Psychological Monographs, 80 (Whole No. 609), 1-28.
Russell, D.W., Altmaier, E., & Van Velzen, D. (1987). Job-related stress, social support, and burnout among classroom teachers. Journal of Applied Psychology, 72, 269-274.
Rutter, M., Maughan, B., Mortimore, P., & Ouston, J. (1979). Fifteen thousand hours. Cambridge, MA: Harvard.
Sachar, E. (1991). Shut up and let the lady teach: A teacher's year in a public school. New York: Poseidon Press.
Sarason, S. (1971). The culture of the school and the problem of change. Boston: Allyn and Bacon.
Schaubroeck, J., Ganster, D.C., & Fox, M.L. (1992). Dispositional affect and work-related stress. Journal of Applied Psychology, 77, 322-335.
Schonfeld, I.S. (1990a). Distress in a sample of teachers. Journal of Psychology, 123, 321-338.
Schonfeld, I.S. (1990b). Coping with job-related stress: The case of

teachers. Journal of Occupational Psychology, 63, 141-149.
Schonfeld, I.S. (1991). Dimensions of functional social support and psychological symptoms. Psychological Medicine, 21, 1051-1060.
Schonfeld, I.S. (1992a). A longitudinal study of occupational stressors and depressive symptoms in first-year teachers. Teaching and Teacher Education, 8, 151-158.
Schonfeld, I.S. (1992b). Assessing stress in teachers: Depressive symptoms scales and neutral self-reports on the work environment. In J. Quick, L., Murphy, and J. Hurrell, Jr. (eds.), Work and well-being: Assessments and instruments for occupational mental health (pp.270-285). Washington, DC: American Psychological Association.
Schonfeld, I.S. (1992c, March). Stress management: Personal versus organizational resources. Invited address at the Annual Meeting of the New York State United Teachers. New York City.
Schonfeld, I.S. (1994, May). The impact of working conditions on depressive symptoms: The case of newly appointed woman teachers. International Conference on Social Stress Research, Honolulu.
Schonfeld, I.S. (in press). Relation of negative affectivity to self-reports of job stressors and psychological outcomes. Journal of Occupational Health Psychology.
Schonfeld, I.S. (1995a, June). One-Year Longitudinal Study of the Effects of A Working Conditions, Social Support, Coping, and Locus of Control on Depressive Symptoms and Job Satisfaction in Women. Annual Meeting of the American Psychological Society, New York City.
Schonfeld, I.S. (1995b, Sept.). A quantitative researcher's view of qualitative occupational stress research. The American Psychological Association/National Institute of Occupational Health Conference on Work, Stress and Health '95: Creating Healthier Workplaces, Washington, DC.
Schonfeld, I.S. (in press a). Relation of negative affectivity to self-reports of job stressors and psychological outcomes. Journal of Occupational Health Psychology, 1.
Schonfeld, I.S. (in press b). Burnout in teachers: Is it burnout or is it depression? Human Stress: Current and Selected Research.
Schonfeld, I.S., Rhee, J. & Xia, F. (1995). Some methodologic issues in occupational-stress research: Examples from research in one occupational group. In S.L. Sauter & L. Murphy (Eds.), Organizational risk factors for job stress (pp. 323-339). Washington, DC: American Psychological Association.
Schonfeld, I.S., & Ruan, D. (1991). Occupational stress and preemployment measures: The case of teachers. Journal of Social Behavior and Personality, 6, 95-114.
Schonfeld, I.S., & Santiago, E.A. (1994). Working conditions and psychological distress in first-year women teachers: Qualitative findings. In L.C. Blackman (Ed.), What works? Synthesizing effective biomedical and psychosocial strategies for healthy families in the 21st century. Indianapolis: University of Indiana Press.
Seeman, M., Seeman, A.Z., & Budros, A. (1988). Powerlessness, work, and community: A longitudinal study of alienation and alcohol use. Journal of and Social Behavior, 29, 185-198.
Segovia, J., Bartlett, R.F., & Edwards, A.C. (1989). An empirical analysis of the dimensions of health status measures. Social Science and Medicine, 29, 761-768.
Seligman, M.E.P. (1975). Helplessness: On depression, development, and death.

San Francisco: Freeman.
Starnaman, S.M., & Miller, K.I. (1992). A test of a causal model of communication and burnout in the teaching profession. Communication Education, 41, 40-53.
Susser, M. (1981). The epidemiology of life stress. Psychological Medicine, 11, 1-8.
Theorell, T. (1987). Stress syndromes. Annals of Clinical Research, 19, 53-61.
U.S. Dept. of Labor (1965). Dictionary of occupational titles, 3rd edition. Washington, DC: U.S. Government Printing Office.
Wade, D.C., Cooley, E., & Savicki, V. (1986). A longitudinal study of burnout. Children and Youth Services Review, 8, 161-173.
Warr, P., & Parry, G. (1982). Paid employment and women's psychological well-being. Psychological Bulletin, 91, 498-516.
Watson, D., & Clark, L.A. (1984). Negative affectivity: The disposition to experience aversive emotional states. Psychological Bulletin, 96, 465-490.
Watson, D., & Pennebaker, J.W. (1989). Health complaints, stress, and distress: Exploring the central role of negative affectivity. Psychological Review, 96, 234-254.
Watson, D., Pennebaker, J.W., & Folger, R. (1987). Beyond negative affectivity: Measuring stress and satisfaction in the workplace. Journal of Organizational Behavior Management, 8, 141-157.
Weissman, M., Sholomskas, M., Pottenger, M., Prusoff, B., & Locke, B. (1977). Assessing depressive symptoms in five psychiatric populations: A validation study. American Journal of Epidemiology, 106, 203-214.
Zabel, R.H., & Zabel, M.K. (1982). Factors in burnout among teachers teachers of exceptional children. Exceptional Children, 49, 261-263.

Table 1
Preemployment Psychological Outcomes

First-Term Adversity Groups	Depressive Symptoms		Self-Esteem		Expected Job Satisfaction		Motivation To Teach		PP Symptoms	
	M	SD	M	SD	M	SD	M	SD	M	SD
Low	12.3	8:6	1.6	.5	4.3	.9	4.4	.8	8.4	5.6
Medium	10.6	9.7	1.6	.6	4.1	1.1	4.4	.9	7.9	5.7
High	12.4	9.9	1.6	.6	4.1	.9	4.4	.8	11.0	7.5
Nonteachers	13.5	10.3	1.7	.6	3.5	1.1	———		11.3	7.8
df	3, 256		3, 256		3, 255		2, 208		3, 257	
F	.97		.73		6.94		.16		4.32	
p	ns		ns		.001		ns		.01	
Tukey					L, M, H > N				H, N > M	

Note--Depressive and PP Symptoms are coded such that higher scores reflect increased symptoms. Self-Esteem is coded such that higher scores reflect lower Self-Esteem. Expected Job Satisfaction and Motivation are coded such that higher scores reflect more Satisfaction and Motivation.

Table 2
Second-Term Psychological Outcomes

First-Term Adversity Groups	Depressive Symptoms		Self-Esteem		Job Satisfaction		Motivation To Teach		PP Symptoms	
	M	SD	M	SD	M	SD	M	SD	M	SD
Low	9.4	7.5	1.5	.5	3.8	.8	4.3	.9	9.9	7.0
Medium	10.7	8.6	1.5	.5	3.6	.8	4.0	1.0	9.4	6.3
High	16.1	11.7	1.7	.7	2.9	1.1	3.9	1.1	12.4	7.0
Nonteachers	14.7	9.9	1.7	.5	2.9	1.0	———		10.1	6.7
df	3, 259		3, 256		3, 259		2, 210		3, 257	
F	7.67		2.60		16.30		3.35		2.76	
p	.001		.06		.001		.05		.05	
Tukey	H > L,M N > L				L > H,N M > H,N		L > H		H > M	

Note—Depressive and PP Symptoms are coded such that higher scores reflect increased symptoms. Self-Esteem is coded such that higher scores reflect lower Self-Esteem. Job Satisfaction and Motivation are coded such that higher scores reflect higher morale.

Table 3
Preeemployment Health-Behavior Outcomes

First-Term Adversity Groups	Smoking		Alcohol Use		Tranquilizer Use*		Obesity	
	M	SD	M	SD	M	SD	M	SD
Low	.28	.81	2.0	1.1	.00*	.00	.032	.005
Medium	.45	1.01	2.0	1.4	.02	.14	.032	.006
High	.44	.96	2.4	1.2	.02	.13	.033	.005
Nonteachers	.43	1.00	2.1	1.4	.09	.28	.031	.005
df	3, 254		3, 254		2, 153*		3, 252	
F	.51		1.07		1.99		1.82	
p	ns		ns		ns		ns	

Note--Smoking was coded as the natural logarithm of the sum of one plus the number of cigarettes smoked. When smoking was coded as a binary, or present-absent, variable, a chi-square test indicated that the groups did not differ on the binary variable. Tranquilizer Use applies only to teachers who left college after 1987; preemployment baseline data on Tranquilizer Use were not collected for the 1987 cohort. Obesity was measured with the Quetelet ratio, weight/(height squared).

*Because there was no Tranquilizer-Use variance in the Low-Adversity Group, the ANOVA was applied to the Medium- and High-Adversity Teachers and the Nonteachers.

Table 4
Second-Term Health-Behavior Outcomes

First-Term Adversity Groups	Smoking		Alcohol Use		Tranquilizer Use*		Obesity		Days Absent	
	M	SD	M	SD	M	SD	M	SD	M	SD
Low	.33	.90	1.8	1.2	.00*	.00	.032	.006	2.0	2.5
Medium	.46	1.00	1.6	.9	.04	.20	.033	.006	1.4	2.4
High	.47	.96	1.9	1.2	.06	.31	.034	.006	1.6	1.6
Nonteachers	.40	1.09	2.0	1.2	.04	.20	.032	.005	3.8	10.2
df	3, 255		3, 257		2, 157*		3, 253		3, 255	
F	.29		1.71		.18		1.45		2.84	
p	ns		ns		ns		ns		.05	
Tukey									N > M	

Note—Smoking was coded as the natural logarithm of the sum of one plus the number of cigarettes smoked. When smoking was coded as a binary, or present-absent, variable, a chi-square test indicated that the groups did not differ on the binary variable. Tranquilizer Use applies only to teachers who left college after 1987; preemployment baseline data on Tranquilizer Use were not collected for the 1987 cohort. Obesity was measured with the Quetelet ratio, weight/(height squared).

*Because there was no Tranquilizer-Use variance in the Low-Adversity Group, the ANOVA was applied to the Medium- and High-Adversity Teachers and the Nonteachers.

Table 5
Psychological Outcomes: First Year (Second Term)

Predictors	Depressive Symptoms	Self-Esteem	Job Satisfaction	Motivation To Teach	PP Symptoms
Preemployment Period					
Pre. Counterpart of Outcome	.30c	.55c	.13a	.27a	.43c
General Support	-.23c	-.15a	-.03	-.05	-.19b
First Term					
Episodic Stressors	.29c	.14a	-.35c	-.17a	.06
Colleague Support	.08	.07	.15a	-.01	-.01
Supervisor Support	-.08	-.12a	.25c	.16a	-.05
Total Adjusted R^2	.36	.43	.28	.14	.31

Note—$208 \leq n \leq 210$. $^{a}p < .05$; $^{b}p < .01$; $^{c}p < .001$.
The table contains standardized regression coefficients. Each regression equation controlled for age, social class of origin, race, current marital status, undesirable fateful life events occurring outside the workplace, preemployment PP Symptoms, and the preemployment counterpart of the outcome measure regardless of the significance levels of the control variables.

Self-Esteem is coded such that a high score reflects low Self-Esteem.

Table 6
Psychological Outcomes: Second Year (Third Term)

Predictors	Depressive Symptoms	Self-Esteem	Job Satisfaction	Motivation To Teach	PP Symptoms
Preemployment Period					
Pre. Counterpart of Outcome	.21a	.59c	-.02	.24b	.46c
General Support	-.11	-.15a	.03	.02	-.08
First Term					
Episodic Stressors	.16a	.14a	-.30c	-.13	.10
Colleague Support	-.05	-.04	.02	.03	-.01
Supervisor Support	-.08	-.11t	.18a	.15t	-.10
Total Adjusted R^2	.25	.48	.11	.14	.34

Note—n = 138. $^{t}p < .10$; $^{a}p < .05$; $^{c}p < .001$.
The table contains standardized regression coefficients. Each regression equation controlled for age, social class of origin, race, current marital status, undesirable fateful life events occurring outside the workplace, preemployment PP Symptoms, and the preemployment counterpart of the outcome measure regardless of the significance levels of the control variables.

Self-Esteem is coded such that a high score reflects low Self-Esteem.

Table 7
Psychological Outcomes: Third Year (Fifth Term)

Predictors	Depressive Symptoms	Self-Esteem	Job Satisfaction	Motivation To Teach	PP Symptoms
Preemployment Period					
Pre. Counterpart of Outcome	.36c	.56c	.12t	.30c	.44c
General Support	.03	-.12t	-.05	.01	.02
Second Year (Third Term)					
Episodic Stressors	.34c	.06	-.33c	-.06	.32c
Colleague Support	-.15a	-.12t	.05	.08	-.18b
Supervisor Support	.03	-.10	.20b	.07	.04
Total Adjusted R^2	.31	.41	.18	.10	.44

Note—n = 166. $^{t}p < .10$; $^{a}p < .05$; $^{c}p < .001$.
The table contains standardized regression coefficients. Each regression equation controlled for age, social class of origin, race, current marital status, undesirable fateful life events occurring outside the workplace, preemployment PP Symptoms, and the preemployment counterpart of the outcome measure regardless of the significance levels of the control variables.

Self-Esteem is coded such that a high score reflects low Self-Esteem.

Table 8
Health Behavior Outcomes: Second Term

Predictors	Smoking*	Alcohol Consum.	Tranquil. Use	Obesity	Days Absent
Preemployment Period					
Pre. Counterpart of Outcome	.87c	.53c	.24b	.94c	n/a
General Support	-.05	-.04	.09	-.01	.02
First Term					
Episodic Stressors	.01	-.05	.19a	.01	-.09
Colleague Support	.09a	-.02	.12	-.00	-.01
Supervisor Support	.05	.02	.00	-.01	-.15t
Total Adjusted R^2	.75	.29	.05	.89	.03

Note—$208 \leq n \leq 209$ except for Tranquilizer Use where $n = 163$. $^{t}p < .10$; $^{a}p < .05$; $^{b}p < .01$; $^{c}p < .001$.

The table contains standardized regression coefficients. Each regression equation also controlled for the preemployment counterpart of the outcome (except for Days Absent from Work Due to Ill Health), preemployment PP Symptoms, age, social class of origin, race, current marital status, and undesirable fateful life events occurring outside the workplace regardless of their significance levels.

*A logistic regression analysis indicated that having been a smoker during the preemployment period was the only factor to predict being a smoker during the second term.

Table 9
Summary of Effects

Predictors	First Year Outcomes	Second Year Outcomes	Third Year Outcomes
General Support	Decr. Depr. Sympts. Incr. Self-Esteem Decr. PP Sympts.	Incr. Self-Esteem	Incr. Self-Esteem*
Buffers Stressors			Self-Esteem
Episodic Stressors	Incr. Depr. Sympts. Decr. Self-Esteem Decr. Job Satis. Decr. Motiv. Incr. Tranq. Use	Incr. Depr. Sympts. Decr. Self-Esteem Decr. Job Satis.	Incr. Depr. Sympts. Decr. Job Satis. Incr. PP Sympts. Incr. Obesity Incr. Tranq. Use
Colleague Support	Incr. Job Satis. Incr. Smoking		Decr. Depr. Sympts. Incr. Self-Esteem Decr. PP Sympts.
Buffers Stressors		Alc. Use	Self-Esteem
Nonbuff. Interac.	Obesity		
Supervisor Support	Incr. Self-Esteem Incr. Job Satis. Incr. Motiv. Decr. Days Absent*	Incr. Self-Esteem* Incr. Job Satis. Incr. Motiv.* Incr. Smoking	Incr. Job Satis. Incr. Alc. Use
Buffers Stressors		Depr. Sympts.* PP Sympts.	
Nonbuff. Interac.	Motiv.	Obesity	

*Includes marginally significant findings.

Table 9, Summary of Effects (continued)

Predictors	First Year Outcomes	Second Year Outcomes	Third Year Outcomes
Positive Comparisons	Incr. Self-Esteem	Incr. Self-Esteem Decr. Self-Esteem	
Discipline Use	Decr. Days Absent	Decr. Days Absent	Decr. Job Satis. Decr. Motiv.
Buffers Stressors	Alc. use		
Optimism	Incr. Alc. Use	Decr. Depr. Sympts.	
Buffers Stressors			PP Sympts.
Nonbuff. Interac.		Depr. Sympts. Motiv.	
Selective Ignoring		Decr. Obesity	Incr. Depr. Sympts. Incr. PP Sympts.
Nonbuff. Interac.			Self-Esteem
Direct Action			Decr. Obesity
Buffers Stressors			Alc. Use
Nonbuff. Interac.		Job Satis.	
Advice			
Buffers Stressors			Job Satis.
Nonbuff. Interac.			Motiv.
Locus of Control			
Buffers Stressors		PP Sympts.	Depr. Sympts. PP Sympts.
Nonbuff. Interac.			Obesity

Term-One Job Conditions and Supervisor Support Interact to Affect Second-Term Motivation

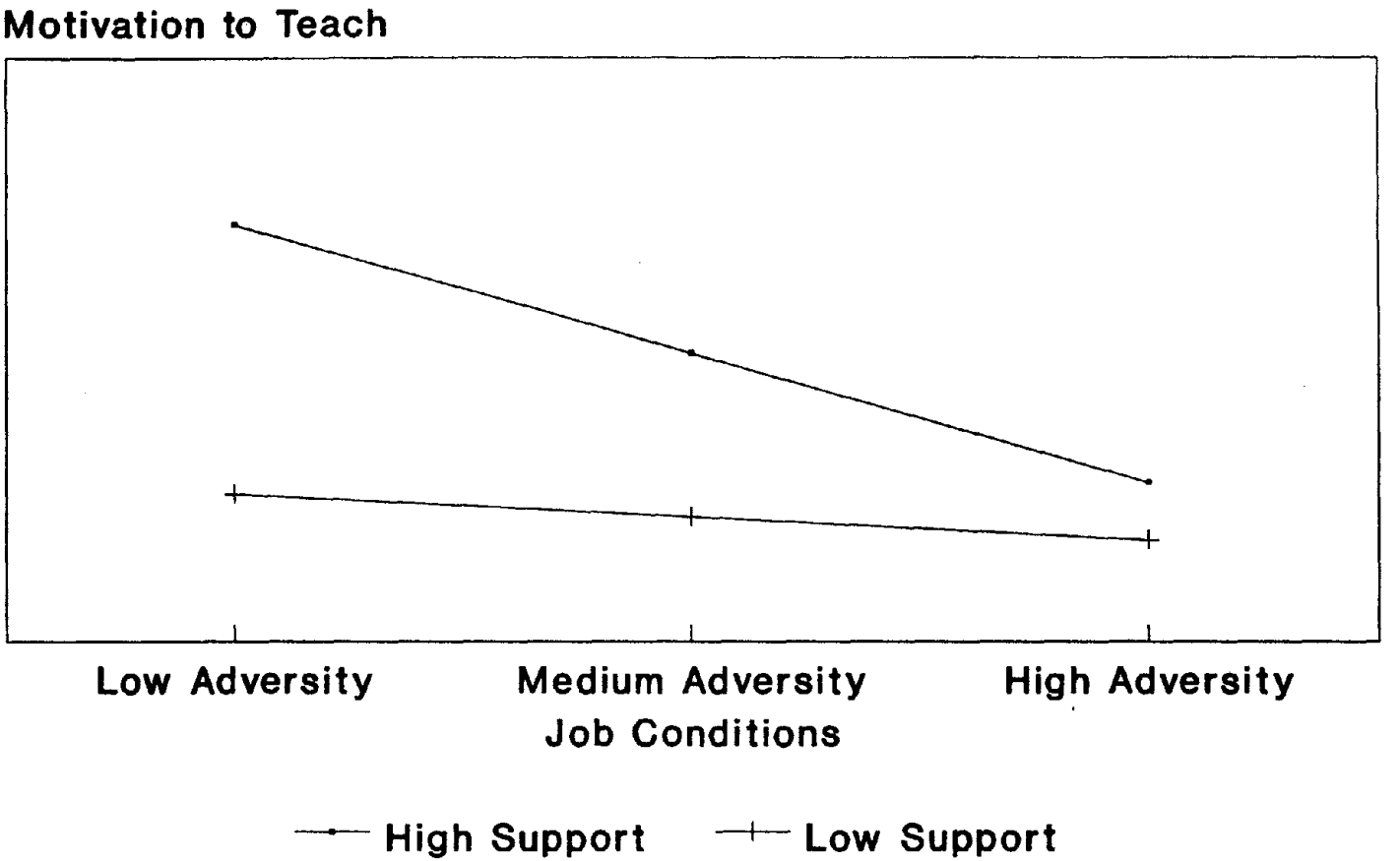
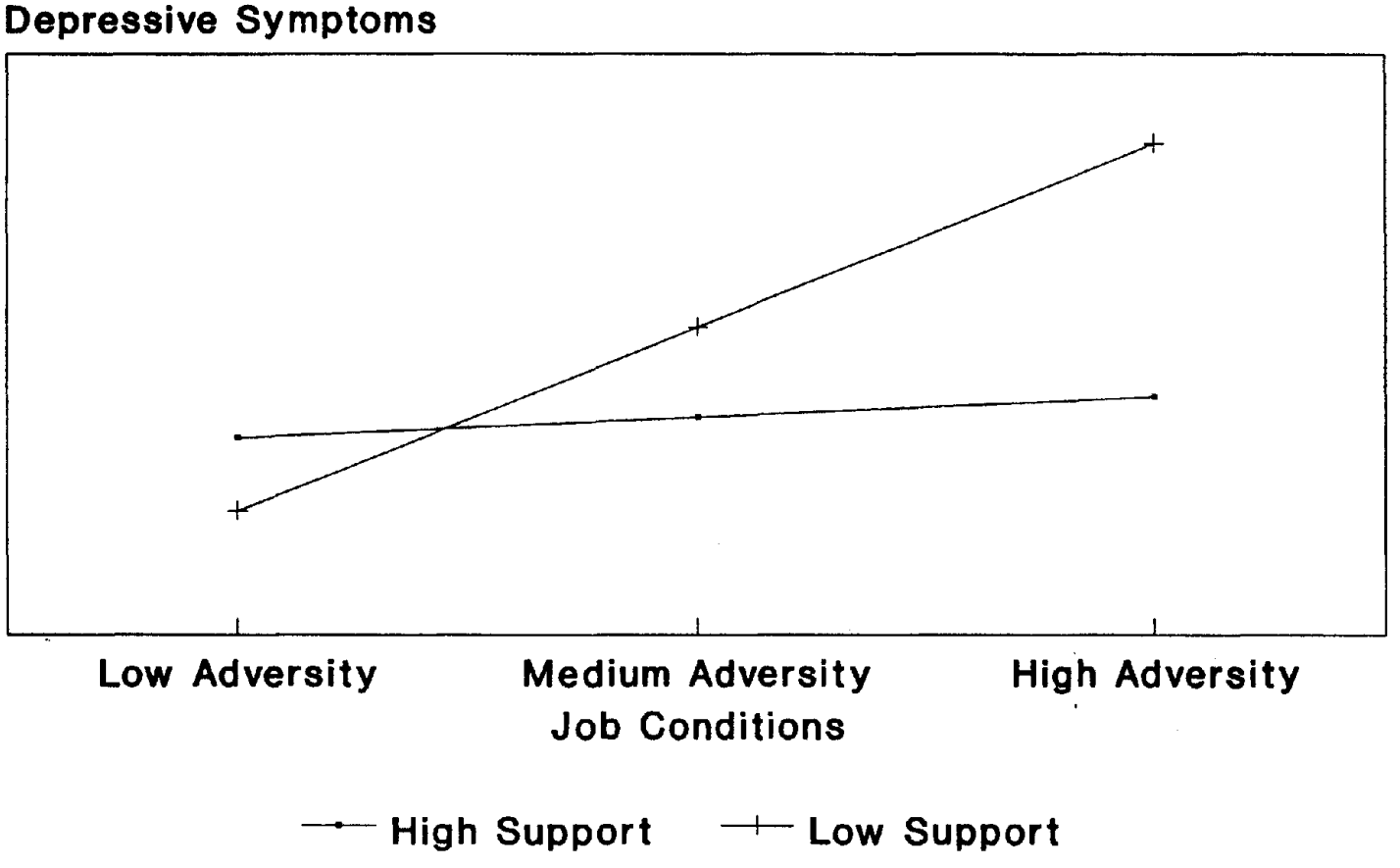


Figure 1

Year-One Job Conditions and Supervisor Support Interact to Affect Second-Year Depressive Symptoms

Figure 2



Year-Two Job Conditions and Locus of Control Interact to Affect Third-Year Depressive Symptoms

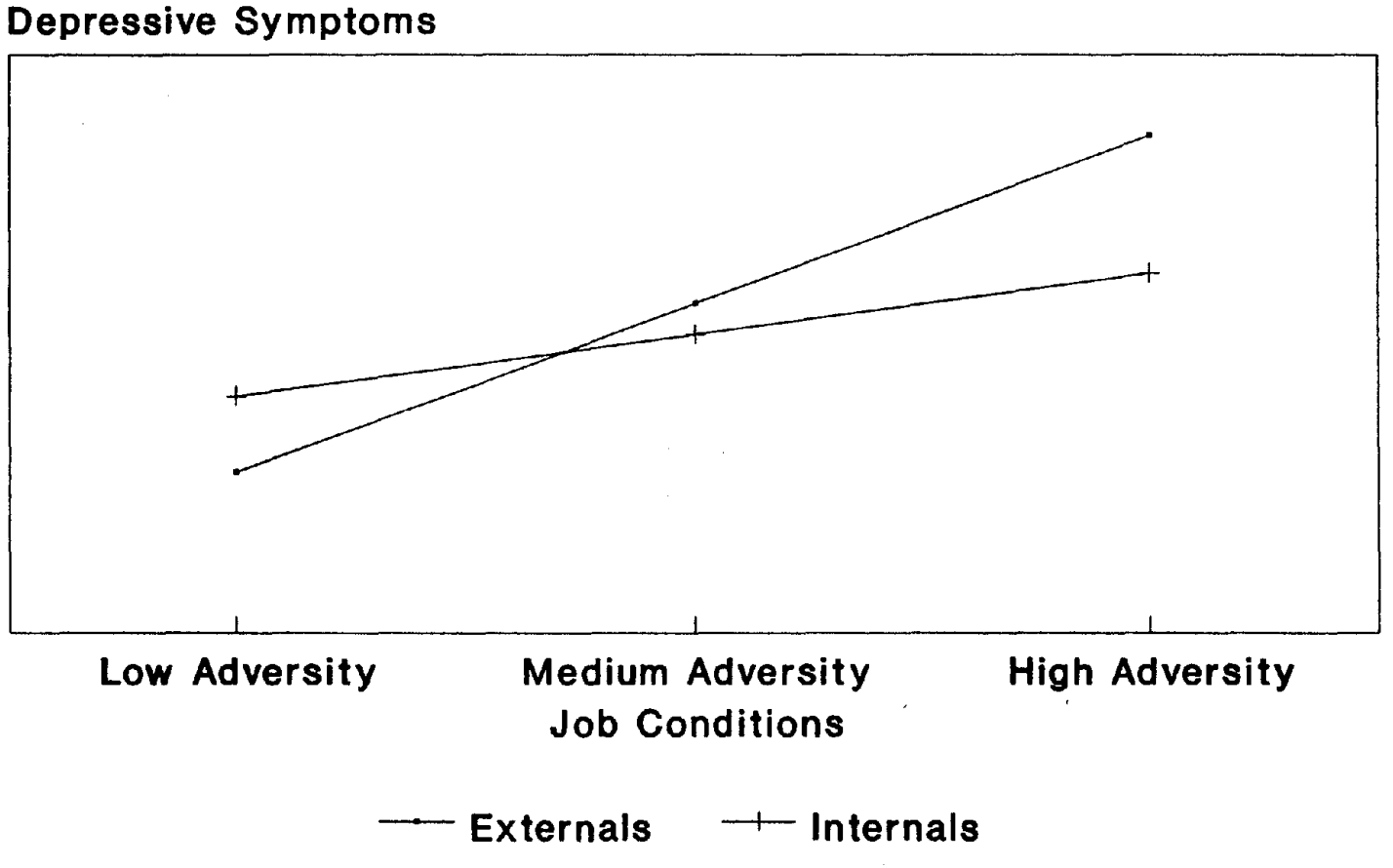


Figure 3

Year-One Job Conditions and Supervisor Support Interact to Affect Second-Year Obesity

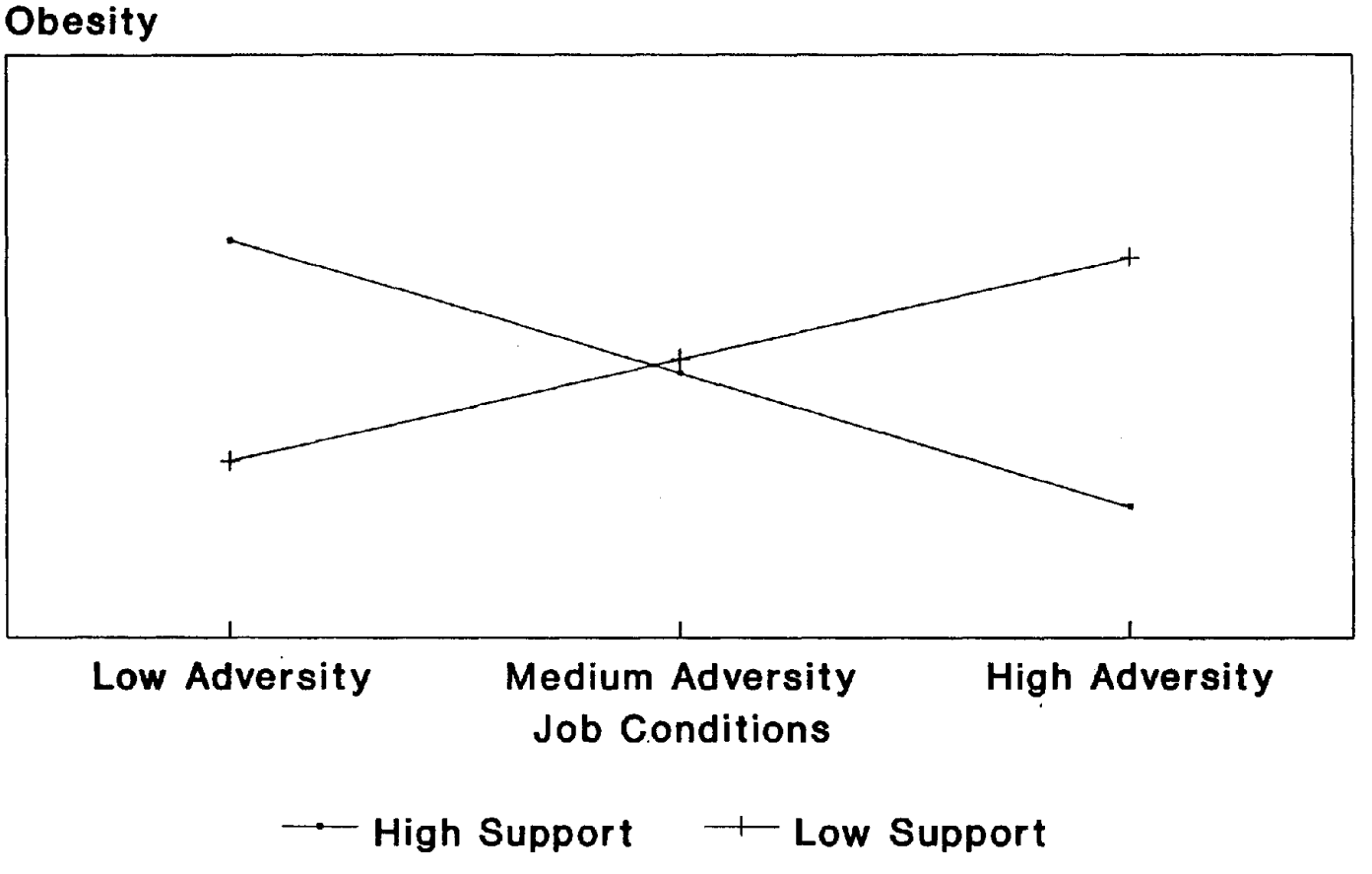


Figure 4

PUBLICATIONS CONNECTED TO THE PROJECT

Publications that resulted from the project

Schonfeld, I.S. (in press). Relation of negative affectivity to self-reports of job stressors and psychological outcomes. Journal of Occupational Health Psychology.

Schonfeld, I.S. (1996, in press). Burnout in teachers: Is it burnout or is it depression? Human Stress: Current and Selected Research, 5.

Schonfeld, I.S., Rhee, J. & Xia, F. (1995). Methodological issues in occupational-stress research: Research in one occupational group and its wider applications. In S.L. Sauter & L.R. Murphy (Eds.), Organizational risk factors for job stress (pp. 323-339). Washington, DC: American Psychological Association.

Schonfeld, I.S., & Santiago, E.A. (1994). Working conditions and psychological distress in first-year women teachers: Qualitative findings. In L.C. Blackman (Ed.), What works? Synthesizing effective biomedical and psychosocial strategies for healthy families in the 21st century (pp. 114-121). Indianapolis: University of Indiana Press.

Schonfeld, I.S. (1992). A longitudinal study of occupational stressors and depressive symptoms in first-year teachers. Teaching and Teacher Education, 8, 151-158.

Schonfeld, I.S. (1992). Assessing stress in teachers: Depressive symptoms scales and neutral self-reports of the work environment. In J.C. Quick, L.R. Murphy, and J.J. Hurrell, Jr. (Eds.), Work and well-being: Assessments and instruments for occupational mental health (pp. 270-285). Washington, DC: American Psychological Association.

Schonfeld, I.S. (1991). Dimensions of functional social support and psychological symptoms. Psychological Medicine, 21, 1051-1060.

Schonfeld, I.S., & Ruan, D. (1991). Occupational stress and preemployment measures: The case of teachers. Journal of Social Behavior and Personality (Special Issue on Occupational Stress, P. Perrewe, Ed.), 6, 95-114.

Schonfeld, I.S. (1990). Coping with job-related stress: The case of teachers. Journal of Occupational Psychology, 63, 141-149.

Schonfeld, I.S. (1990). Distress in a sample of teachers. Journal of Psychology, 123, 321-338.

Future publications that are anticipated

Schonfeld, I.S. One-year longitudinal study of the effects of working conditions, social support, coping, and locus of control on depressive symptoms and job satisfaction.

Schonfeld, I.S. A quantitative researcher's view of qualitative occupational stress research.

Schonfeld, I.S. Three-year longitudinal study of the effects of working conditions on depressive symptoms and job satisfaction (tentative working title).

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15. Supplementary Notes

16. Abstract (Limit: 200 words) The factors which may adversely affect teachers' psychological well being during the first 3 years of their careers were identified. Newly employed women teachers in the New York metropolitan area were followed in a longitudinal study. A matched comparison group of nonteachers was also studied. Adverse effects were monitored using measures of depressive symptoms, psychophysiological symptoms such as headaches or stomach aches, self esteem, job satisfaction, and motivation to teach in the future. The most important predictor of psychological outcomes was found to be the Episodic Stressor Scale. General support, supervisor support, and colleague support were found to have beneficial effects. The behavior of students, including physically assaultive, excessively verbally assaultive and disruptive behavior, was found to have a negative effect on morale. The author recommends that administrative units not permit students who are inclined to fight, to bring weapons to school, or who threaten harm to teachers or other students to sit in regular classrooms. They should be educated elsewhere. More effective strategies are also needed to handle the disruptive students and this requires the collaboration of teachers and supervisors.

17. Document Analysis a. Descriptors

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