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Lorna Maxine Earl

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OCCUPATIONAL STRESS AND FUNCTIONING AMONG
WOMEN ELEMENTARY SCHOOL TEACHERS:
A MODEL INCLUDING PERSONALITY TRAITS,
COPING, SOCIAL SUPPORT AND LIFE STRESS

by
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Submitted in partial fulfilment
of the requirements for the degree of
Doctor of Philosophy

Faculty of Graduate Studies
The University of Western Ontario
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ABSTRACT

This study provides a description of occupational stressors, social support structures, personality traits, coping mechanisms, major life events and health status for women elementary school teachers in Ontario. It also examines the relationships between occupational stress and physical and mental dysfunction, job satisfaction and job effectiveness within the context of a model that includes these other variables.

Occupational stressors are related to mental dysfunction, symptoms, job satisfaction and job effectiveness but not to chronic conditions or illness-related behaviour like missing work or seeking treatment. Personality, social support, coping and life events are all related to either occupational stressors or dysfunction but there is little support for the kinds of interactive effects that would suggest an exacerbating or buffering effect of any of these variables with occupational stressors.

The findings also highlight the complexity of the stress process when multivariate analysis techniques are used to examine all of the variables in the model together. When they are all examined jointly the associations among the independent variables change their relationships with the dependent variables. These findings reinforce the need for clearer conceptualization and measurement within the stress research area.

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CHAPTER 1

HISTORICAL AND THEORETICAL FRAMEWORK

1.1 INTRODUCTION

In recent years, there has been considerable interest in occupational stress generally and stress in the teaching profession specifically. However, the researchers in the area have focused primarily on isolating stressful conditions and relating them to a feeling of being under stress. Most investigators have not explored the relationship of stress in teaching to either physical or mental dysfunction, nor have they considered the impact of other characteristics of the situation or of the individual in the stress-dysfunction process.

This study was designed to develop and test a comprehensive model of occupational stress and dysfunction within a particular occupational group. It is an investigation of the relationship of occupational stress to health status, job satisfaction and job effectiveness for women elementary school teachers. It also explores the contribution of a number of potential mediating variables to the explanation of the occupational stress-illness process. The study includes only women teaching in elementary schools for several reasons. First, it provides a previously unavailable description of the stressfulness of teaching for women and of the kinds of stressors, coping strategies and supports in their lives. Second, it was possible to particularize the measurement of the variables in the model and make them more specific.

Occupational stressors were chosen from ones that were part of the lives of this relatively homogeneous group and the characteristics of the situation or individual were selected to be relevant to this population. Specifically, the objectives of this study were to describe women elementary school teachers in terms of:

- 1) the nature and prevalence of occupational stressors that impinge on them;
- 2) the social support and work support that is available to them;
- 3) several selected personality variables;
- 4) the coping mechanisms that they use and see as effective;
- 5) the nature and prevalence of their major stressful life events;
- 6) their health status.

and, to ascertain the relationships that exist, in this population, between occupational stress and physical and mental dysfunction, job satisfaction and job effectiveness, within the context of a theoretical model that includes other potential contributing variables such as social support, coping, major life events and personality.

1.2 HISTORICAL PERSPECTIVE

1.2.1 GENERAL STRESS RESEARCH

Stress and stress research are currently the focus of a great deal of interest in every medium from television to contemporary magazines and learned journals. McGrath (1970) explains that:

This escalating interest may exist because 1) the stress concept seems to hold much promise as an integrating concept through which we can make some connections among the neighbouring but isolated fields of physiology, psychology, sociology and medicine and 2) the study of stress seems to be directly applicable to some of the most pressing problems of the social order and offers a route to understanding, if not eliminating them.

During the past half-century, research that falls under the general rubric of stress research has been undertaken within various disciplines. Historically, the focus of epidemiological inquiry was the identification of those chemical and microbiological agents that influence health. The recognition that many diseases could not be fully explained by such factors led to a search for new factors in the 1950s and the formulation of the stress concept of disease. In 1956 Hans Selye articulated his concept of stress as the General Adaptation Syndrome, a set of nonspecific reactions to various noxious environmental agents. Wolff (1950) demonstrated that noxious substances applied to the body will call forth defensive reactions in the organism. His later work provided evidence that stressful life events,

1

by evoking psychophysiological reactions, played an important part in the natural history of many diseases (Wolff et al., 1953). The work of these men increased interest in the possibility that psychosocial factors may initiate physiological changes in a manner similar to physical stimuli. This produced a number of studies in the 1950s and 1960s that investigated the potential relationships between social stress and illness (Hinkle and Plummer, 1952; Hinkle et al., 1956; Hinkle and Wolff, 1957; Mechanic and Volkhart, 1961; Rahe and Holmes, 1965; Antonovsky and Katz, 1967). While these early studies were not elegant methodologically, they suggested that social stress was associated with a variety of health-related variables.

The publication by Holmes and Rahe (1957) of an article describing an initial attempt to quantify the impact of life changes on an individual provided a major impetus for research in the area of life stress. Their pioneering work in the conceptualization and measurement of life stress produced the Schedule of Recent Events (S.R.E.), an instrument designed to quantify life stress. Since its creation the S.R.E., or adaptations of it, have been used in more than 1000 studies that found an association between life stress, measured this way, and a variety of physical and mental illnesses. Although these studies reinforced the belief that life stress and illness were related, they also raised many questions. It became clear that the relationship between stress and illness was very complex. In addition, there were many methodological and conceptual problems in the area that prevented the development of a more rigorous paradigm of the stress-illness relationship (Brown, 1974; Gunderson and Rahe, 1974; Mechanic, 1974; Ruch and Holmes, 1974; Rabkin and Struening, 1976; Dean and Lin, 1977;

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Lin et al., 1979; Dohrenwend and Dohrenwend, 1980; Coyne and Lazarus, 1980).

As a result of these observations, stress research over the past 20 years has been increasingly directed toward the resolution of both the conceptual and the methodological issues. Conceptually, perhaps because of its complexity and its roots in so many disciplines, theory development in stress research has been erratic and poorly formulated. Even the word "stress" has no agreed-upon meaning. It is sometimes defined as something that exists in the individual, some kind of feeling, anxiety or emotion. In other instances, it is conceptualized as something that lies outside the individual, some external force or situation that elicits an apprehensive response from the individual. Finally, stress is sometimes specified as the product of the interaction between man and his external environment (Dodge and Martin, 1970).

Because of the differences in its definition, researchers have come to view stress as a general concept with heuristic value as a basis for communicating but not as a rigorous scientific concept (McGrath, 1970; Kasl, 1983). It has become merely a collective term for a large, complex, amorphous, interdisciplinary area of interest (Lazarus, 1966).

The major conceptual issue in stress research has been that of defining the components of a theoretical model that will explain the relationships between stress and illness, and account for individual differences in stress-related illness. This requirement has led to the investigation of other characteristics of the environment and the person that might, along with social stressors, figure in the explanation of illness or account for individual differences in illness. These investigations are ongoing in such areas as social support (Cobb, 1976;

Henderson, 1977, 1980; Liem and Liem, 1978; Turner, 1981, 1984; Thoits (1982), coping strategies (Pearlin and Schooler, 1978; Ilfeld, 1980; Folkman and Lazarus, 1980; Billings and Moos, 1981), the impact of demographic variables (Dohrenwend, 1973; Uhlenhuth et al., 1974; Masuda and Holmes, 1978; Noh 1984), developmental life phases (Levinson, 1976; Vaillant, 1977), and personality traits (Jenkins et al., 1976; Antonovsky, 1979; Kobasa, 1981, 1982).

Concurrent with expansion and refinement of the theoretical framework, are attempts to resolve methodological problems in research design, measurement, data collection and analysis. There have been attempts to clarify the level of analysis (Lazarus, 1980), to develop more reliable and valid indicators of the constructs (Tennant and Andrews, 1976; Dohrenwend and Dohrenwend, 1978; Pearlin and Schooler, 1978; Johnson and Sarason, 1979; Brown, 1980; Kobasa, 1982; Turner, 1984), to utilize more complex multivariate analysis strategies (Vossel and Froehlich, 1979; Weyer and Hodapp, 1979), to achieve generalization both to broader populations and to specific populations (Myers et al., 1974; Dean and Lin, 1977; Brown and Harris, 1978; Howard et al., 1978; Minter and Kimball, 1980; Fletcher and Payne, 1980), and to establish causal associations (Myers et al., 1972; Vossel and Froehlich, 1979; Lazarus et al., 1980; Beehr and Schuler, 1980).

1.2.2 RESEARCH SPECIFIC TO WORK, TEACHERS AND WOMEN

Stress research dealing specifically with the work environment, women or teachers has drawn heavily on the work in the life stress area and parallels it in many ways.

Research in occupational stress was originally motivated by clinical observations of the adverse effects of job stress on health, coupled with pressure from organizations to improve productivity. In the 1960s several large scale studies began of the effects of the social environment, especially the work environment, on worker health and on such non-health outcomes as job satisfaction and job performance. (Kahn, 1964; Caplan et al., 1975). Much of the early work was dedicated to identifying, describing and categorizing work stressors (Gross, 1970; Cooper and Marshall, 1976). More recently there has been increased attention, as with general stress research, to expanding and improving the conceptualization of the stress-illness model in order to improve the predictive and explanatory power of the model. This means considering not only stressors in the work environment, but other kinds of stressors, as well as, characteristics of the individual and the kinds of resources that are available to the individual in order to improve the predictive and explanatory power of the model (Cooper and Marshall, 1976; LaRocca et al., 1980; Burke and Bradshaw, 1981). Because of its more pragmatic origins, recent research in occupational stress has also been directed at evaluating strategies for reducing or managing stressful conditions in the work setting (Newman and Beehr, 1979).

Stress research with both teachers and women is quite rare. What little research there is for teachers has, for the most part, been directed towards isolating and describing specific stressors in the teaching environment and documenting the number of teachers who feel they are under stress. (Cichon, 1978; Koff et al., 1979; Nash, 1980; Kyriacou, 1980; Dunham, 1980; Saville, 1981). Only very recently have

researchers considered teacher stress within the context of a more general stress model (Kyriacou and Sutcliffe, 1978; Kyriacou, 1980; Tung and Kuch, 1980; Needles et al., 1981; Syrotuik and D'Arcy, 1983).

Early stress researchers generally assumed that their findings applied in the same way to both men and women. However, many of the early studies either did not include women or did not analyze the results separately by sex. The escalation of the women's movement in the 1960s and 1970s created an interest in examining the stress model as it relates specifically to women. This has resulted in a number of studies isolating and examining stressful conditions that are unique to women (Pearlin, 1975; Stellman, 1977; Nadelson, 1980) and attention is starting to be paid to either sex differences or to women specifically in stress research (Vanfossen, 1971; Brown and Harris, 1978; Masuda and Holmes, 1978; Billing and Moos, 1980; Ilfeld, 1980; Cooper, 1981; Hollander et al., 1982).

1.2.3 THE PRESENT STUDY

The intent of this study was to develop and test a model of occupational stress for women teachers. It includes components of a theoretical model that might help explain the relationship between occupational stress and dysfunction and provide insight into ways to prevent stress or intervene in the stress-dysfunction process to improve well-being.

The next two chapters provide a review of the literature in the area and a description of the model.

Briefly, the model postulates that occupational stressors are related to dysfunction and that personality traits, social support, life stressors and coping affect this relationship. There are three ways that these variables can affect the relationship between occupational stressors and dysfunction. They can reduce or increase the level of stressors directly. They can increase or reduce functioning directly. They can either buffer or exacerbate the effect of occupational stressors on dysfunction.

If the stress of too much work is making an individual depressed several things could affect this situation. First, something could happen to reduce the amount of work and consequently the level of occupational stress. Second, something good could happen outside of work to affect the level of depression regardless of the level of occupational stress. Finally, the impact of the work overload could be buffered by some circumstance that doesn't change the amount of work or depression generally but prevents the work overload from resulting in depression.

All of these circumstances could happen in the opposite direction. Something could increase the amount of work and the resulting stress level. Something bad could happen outside work to increase the depression. The impact of the work overload could be exacerbated by something so that the depression would be intensified when there is a lot of work to do.

The current focus in occupational stress research is on finding characteristics of individuals or situations that function to buffer or exacerbate the stress reaction. The search is for conditions that can help in withstanding stress or conversely that can increase

vulnerability to stressful conditions. These could form the basis for the development of interventions and stress management techniques.

The identification of circumstances that prevent or increase the occurrence of stressors and of those that directly enhance or reduce functioning can also have far-reaching practical significance.

Unfortunately, the former must occur before stressful events. Since these are often unpredictable, it is hard to put preventive measures in place. Understanding the mechanisms for improving or reducing functioning generally is desirable but this does not provide information about strategies to reduce or control the impact of occupational stress.

Clarification of the nature of these relationships between occupational stressors and dysfunction within the context of these other variables should lead to increased understanding of the underlying occupational stress-dysfunction process and help to guide not only further research but also clinical practice.

This study involves an examination of how each of personality traits, social support, life stressors and coping operate with occupational stressors to affect dysfunction in a sample of women elementary school teachers. Do they affect occupational stressors directly, dysfunction directly or is their effect contingent on the level of stressors? Finally, there is an analysis of the combined relationship of these variables with occupational stressors and dysfunction.

It is hoped that limiting the investigation to women teachers will provide some insight into the nature of these relationships in a relatively homogeneous occupational group that has not been examined previously as well as help to guide further research in the occupational stress area generally.

CHAPTER 2

LITERATURE REVIEW

Even though stress research is relatively recent, a tremendous number of studies and a great deal of theoretical literature have been produced. It is not possible to provide a comprehensive review of all of this material in this paper. Instead, many of the reports are only mentioned briefly and only the key studies that are relevant to this study are described in greater detail. The review, therefore, includes summaries of the current state of knowledge with brief accounts of studies that investigate occupational stress and functioning and of studies that identify other variables that may be related to occupational stress and/or dysfunction. The major focus is on studies that investigate how personality traits, social support, and coping operate to change the relationship of occupational stress or life stress with functioning.

Since only one study was found that considered occupational stress for women teachers (D'Arcy and Syrotuik, 1983) the review is generally concerned with studies involving other populations that suggest the results that might be expected with women teachers.

In Section 2.1 studies of the relationship between occupational stress and dysfunction are discussed with a brief summary of the kinds of dysfunction that have been examined. In Sections 2.2 to 2.5, there is a review the literature describing the joint relationship of occupational stress or life stress and personality traits, coping and social support to dysfunction. Section 2.6 contains a review of the

limited research dealing with several of these variables at the same time. Finally, in Section 2.7, there is a description of the possible impact of some demographic variables.

2.1 OCCUPATIONAL STRESSORS AND DYSFUNCTION

2.1.1 OCCUPATIONAL STRESSORS

Work occupies a major portion of most people's lives, in terms of both time spent and importance. When a person is viewed within the work environment, stressors can be identified that are directly related to that environment. These occupational events are often not traumatic nor do they always engender significant life changes. They are rather part of the daily demands of an individual's life that may well have an impact on such things as health, job performance and job satisfaction.

Occupational stress research has identified a number of work-specific conditions or circumstances that are potential stressors (Gross, 1970; Cooper and Marshall, 1976; Beehr and Newman, 1978; MacKay and Cox, 1978; Cherry, 1978; Howard et al., 1978; House et al., 1979; Kahn and French, 1979; Greenbury and Valetutti, 1980; Cooper and Marshall, 1980; White, 1981; McBride, 1981).

Cooper (1981) summarized these conditions in the following categories of occupational stressors:

- (i) characteristics of the job - overwork, underwork, difficult tasks, safety hazards, shift work, travel;
- (ii) role of the person or job in the organization - role conflict, person-environment fit, role ambiguity, role expectations, responsibility for people;

- (iii) career development - lack of job security, status incongruity, overpromotion, underpromotion, thwarted ambition;
- (iv) climate and structure of the organization - lack of involvement and identification, non-participation in decision-making;
- (v) relationships at work - poor communication or poor relationships with colleagues and/or supervisors; and
- (vi) home-work interface - conflict between private life and work life.

Over the years, many clinical observations have suggested that occupational stress is related to employee health. Research has also found that stressors embedded in the workplace, such as role overload, role conflict, responsibility for people and poor working conditions are related to general physical illness (Kasl and French, 1969; Cherry, 1978), coronary heart disease (Jenkins, 1971; Friedman and Rosenman, 1974; Theorell, 1974; House, 1974; Cooper and Marshall, 1976; Karasek, 1979; House et al., 1979; Alfredson, 1982), and hypertension (Weyer and Hodupp, 1970). Other studies have found relationships between occupational stress and mental disorders (Hinkle, 1973; French and Caplan, 1973; House, 1974; Caplan and Jones, 1975; Cooper and Marshall, 1976; Kasl, 1978; Davidson and Cooper, 1981; Payne et al., 1982), and burnout, a syndrome that is defined as physical, emotional and attitudinal exhaustion (Freudenberger and Pines, 1977; Pines, Aronson and Kafry, 1980; Maslach, 1981). Relationships have also been found between occupational stressors and job related variables such as job performance (Carranza, 1973; Tossel and Froehlich, 1979;

Howard et al., 1981), job satisfaction (Kahn et al., 1964; French and Caplan, 1973; Kasl, 1973; Margolis and Kroes, 1974; Sarason and Johnson, 1979; Abel-Halim, 1982) and absenteeism (French and Caplan, 1973; Kasl, 1973; Margolis and Kroes, 1974).

The only study found that considers occupational stress for women teachers separately from men is one by Syrotuik and D'Arcy (1983). They found that occupational stress was related to both chronic and acute health problems for women teachers but do not report the magnitude of the relationship. A number of other studies, however, have considered occupational stress with teachers generally and with women in other occupations.

Research in the realm of teacher stress is quite recent and most of it has been directed towards isolating and describing specific stressors in the teaching environment and ascertaining the number of teachers who feel that they are under stress (Cichon, 1978; Tracey and Bergex, 1979; Koff et al., 1979; Nash, 1980; Dunham, 1980; Kyriacou, 1980; Saville, 1981; Sweeney, 1981; McMurray, 1981; Friesen and Williams, 1985).

A number of conditions in the teaching profession have been identified as potential stressors. Some of them are unique to teaching while others pertain to any number of occupations. They include: student misbehaviour (Coates and Thoreson, 1974; Kyriacou and Sutcliffe, 1978; Pratt, 1978; Cichon and Koff, 1980; Saville, 1981; Syrotuik and D'Arcy, 1983), time pressures and work overload (Feshback and Campbell, 1978; Kyriacou and Sutcliffe, 1978; Weiskopf, 1980; Saville, 1981; Syrotuik and D'Arcy, 1983; Friesen and Williams, 1985), staff relationships (Lortie, 1975; Pratt, 1978; Saville, 1981; Friesen and

Williams, 1985), poor working conditions (Coates and Thoresen, 1976; Kyriacou and Sutcliffe, 1978, Cichon and Koff, 1980; Dunham, 1980; Saville, 1981), lack of perceived success (Pratt, 1978; Weiskopf, 1980; Cichon and Koff, 1980) emotional demands and responsibility for children (Weiskopf, 1980), contradictory roles (Grace, 1972; Philipps and Lee, 1980; Bensky et al., 1980; Schwab and Iwanicki, 1982; Syrotuik and D'Arcy, 1983) and involuntary reassignment (Cichon and Koff, 1980; Saville, 1981).

Very few studies have considered the relationship between occupational stress and dysfunction within the context of teaching. Instead, there has been an assumption that teaching is stressful and therefore harmful and the research has generally been designed to identify stressful conditions so they could be changed (Hiebert, 1985). However, a few studies have found that teaching-related conditions are related to a feeling of being under stress on the part of teachers or to the symptoms of burnout (Cichon, 1978; Pratt, 1978; Cichon and Koff, 1980; Needle et al., 1981; Saville, 1981; Laffery et al., 1981). Others have found associations with mental health (Pratt, 1978; Needle et al., 1981, Sutton, 1984), physical health (Dunham, 1976; Tung and Koch, 1980; Saville, 1981, Sutton, 1984), job satisfaction (Holdaway, 1978; Kyriacou and Sutcliffe, 1978; Needle et al., 1981; Sutton, 1984) and absenteeism (Dunham, 1976; Elliott and Manlove, 1977; Maslach and Jackson, 1981).

Although some relationships have been found between teacher stress and various kinds of dysfunction, there are many conflicting reports about the extent of teacher stress. In a National Education Survey done in 1976, 78% of the teachers reported moderate to considerable levels of

stress. Wilson (1979, in Truch, 1980) found that 77% of his sample said that the physical signs of stress were present much of the time. Sparks (1979) reports that 75% of his sample found their jobs to be, to a large extent, stressful. On the other hand, Kyriacou and Sutcliffe (1978) report that only 20% of their sample found teaching very stressful or stressful. Bensky et al. (1980) found only 33% of their sample had even mild to moderate emotional symptoms. In the work of Feitlar and Tokar (1982) only 16% indicated that teaching was very or extremely stressful. These discrepancies may result from real differences in different populations of teachers, from the timing the data collection or from differences in the indicators of stressfulness that were used. Whatever the reason, there is no agreement about the extent of teacher stress. This suggests the need to examine this issue for the particular population under study.

There are few studies comparing teachers with other occupational groups, but those that exist suggest that stress is not necessarily more prevalent in teachers than in other occupational groups (Bentz et al., 1971; Kyriacou, 1980; Syrotuik and D'Arcy, 1983; Hiebert, 1985).

The number of women who are working is steadily increasing (Sexton, 1976; Nadelson, 1980; Cooper, 1981; Statistics Canada, 1982, 1985) and, although more women are entering non-traditional jobs and leadership positions, most are employed in traditionally female occupations, including elementary school teaching.

Stress for working women can arise from the work environment, the home environment and from the interface between work and home. The stressors in the work environment are as many and as varied as the jobs they hold. However, because of the limited roles that women play in the

employment world, they are often in positions that are potentially stressful because they have little control over decision-making, little opportunity for advancement and take responsibility for the welfare of others (Pines et al., 1980; Hall and Hall, 1980; Cooper, 1981; deKoninck, 1984). There is also some evidence that there are some work stressors unique to women, most notably the requirements of the home-work interface (Cooper and Davidson, 1982). In the home, most working women continue to have major responsibility for the household and child-rearing responsibilities with the unending demands that are associated with these roles (Pearlin, 1975; Stellman, 1977; Madelson, 1980; deKoninck, 1984). Because of their active involvement in both work and home, more and more women are engaged in a dual career, that of ~~employee~~ and that of wife and mother. Role overload can result because of the volume of tasks to be done (Stellman, 1977; Hall and Hall, 1980; Hollander et al., 1982; Greenglass, 1985). Since they must make child-care arrangements and attend to family affairs, there may be additional kinds of stressors for working women than would generally be considered in an assessment of occupational stressors. Finally, the work-home interface can involve role conflict as women try to balance the obligations of the two roles (Rapoport and Rapoport, 1976; Johnson and Johnson, 1977; Pines et al., 1980; Waldron, 1980; Hall and Hall, 1980; Greenglass, 1985).

Only a very few studies have investigated the relationships of stressors for working women and any health or job-related variables. There is, however, some evidence that stress for working women is related to physical health (Haynes and Feinleib, 1980; Rockwell et al., 1981); mental health (Radloff, 1975) and job satisfaction (Applebaum,

1981). Some studies have suggested that multiple roles have a positive relationship with health (Thoits, 1983; Verbrugge, 1983; Kandel et al., 1985). Kandel et al. (1985) found that working women report more occupational stressors than household ones but when household stressors occurred, they had more severe consequences for psychological well-being.

Although occupational stressors are consistently found to be related to physical and mental dysfunction and to job-related conditions such as dissatisfaction, performance and absenteeism, occupational stress generally accounts for less than 10% of the variance in dysfunction (Billings and Moos, 1982). This poor predictive ability has led researchers to expand the occupational stress-dysfunction model by including other constructs with occupational stress that may increase the explanatory power of the model and to refine conceptualization and measurement of work stress in particular occupations (House, 1974; Gowler and Legge, 1975; Cherry, 1978; House et al., 1979; Schuler, 1982). Teacher stress researchers and researchers with women are also beginning to consider an expanded stress model involving both environmental and personal factors to better explain the relationships between the conditions of teaching and health and job-specific variables (Gump, 1975; Kyriacou and Sutcliffe, 1978; Guttentag, 1980; Sutton, 1984; Greenglass, 1985).

2.1.2. DYSFUNCTION - HEALTH STATUS AND JOB-SPECIFIC CONDITIONS

The kinds of dependent measures considered in stress research are extensive and varied, ranging from sleep disturbances to coronary heart

disease. Research has confirmed relationships between stress and these varied health conditions. Although there are many studies that suggest a relationship between stress and illness, it is obvious that illness and/or disease do not appear immediately upon exposure to stressors.

It is possible to distinguish several levels or stages of health status from the immediate and short-lived feeling of being 'under stress' which includes such symptoms as butterflies in the stomach, dry throat, headache, increased heart rate and sweaty palms to 'burnout' symptoms such as insomnia, diarrhea, constipation, chronic headache, fatigue, malaise, short-temperedness and mild depression and finally tissue damage or permanent changes in body functioning such as ulcers, coronary heart disease and depression.

For the most part, the relationship of stress to the less severe kind of health problems is stronger than it is for those that are more severe (House et al., 1979; Burke et al., 1981).

There has also been considerable attention to the relationship of occupational stress to job related outcomes like job satisfaction, job performance, absence from work and employee turnover (Sarason and Johnson, 1979).

For teachers, researchers have begun to consider a range of health problems from sleep disturbances (Dunbar, 1976) to infertility (Stevens, 1983). The dependent measures that are most often considered in teacher stress research are burnout (Bloch, 1973; Truch, 1980), job satisfaction (Holdaway, 1978; Kyriacou and Sutcliffe, 1979), and absenteeism (Dunham, 1976; Kyriacou and Sutcliffe, 1979). Hiebert and Farber (1984), in a review of the teacher stress literature, conclude that there is a paucity of studies that describe any health consequences associated with

teaching and none to suggest that teaching produces specific stress-related symptomatology.

Women generally have higher morbidity and lower mortality rates than men (McMahon and Pugh, 1970; Mechanic, 1976; Waldron, 1976; Nathanson, 1975, 1977). These differences could occur either because women admit more readily to illness (Broverman, 1970) or because they experience a higher incidence of less fatal illnesses (Verbrugge, 1976).

There are also some well documented sex differences in rates of specific illnesses. Women tend to suffer more from symptoms of psychoneurosis, anxiety, depression and burnout (McMahon and Pugh, 1970; Gove and Tudor, 1973; Pearlin, 1975; Dohrenwend and Dohrenwend, 1979; Miller and Ingham, 1979; Roberts and O'Keefe, 1981; Pines and Kafry, 1981; Cooper and Melhuish, 1984, Statistics Canada, 1985) and women use health services more often than men (D'Arcy and Schmitz, 1979, Statistics Canada, 1985). Women tend to be somewhat more satisfied with their work than men (Agassi, 1982) but they are absent more often (Jenkins, 1980; Marcus and Seeman, 1981).

Among women, health is associated with a number of other factors. Women who are employed have better mental health than unemployed women (Nathanson, 1975; Gove and Geerken, 1977; Wheeler et al., 1983; Verbrugge, 1983, Statistics Canada, 1985) but they have higher levels of type A behaviour and heart disease (Chesney and Rosenman, 1980; Davidson et al., 1980; Haynes and Feinleib, 1980). Married working women have poorer mental health than single ones (Radloff, 1975; Wheeler et al., 1983; Verbrugge, 1983) even though married women generally have better mental health than single women (Kandel et al., 1985). The evidence for presence of children is mixed. Some studies say it is associated with

good mental health and job satisfaction (Verbrugge, 1983) while others report increased symptoms and less job satisfaction for women with children (Bøve and Geerken, 1977; Haynes and Feinleib, 1980; Ayassi, 1982).

2.2 PERSONALITY TRAITS

No studies were found that examined occupational stress and personality traits for women teachers specifically. However, a number of personality traits have been suggested as contributors to a person's vulnerability or to a person's responses to stressful conditions.

The set of personality traits including anxiety-proneness, neuroticism, and emotional lability have been shown to be related to angina pectoris (Medalie and Goldbourt, 1976), level of perceived distress (Janis and Leventhal, 1966; Cherry, 1978), mental health (Andrews, 1981; Henderson and Byrne, 1982; Endler and Edwards, 1982; Sommers and Lasry, 1984), hypertension (Weyer and Hedopp, 1979) and health problems (Denney and Frisch, 1981).

Kobasa (1979, 1981, 1982) has described the hardy or stress-resistant personality as committed, believing in his/her own control and open to challenge. Her studies have shown that hardiness is related to the number and severity of illness reports (Kobasa, 1979, 1981, 1982).

The Type A coronary prone personality (impatient, competitive, aggressive) has received considerable attention. This multi-faceted personality type has been found to be particularly vulnerable to heart disease (Friedman and Rosenman, 1974; Caplan and Jones, 1975; Jenkins et

al., 1976; Glass, 1977; Howard, Cunningham and Reznitzer, 1978; Blumenthal, 1978; Goldband, 1979; Rosenman and Chesney, 1980).

The personality trait of self-esteem or ego strength has also been investigated in relation to the stress process. It arose out of observations that individuals who remained healthy in prison camps were those who maintained a sense of self-worth (Eitinger, 1973). Several studies have found that self-esteem is related to stress reactions (House, 1981; Pearlin et al., 1981), to heart disease (House, 1972), and to depression (Cronkite and Moos, 1984).

The work on such related areas as locus of control, mastery, learned helplessness and fatalism suggest that personal control or the illusion of control are related to performance (Perlmutter and Monty, 1977), level of perceived distress (Lazarus, 1966; McFarlane, 1983), depression (Johnson and Sarason, 1978; Seligman, 1975) and health problems (Denney and Frisch, 1981).

The role of personality variables in the occupational stress experienced by teachers has not been widely investigated. Kyriacou and Sutcliffe (1979) found a relationship between locus of control and a feeling of being under stress. McIntyre (1981, in Schwab, 1982) found teachers with external locus of control evidenced more feelings of burnout. Pratt (1976, in Kyriacou, 1981) found, for teachers, a relationship between neuroticism and experienced stress. Coates and Thoreson (1976) report that teacher anxiety is detrimental to teachers and to their students. Syrotuik and D'Arcy (1983) found that both mastery and type A personality were related to job stress for teachers.

Little research has considered the relationship of stress and personality specifically for women. Several researchers have reported

that type A behaviour is more predominant for working women and that there is a relationship between type A personality and both mental and physical health for women (Waldron, 1977; Davidson et al., 1980; Chesney and Rosenman, 1980; Haynes and Feinleib, 1980; Cooper, 1981). No studies were found investigating any other aspects of personality for women in relation to the stress process.

A few studies have investigated the nature of the joint relationship of stress and personality with dysfunction. Garrity et al. (1977) investigated the relationship of three personality variables (social conformity, liberal intellectualism and emotional sensitivity) and the amount of life change, with perceived level of stress and health outcomes for college freshman. They used regression analyses to establish relationships and to examine the impact of personality when life change was controlled. They concluded that personality factors had their influence on health status through their effects on both life change and perceived level of stress but added very little to the explanation of health status directly. The buffering or exacerbating effects of any of these personality traits were not investigated in this study.

Keenan and McBain (1979) investigated the relationship of three personality variables (type A, intolerance of ambiguity and locus of control) to role stress and job dissatisfaction with 90 middle managers. They tested for moderating effects by splitting the scores in each personality scale at the median to establish high and low groups and correlated role stress and job dissatisfaction separately for the high and low groups for each personality variable. They found no evidence that there were any differences between high and low groups for

either type-A personality or locus of control but the correlation was significantly higher in the intolerance of ambiguity group.

Hong et al. (1979) studied the influence of the personality scales in the California Personality Inventory (CPI) on the stress-illness relationship in a sample of 73 male medical students. They divided their subjects into low and high stress group and into low and high illness groups and compared their CPI scores. They found that personality traits were not markedly different between high and low illness group but several of the personality traits did differentiate low from high stress groups. They concluded that personality might contribute indirectly to illness through its relationship with life stress.

Kobasa (1981) proposed a hardy personality style and used a prospective design to investigate the mediating effects of personality-based hardiness on the stressful life events-illness relationship with a group of executives. She split all of the independent variables at the median to produce high and low categories and used analysis of variance techniques to test for main effects and interactions. Only the main effects were significant in the analyses, suggesting that hardiness and stressful events have an additive effect with regard to illness.

Wheaton (1982) investigated how the personality traits of fatalism and inflexibility changed the relationship of stress with depression in two groups - Anglos and Mexican-Americans in southwest Texas. He used regression analysis including a multiplicative interaction term and found some evidence for moderating effects of both personality traits.

Arsenault and Dolan (1983) investigated the mediating effects of two personality variables (striver-achiever and locus of control) on the relationship of job stress with perceived performance and absenteeism for 1200 hospital workers. They used regression analysis to examine the relationships of the dependent measures to occupational stress at different levels of a combined index of the two personality measures, based on median splits of both variables. They found that personality had a significant effect on performance but not absenteeism and they found a significant interaction between job stress and personality types for both outcomes.

Sommer and Lasry (1984) proposed that subjects who differ in their mental and physical health reactions to unemployment might exhibit different personality characteristics. They assessed this with 101 males by identifying two groups of subjects based on their stress and illness scores (high stress/high illness and high stress/low illness) and comparing their scores on the MMPI. Only the depression subscale differentiated between these groups.

It is clear from these few studies that researchers are beginning to examine the relationship of personality traits to the stress-dysfunction relationship. The results from these studies, however, are not consistent and neither are the research design or analysis strategies. Further research is required to systematically investigate the nature of these relationships.

There are many potential personality traits that warrant investigation. However, the personality traits that have been considered in these studies have not always been ones that might be most appropriate to the target populations. They should be selected because

of their logical connection to the particular population and to the kinds of stress and dysfunction being investigated.

2.3 COPING

Coping is a complex multi-dimensional construct that has become a catch-word for many activities and processes. Mechanic (1970, in McGrath), defines coping as instrumental behaviour and capacities for meeting life's demands and goals. Hembling and Adams (1967) and Sarason (1980) see coping as seeking and utilizing information. Lazarus (1966) and Folkman (1982) regard coping as problem-solving efforts made by an individual when the demands one faces are highly relevant to one's welfare and when these demands tax one's adaptive resources. Pearlin and Schooler (1978) conceptualize coping as any response to situational life stressors that serves to prevent, avoid or control emotional distress. Ilfeld (1980) defines coping as attempts by an individual to resolve life stressors and emotional pain using both active and cognitive processes.

Coping strategies can occur in response to unusual events or day-to-day events. (Folkman and Lazarus, 1980). They can operate retrospectively to remove existing stress or prospectively to prevent future stress (Cooper and Marshall, 1978). They can take place with or without conscious intent (Ilfeld, 1980; Yaillant, 1977; Haan, 1977). They can be active or passive. They can be adaptive or maladaptive (Miller and Ingham, 1939; Pearlin and Radabaugh, 1976; Margolis et al., 1974; Selye, 1976; Davidson and Veno, 1980; Conway et al., 1981). They can involve direct action in which an individual tries to alter or

master the troubled commerce with the environment, or palliative activities in which a person attempts to control the emotion being felt or its symptomatic correlates without addressing the stressful situation itself (Lazarus, 1974; Pearlin and Schooler, 1978; Dewe et al., 1978; Ilfeld, 1980). They may be determined primarily by person variables or be situation specific (Folkman and Lazarus, 1980; Ilfeld, 1980).

The lack of clarity in definition and the fact that coping strategies are multidimensional, do not occur in isolation and are not static, has meant that much of the research work has been aimed at conceptualizing, operationalizing and measuring coping (Sidle et al., 1969; Moos, 1976; Pearlin and Schooler, 1978; Dewe et al., 1978; Ilfeld, 1980; Folkman and Lazarus, 1980; Billings and Moos, 1981; Holroyd and Lazarus, 1982; Lindop and Gibson, 1982).

This exploration has led to several classifications of coping strategies and to increasingly detailed theories about the nature of coping (Moos, 1976; Haan, 1977; Lazarus and Launier, 1978; Pearlin and Schooler, 1978; Ilfeld, 1980; Coyne and Lazarus, 1980; Billings and Moos, 1981; Moos and Billings, 1982; Folkman, 1982). However, no generally accepted classification scheme or theory has yet emerged. Even though there is a growing conviction that how one copes is a pivotal issue in understanding the stress process, the difficulties of conceptualization and measurement have hampered study of the mediating role of coping behaviour (House, 1979; Miller and Ingham, 1979; Folkman and Lazarus, 1980; Billings and Moos, 1981; Folkman, 1982).

Coping with work stress has been the focus of many books and documents providing advice about how to manage or handle job stress (Gross, 1976; Greenburg and Valletutti, 1980; Cherniss, 1980; Howard et.

al., 1981). The strategies suggested can range from individual techniques for coping with occupational stress to elaborate organizational solutions. Although many of the techniques have an aura of face validity, claims made about their effectiveness are almost all speculation based on author opinion with little empirical evidence to support them (Newman and Beehr, 1979; Burke and Weir, 1980).

No studies were found assessing stress and coping for women teachers, but there are some studies with teachers generally and with women in other situations. There are also studies of coping for other populations and in other work settings.

Most of the research investigating coping with teachers has explored the coping strategies that teachers use (Dixon et al., 1980; Tung and Koch, 1980; Kyriacou, 1980; Truch, 1980; Needle et al., 1981; Gmelch, 1983; Cassie and Lewandowski, 1983; Bartz and Neiveem, 1984). Only one study was found that related coping to dysfunction and it found that teachers who maximize the positive and trivialized the negative aspects of work have fewer symptoms and a better general feeling of well-being (Needle et al., 1981).

Very few studies have examined the coping styles or strategies of women specifically. Several studies show differences in coping style between men and women. Women are more likely to use emotion-focussed rather than direct action coping strategies (Pearlin and Schooler, 1978; Folkman and Lazarus, 1980; Stone and Neale, 1984). There is also some suggestion that the mechanisms that women use are less effective (Pearlin and Schooler, 1978; Kessler, 1979; Billings and Moos, 1981; 1984).

A few studies have found relationships between coping effectiveness and dysfunction (Spilken and Jacobs, 1971; Andrews et al., 1978; Pearlin and Schooler, 1978; Billings and Moos, 1981, 1984; Caplan et al., 1984). Some others have considered the relationship of different kinds of coping strategies or of coping styles with dysfunction and have found that different responses and styles were more efficacious in some role areas than in others (Pearlin and Schooler, 1978; Ilfeld, 1980; Folkman and Lazarus, 1980).

Coping research in work settings has generally been directed at describing how individuals cope with work stress (Kahn et al., 1964; Burke and Belcourt, 1974; Howard et al., 1975; Dewe et al., 1978; Menaghan and Merves, 1984). A few studies have assessed the differential effectiveness of coping strategies in work settings for reducing distress (Pearlin and Schooler, 1978; Folkman and Lazarus, 1980; Needle et al., 1981; Menaghan and Merves, 1984).

Very recently investigators have considered the joint relationship of occupational stress and coping with dysfunction.

Pearlin and Schooler (1978) identified 17 coping patterns that people reported using in various roles. These factors fell into three categories (responses that modify the situation, responses that control the meaning and management strategies). They used stepwise multiple regression to assess the reduction in the regression of role stress on dysfunction as coping responses were added. They found that coping reduced the relationship of roles stress to dysfunction in marriage, parental and economic roles but not in the occupational role.

Andrews et al. (1978) examined the relationship of maturity of coping style to the life stress-impairment relationship in a

representative community sample. They split the sample at the mean into high and low groups on both stress and coping and, using chi-squared tests, found that both of these variables were related to impairment. However, an examination of the chi-squared interactions did not reveal any buffering effect of coping style.

Billings and Moos (1981) considered the relationship of coping to stress and depression in a representative adult sample by examining the change in the regression coefficient for stress when coping was controlled. They found evidence that coping attenuated the relationship between life stress and functioning but did not examine the interactions directly. In a later study, Billings and Moos (1984) investigated stress and several indices of coping among 424 men and women entering treatment for depression. They used multiple regression with stressors entered first, followed by coping, followed by the multiplicative interaction terms. Coping was found to have a significant direct relationship with dysfunction but, because the interaction was not significant, there was no evidence for a buffering effect.

Caplan et al. (1984) examined how coping affects the relationship between the stress of annual exams and emotional ill-health for 207 undergraduates in India. They also used a regression analysis to test for main effects and interaction effects and found that coping was associated with functioning regardless of level of stress and had no additional moderating effects.

Menaghan and Merves (1984) considered the effect of four kinds of coping in occupational settings (direct action, optimistic comparison, selective ignoring and restricted expectations) on reduction in occupational problems (stressors) and reduction in a feeling of being

under stress from work. They regressed coping on occupational problems, and feelings of being under stress from work on occupational problems and coping, using regression analysis including an interaction term. They found that the level of work problems was higher for two of the coping efforts (selective ignoring and restricted expectations). They also found that level of work problems had a strong positive relationship with feelings of being under stress and two of their coping variables (restricted expectations and pessimistic comparisons) were positively related to feelings of stress. In this study no interaction terms increased explained variance in the dysfunction measure so there is no evidence for buffering or exacerbating effects of coping.

Because the conceptualization and measurement of coping varies considerably across these studies, it is difficult to compare the results. However, it is clear that much needs to be learned about coping patterns and how they operate in a broad range of settings.

2.4 SOCIAL SUPPORT

The role of social support in reducing stress and improving health is one of the rapidly developing topics of investigation in the search for a more complete model of the relationship between stress and illness. Social support, like stress, is a concept that everyone understands in a general sense but it becomes less clear when researchers attempt to operationalize it. Social support represents the resources in the social environment available to an individual through interaction in the social milieu (Sarason, 1980). It has been variously addressed in terms of social bonds (Henderson, 1977; 1980), social

networks (Caplan, 1974; Moss, 1974; Mueller, 1980), meaningful social contracts (Cassel, 1976), availability of confidantes (Brown et al., 1975; Miller and Ingham, 1976; Brown and Harris, 1978; Costello, 1982) and human companionship (Lynch, 1977). While these concepts are not identical, they share in common the experience of being supported by others (Turner, 1981). Although social support may be informational or instrumental and directed towards the fulfillment of some task, the kind of social support that is most often examined is expressive or emotional social support that Cobb (1976) describes as information leading the subject to believe that he is cared for and loved, esteemed, valued and a member of a network of social obligations (Dean and Lin, 1977; House, 1981).

Only one study was found that examined social support for women teachers. Syrotuik and D'Arcy (1983) found that support from peers buffered the effect of some kinds of job stress on job satisfaction and depression. A number of investigators, however, have considered social support for women or for teachers generally and there are many studies of stress and social support in other occupations and in other circumstances than work.

In the few studies that have considered social support for women, the results have suggested that women tend to seek support more often than men (Lieberman, 1982), women's networks have a higher proportion of family and friends while men's are more work-related (McFarlane et al., 1981) and social support is more strongly related to health for women than for men (Miller and Ingham, 1976; Pines, Aronson and Kafry, 1980; Billings and Moos, 1981).

Nuckolls et al. (1972) and Norbeck and Tilden (1983), in their studies of pregnant women, found that social support mitigated pregnancy complications. Henderson et al. (1980) found that social bonds contributed more to the variance in neurosis for women than for men.

A special kind of support for women is the support that is engendered in being married. Because social support is a reflection of intimate interaction with at least one other person, just the fact of being married has often been viewed as an indicator of social support and married women are seen as better supported than unmarried ones (Eaton, 1978, Thoits, 1982). Brown and Harris (1978) and Roy (1978) found that women were protected from depression by an intimate and confiding relationship with a spouse or boyfriend.

For married women, there is also some differentiation of the quality and impact of spousal support. Lieberman (1982) found that the spouse was the key confidante for most people who were married. Vanfossen (1982) found that, for employed wives, depression was associated with unsupportive husbands but D'Arcy and Syrotuik (1984) found that, for women, spousal support was not directly related to mental health nor was it a buffer of job stress on mental health.

Although social support has been suggested as a potential moderator of stressful events for teachers (Needle et al., 1978; Pratt, 1978; Kyriacou, 1981; Moracco and McFadden, 1981), only two studies were found that investigated either general social support or work support in the context of teacher stress. Syrotuik and D'Arcy (1983) found that social support for teachers from both work and non-work sources were related to job satisfaction and mental and physical health outcomes.

However, Sutton (1984) found that social support was not related to dysfunction measures but was related to job satisfaction.

A wide range of more general studies have found that the level of social support is related to both physical and mental health status (Antonovsky, 1974; Cassel, 1976; Dean and Lin, 1977; Andrews et al., 1978; Beckman and Syme, 1979; Lin et al., 1979, 1982; Henderson et al., 1980; Billings and Moos, 1981; Holohan and Moos, 1981).

Work support is a special kind of social support involving the provision of emotional support and instrumental assistance within the work environment by co-workers and/or supervisors. Although clinical observation and research in organizational psychology has suggested that relationships at work can reduce occupational stress and improve worker health, it is only recently that research has focussed specifically on work support. Good relationships at work have been found to be associated with individual and organizational health (McLean, 1974; House, 1974; Cooper and Marshall, 1976, 1978; Maslach and Pines, 1976; LaRocca et al., 1980; Pines, Aronson and Kafry, 1980). Several studies have found a relationship between support from co-workers and supervisors and absenteeism, productivity and job satisfaction (House, 1981; Abdel-Halim, 1982).

Since Sidney Cobb suggested, in his 1976 presidential address to the American Psychosomatic Society, that social support may be a moderator of life stress, it has emerged as the variable that has been examined most often with stress to assess the nature of the joint relationship on various kinds of dysfunction. Consequently, it has also

been the focus of much of the recent theoretical and methodological literature concerned with studying these kinds of relationships.

Andrews et al. (1978) examined life stress, three kinds of social support (crisis support, neighbourhood interaction, community participation) and psychological impairment in a general community sample (N=863). They split the sample at the mean for both life stress and the social support variables and found, using the chi-squared statistic, that only crisis support was related to impairment and social support did not show any mediating effect on the relationship between stress and impairment.

Gore (1978) investigated the relationship of social support from wife, friends and relatives to health among the unemployed. She divided the sample into supported and unsupported groups and compared their dysfunction levels. Although she concluded that low social support exacerbated the effect of unemployment, it is difficult to assess this conclusion from the data presented.

House and Wells (1978) studied occupational stress, social support from four sources (supervisors, wives, co-workers, and friends) and health in factory workers. They used regression analysis to test whether the multiplicative product of stress and support contributed to health outcomes after the net additive effects were entered. They found evidence that social support buffered the stress-dysfunction relationship (21 of the 35 relationships examined had significant interactions in the appropriate direction). Supervisor support and wife support seemed to buffer the stress-dysfunction relationship but coworker and friend support did not.

Lin et al. (1979) investigated the role of general social support and stressors in illness with a sample of Chinese-American adults. They used multiple regression and found that both life events and social support were important in explaining psychiatric symptoms. When the group was trichotomized for both of these variables and compared using a series of t-tests they found that when stress level was high or low, the low support group experienced more symptoms than the medium support group. Social support had no effect on symptoms when stress level was medium. However, an analysis of covariance with marital status and occupational prestige as covariates failed to obtain any interaction effect between stress and support.

LaRocco et al. (1980) considered occupational stress, four kinds of social support (supervisors, coworkers, wives and friends) and health using the same regression technique (moderated regression) as House and Wells (1978). In this case, because some stresses may show a curvilinear relationship with dysfunction a squared term representing the quadratic of the stress score and an interaction term for that term were also added. Like House and Wells, they found evidence (16 of the 36 interactions examined were significant) that some kinds of support appear to buffer the effects of job stress in mental health. In this case, co-worker support had a more important buffering effect than supervisor or home support. They did not find any evidence that social support buffers the relationship of job stress to job satisfaction.

Turner (1981), in a longitudinal study of new mothers, trichotomized on stress level and examined the relationship between support and well being. He found that social support from volunteers was related to well-being independent of stress level but, when the sample was again divided on social class, social support was important across levels of stress for the middle and upper class but was only important at high levels of stress for the lower class.

Williams et al. (1981) tested hypotheses about the role of social support in modifying the relationship of life stress to mental health in a longitudinal study with a general population sample of 2 234 people. They used moderated regression analysis and found that both life events and social support were related to mental health and, although the interactions had coefficients in the hypothesized direction, they were not statistically significant. These results were consistent with a simple additive model.

Bell et al. (1982), using data from 2 029 randomly selected adults, examined the relationships among depressive symptoms, general social support, stressful life events and SES. Direct, independent effects were found for social support, life events and SES. When the data were analyzed via 3-way analysis of variance and multiple regression, including all possible interaction terms, no interaction terms were significant.

Thoits (1982) used longitudinal data from 720 randomly selected adults to assess life stress, four kinds of social support (close friends, neighbours, meetings, church) and psychological vulnerability over time. The joint occurrence of stress and support was represented by an interaction term and added to the regression of psychological

impairment on stress at time 1 and time 2, social support and psychological impairment at time 1. She found that both social support and life stress were related to mental health but very few buffering coefficients were significant.

Aneshensel and Frerichs (1982) assessed causal relationships among stress, social support and depression using data collected at four points in time over one year, from a community sample of 740 adults. They used causal modelling and found stress increased the level of depression and social support had direct negative effects on current depression and indirect effects on subsequent depression. Their results were consistent with social support having a direct effect but did not negate an interaction effect.

Abdel-Halem (1982) examined the buffering effects of two social support variables (coworkers and supervisor) on the relationships of occupational stress to job satisfaction and job anxiety with 89 managers in industry. He used the moderated regression technique and found significant interactions. These results were in the predicted direction for job satisfaction. Individuals with strong support and high conflict were more satisfied than those with low support. Contrary to prediction individuals with high support had higher job anxiety than those with low support.

Billings and Moos (1982) investigated work stressors, work and family resources and depression, anxiety and physical symptoms for men and women separately. They found, for women, that work stress was related to depression but not to the other indices of functioning. Family resources had a direct, negative relationship with depression and work resources were not related. For men, both kinds of support were

related to depression. There was no evidence of a buffering effect for either sex assessed by observing the extent to which the coefficient for stress in a regression analysis is reduced when the support variables were added.

Syrotuik and D'Arcy (1983) assessed the direct and moderating effect of social support on several kinds of job stress (job/non-job conflict, job future ambiguity, job role conflict) and depression with men and women teachers. They do not describe their analysis approach but indicate that, for men, support from peers does buffer job/non-job conflict and depression and, for women, it buffers job future ambiguity and depression. By inference, it appears that support does not buffer the other relationships tested.

Norbeck et al. (1983) used the moderated multiple regression analysis to explore the relationship of life stress and social support on pregnancy complications with 117 women. They found that life stress was related to several kinds of complications and that the buffering hypothesis was partially supported because the interaction of life stress and social support was significant in some of the analyses.

Seers et al. (1983) examined the relationship of two kinds of job stress (role ambiguity and role conflict) and social support to job satisfaction, using moderated multiple regression. They found, for role ambiguity, the results were consistent with the independent effects hypothesis. For role conflict, however, support moderated the prediction of satisfaction. In these cases role stress was negatively related to satisfaction for those lacking support but unrelated for those experiencing support.

It is obvious that there is considerable disagreement about how social support affects the stress-dysfunction relationship. While the mediating role of social support has been extensively suggested, the research evidence for such a relation has so far been partial at best (Lin et al., 1979). In many of the studies only selected values of the variables were involved in the analysis but their generalizability to the relationship covering the entire range of values for the variables is unknown. Some of these studies only focus on individuals under stress. Without the presence of a low-stress condition they cannot be valid tests of the buffering hypothesis. The fact that some of the studies employing the same analysis strategy and many similar measurements yield different results is perplexing. These differences may result from differences in subject populations. It is also possible that social support may buffer some stress-dysfunction relationships and not others or support from different sources may operate differently. These seeming contradictions led Thoits (1982) to conclude that:

The results of recent studies testing for buffering effects, direct effects or both kinds of effects remain inconclusive and continued attention is required to clarify both concepts and operational definitions in this domain.

2.5 LIFE STRESS

Most investigations of occupational stress ignore or make only passing reference to stressful conditions arising from outside the work

milieu. Cooper and Marshall (1978) drew attention to this oversight and made a plea for considering life stress as an integral part of occupational stress research. Their position was based on the inevitable interdependence of work and home and on a recognition that life stress is related to dysfunction of all kinds. Innumerable studies have shown a relationship between life stress and dysfunction ranging from cancer (Horne and Picard, 1979; Jacob and Charles, 1980) to pregnancy complications (Nuckolls et al., 1972; Gorsuch and Key, 1974; Norbeck and Tilden, 1983), depression (Brown et al., 1973; Paykel, 1974; Markush and Favero, 1974), teaching effectiveness (Carranza, 1972) and job satisfaction (Sarason and Johnson, 1979). Many of the studies cited in the previous three sections examined life stress not occupational stress in combination with personality traits, coping, and social support (Garrity et al., 1977; Andrews et al., 1978; Kobasa, 1981; Billings and Moos, 1981; Wheaton, 1982; Thoits, 1982).

Like occupational stress, life stress accounts for less than 10% of the variance in measures of physical and mental dysfunction (Markush and Favero, 1974; Gersten et al., 1974; Rabkin and Struening, 1979). Even so, it is important to consider life stress in an investigation of occupational stress to assess their joint contribution.

Only one study was found that investigated these variables at the same time. Sarason and Johnson (1979) considered their relationship on job satisfaction in a sample of 44 male naval personnel. They examined only correlations and concluded that both life stress and occupational stress were related to lower job satisfaction. They did not assess the joint effects of these variables.

2.6 INVESTIGATIONS OF SEVERAL MEDIATING VARIABLES AT A TIME

In the last few years researchers have begun to examine the combined relationship of more than one of these potential mediating variables to the stress-dysfunction relationship. Pearlin et al. (1981) used longitudinal data to investigate the relationship of life stress, self-concept, coping and social support to depression. They found that, when taken together, life stress, coping, self-esteem change and mastery change were all related to depression, but social support was not. Coping had a modest interactive relationship.

Kobasa (1982) described a study of stress, personality and social support among 157 lawyers. She used regression analysis and found stress and hardiness were related to dysfunction. Social support had only a barely significant relationship after stress and hardiness were controlled and this was in the opposite direction to that suggested by the social support literature.

In another study with 154 executives, reported in the same paper, Kobasa used a series of 3-way analyses of variance to investigate life stress, two kinds of social support, hardiness and illness. She found consistent main effects for life stress and hardiness. Family support had a 2-way interaction with hardiness and 3-way interaction with stress and hardiness. Work support was only significant in an interaction with life stress.

Cohen et al. (1982) examined the relationship between stress and well-being within the context of social support and individual belief systems in an urban sample. They used a moderated step-wise regression

analysis and found that stress, support and belief systems were directly related to well-being but there was no evidence of any buffering effects.

Dean and Ensel (1982) used path analysis, in a longitudinal study, to consider the relationship of life events, social support and personal competence to depressive symptoms. Social support was found to be the most significant predictor of depression. Both life events and competence were also related to depression directly and indirectly through social support. The interaction of life stress and competence was significant but quite modest.

Husaini et al. (1982) examined the possible stress-buffering properties of personal competence and several kinds of social support with regard to depressive symptoms. A moderated regression analysis indicated main effects of life stress, personal competence and social support with depression. The relationship of personal competence was stronger than that of social support. Only four of the 32 interactions tested were significant. However, these interactions all occurred for women and not for men. This provides limited evidence for the stress-buffering effect of both competence and social support for women.

McFarlane et al. (1983) considered stress, health, locus of control and social support in a prospective longitudinal study. They found that stressful events and prior dysfunction were related to subsequent dysfunction but neither social support or locus of control were related as main effects or in interactions.

Cronkite and Moos (1984) used longitudinal data from 267 married couples to examine the interrelationship among predisposing factors (SES, initial functioning), stress, moderating factors (social support,

coping, self-esteem) and subsequent functioning. They found that, for men, prior functioning and avoidance coping were the only significant variables. For women, prior functioning, avoidance coping, spouse's avoidance coping, stress, family support and self-esteem (in this order) were related to dysfunction. They found no significant interactions associated with family support or self-esteem but there was some evidence that avoidance coping amplified the relationship of stress to dysfunction for women.

The results from these few studies emphasize the need to consider these variables in combination with one another. The internal relationships among the independent variables both conceptually and statistically, can change their relationship with dysfunction and alter the interpretation of the results.

2.7 DEMOGRAPHIC VARIABLES AND THE STRESS PROCESS

A substantial amount of research has suggested that there may be differences in stressors, personality, social support, coping or health depending on some sociodemographic characteristics. Sex, age, marital status, socioeconomic status, as well as the number of children at home and rural vs. urban living are all potential confounding variables.

2.7.1. SEX

Sex has been shown to be related to stressors (Gove and Geerken, 1977; Masuda and Holmes, 1978; Syrotuik and D'Arcy, 1983), to social support (McFarlane et al, 1981), to personality traits (Seligman, 1975),

to coping styles (Pearlin and Schooler, 1978), to both physical and mental dysfunction (Gove and Tudor, 1973; Pearlin, 1975, Radloff, 1975, Guttentag et al., 1980), and to job satisfaction (Agassi, 1982). Overall, it appears that the stress process may have a more severe impact on women than on men and that there are differences in the kinds of variables that are important for women.

2.7.2 AGE

Several studies have found that young adults report more stressful events than older ones (Masuda and Holmes, 1978; Pearlin, 1980; Goldberg and Comstock, 1980; McFarlane et al., 1981). Coping responses appear to be moderately related to age (Ilfeld, 1980; McRae, 1982; Billings and Moos, 1984). House (1978) reports that the relationship between social support and health is not affected by age, but McFarlane (1981) found that older people report more helpful networks while younger ones report more extensive networks. Health status, both physical and mental, decreases with age (Selye, 1976; Andrews et al., 1978; McFarlane, 1981). Schwab and Iwanicki (1982) however, found that younger teachers suffer more emotional exhaustion than older ones and Eaton and Kessler (1981) found their younger subjects were more depressed than older ones.

2.7.3 MARITAL STATUS

Some of the research findings for marital status are difficult to interpret because different studies use different marital status categories and because the relationships of marital status with the

stress process are sometimes different for men and women. Most studies suggest that people who are formerly married, or never married are more exposed to, and more highly influenced by stressors (Gove, 1972; Masuda and Holmes, 1978; Kessler, 1979; Goldberg and Comstock, 1980; McFarlane, 1983). Neither coping nor general social support have been found to be related to marital status although being married is often seen as an indicator of social support (Lin et al., 1979; Ilfeld, 1980; Billings and Moos, 1984). Health status, both physical and mental, is poorer for the formerly married and the never married than those who are married (Gove, 1972, 1978; Tessler and Mechanic, 1978). Married women have higher rates of disturbance than married men (Gove, 1972, 1978) and lower rates than single women (Kandel et al., 1985). Both married men and married women are somewhat more satisfied with work than the unmarried (Agassi, 1982).

2.7.4 SOCIOECONOMIC STATUS

Several studies have suggested that the lower classes are not only exposed to more stressors but that comparable events have a more severe impact on low SES groups (Myers et al, 1974; Masuda and Holmes, 1978; Kessler, 1979). Goldberg and Comstock (1980), however, found that high education was associated with more life events. Number and quality of coping responses are related positively to income and education (Pearlin and Schooler, 1978; Billings and Moos, 1984) but Ilfeld (1980) found no relationship between SES and coping style. There is some suggestion that lower SES groups have low access to social supports (Dohrenwend and Dohrenwend, 1970). Numerous studies have found that low SES is

associated with poor mental and physical health (Caplan et al., 1975; Radloff, 1975; Brown, 1975; Dohrenwend, 1980; Eaton and Kessler, 1981).

2.7.5 CHILDREN AT HOME

Although no studies were found that considered associations between the number of children living at home and stressors, coping strategies, support or personality, there are several studies that suggest that having children at home is related to symptoms, especially psychiatric symptoms for working women (Brown, Bhrolcháin, and Harris, 1975; Brown, Harris and Copland, 1977; Gove and Geerken, 1977; Roy, 1978; Mueller, 1980). However, Verbrugge (1983) reports that parenthood is associated with good physical health for working women and Soloman and Bromet (1982) found children at home did not increase the risk of disorder. Agassi (1982) found that working women with children are less often highly satisfied with their work than those without children.

2.7.6 RURAL-URBAN LIVING

As with number of children, there is no evidence that there are relationships between rural-urban living and stressors, support, coping or personality but there is some evidence that there are differences in illness rates. Some of the literature suggests that illness, both mental and physical, is more prevalent in urban areas (Dodge and Martin, 1970; Levine and Scotch, 1970; Eaton and Kessler, 1981) but other studies suggest that the reverse may be true for mental health (Davidson et al., 1981).

2.8 SUMMARY OF LITERATURE

Occupational stress is currently an issue of concern for women elementary school teachers. However, it is clear from the preceding review that this is not a simple issue nor one that is easy to investigate. This review of the literature suggests the need to consider a wide range of stressors, in and out of the workplace, that could be stressful for women teachers. It also suggests that it is important to consider a variety of outcome measures ranging from job satisfaction to chronic physical illness. The results described in literature review point out that how well a woman copes, her personality and the kind and amount of social support available to her can all change the impact of occupational stress. They also draw attention to the potential impact of sociodemographic variables.

The current study included indicators of all of these key constructs to create a more comprehensive picture of the relationship of occupational stress to the health and job satisfaction of women teachers. Because so few of these constructs had been investigated in combination and because there is such a paucity of data for women teachers, this study was an exploratory cross-sectional one designed to describe women teachers in terms of these various constructs and to discover whether relationships that have been found in other studies were supported by these data, especially when several of the constructs were examined together.

CHAPTER 3

THE THEORETICAL MODEL AND RESEARCH QUESTIONS

3.1 THEORETICAL MODEL

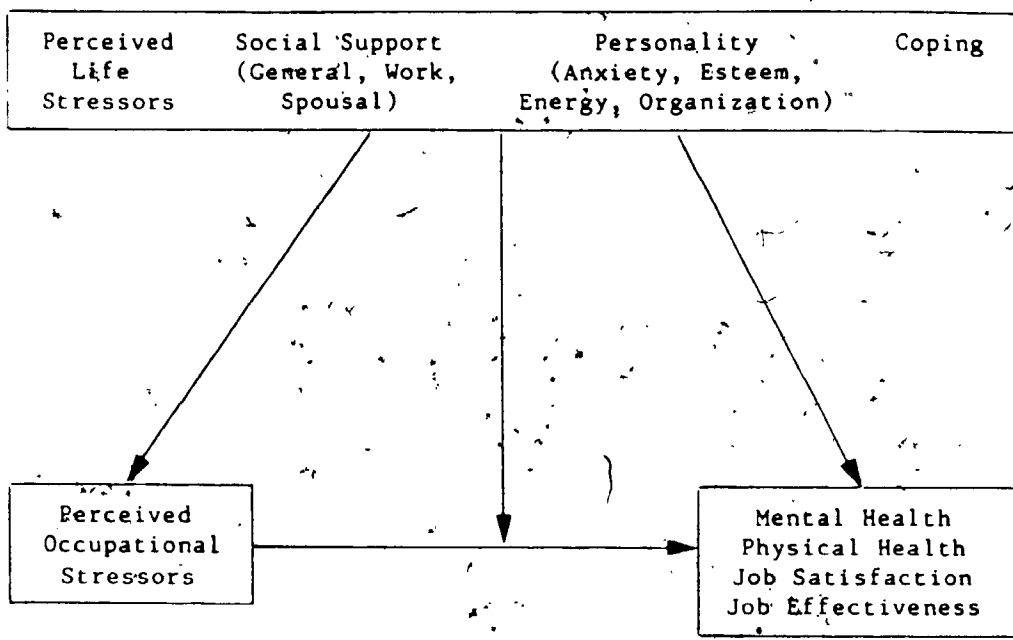
This study is based on an expanded model that tries to take into account not only the relationship of stressful occupational events to illness, job satisfaction and job effectiveness but to also include major life events and other responses and resources available to the individual.

In this study, stress is defined as a complex process that involves the transaction between the individual and the environment. Stressors are events or conditions that exist in the environment. Personality traits, social support and coping are responses or resources available to the individual. Individual functioning is the potential consequence of this transactional process.

The literature review in the prior chapter indicates that personality, coping, and social support have some theoretical or empirical relationship to occupational stress and/or dysfunction. However, few investigations have included the concurrent measurement of these variables necessary to assess their joint effects.

Figure 3.1.1 illustrates the relationships examined in for this study. It is an adaptation of the one presented by Lieberman (1982). The model proposes that occupational stressors are related to mental and physical functioning, as well as absence from school, job satisfaction and job effectiveness. Since people experiencing the same stressful events do not manifest the same type or degree of reaction, the model

FIGURE 3.1.1
STUDY THEORETICAL MODEL



suggests that consideration of personality traits, social support, major life events and coping should improve the explanation of the variance of the scores on the dependent measures.

There are three ways that these additional variables could be involved in the relationships between occupational stress and each of the dependent measures. These are represented by the three arrows. The arrow pointing to occupational stressors suggests that any one of these other variables could act as a preceding factor, modifying the likelihood of the onset of dysfunction by modifying either the likelihood of events occurring or the intensity of the impact of the event. If this is true, there should be a correlation between the other variable and occupational stressors that reduces the relationship between occupational stress and dysfunction.

The arrow pointing directly to the dependent measures represents a direct relationship with dysfunction. This kind of relationship is of interest in understanding the effects of psychosocial variables on dysfunction that do not represent a mediating role of the variable between occupational stress and dysfunction. These effects are additive with occupational stress.

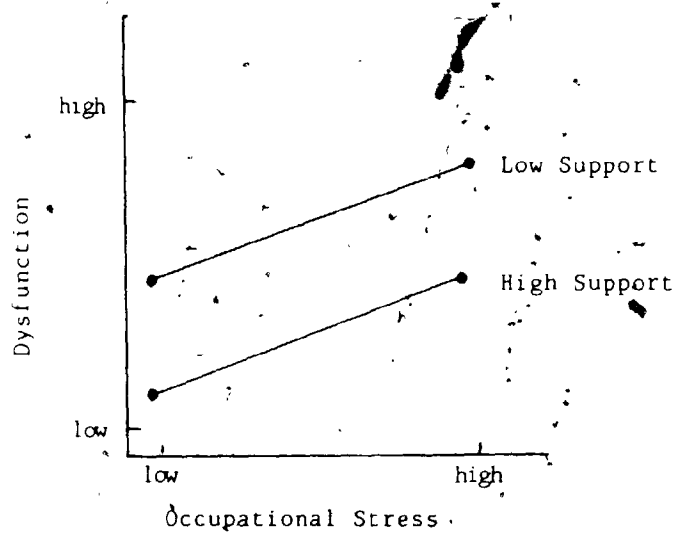
The arrow pointing to the arrow between occupational stressors and the dependent measures suggest that these additional variables may operate interactively by modifying the relationship between occupational stressors and the outcome measures in some conditioning way. A true mediating relationship occurs when the other variable operates as a reactive mechanism in the face of occupational stressors. In this case,

individuals have differential reactive capabilities following the occurrence of stressful occupational events. If some other variable is instrumental in reducing or exacerbating the adverse impact of the occupational stressors, the model is no longer additive, but interactive and it is necessary to show that there are interactions between occupational stressors and the other variable being considered.

Within the framework of a linear regression model, these relationships could be direct ones in which the relationship of the additional variables exist independently of occupational stressors level or interactive relationships where the effect of the additional variable is contingent on the level of occupational stressors. Using social support as an example, if there were a direct effect, occupational stressors would be positively related to dysfunction and social support would be negatively related to dysfunction and their joint effect would be a better predictor of the variance in dysfunction. However, the effect of social support would be the same for all levels of occupational stressors and it could be viewed as a protective condition for people whether they are under stress or not. This kind of relationship is illustrated graphically in Figure 3.2.1. If the effect is direct and additive the lines are parallel. If the effect of the additional variable is contingent on the level of stress, the relationship is interactive, meaning that (again using social support as an example) for low levels of occupational stressors, the level of social support is not important but when stress levels are high, high social support operates to buffer or moderate the occupational stressors effects. This suggests that, when occupational stressors are high,

FIGURE 3.2.1

GRAPHIC REPRESENTATION OF A DIRECT EFFECT OF OCCUPATIONAL STRESS AND SOCIAL SUPPORT WITH DYSFUNCTION



social support would be mobilized to provide its protective effect but it would have no effect when occupational stressors are low. This relationship is illustrated graphically in Figure 3.3.1 where the lines are not parallel but move towards a point of intersection. This study examines these competing views of direct or interacting effects when each additional variable is entered into the model.

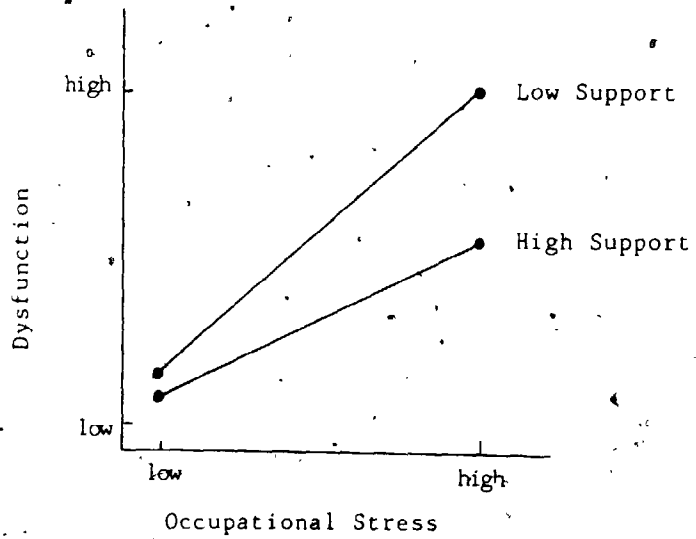
The literature review describes considerable research that has investigated whether the effect of these other variables (personality, coping, social support, life stress) on the stress-dysfunction process are direct or conditional. A number of these investigations have shown an independent effect of one or other of these variables (Andrews et al., 1978; Lin et al., 1979; Kobasa et al., 1981; Turner, 1981) but it has been more difficult to demonstrate the significant interaction between stress and these other variables that is a prerequisite for the moderating role (McFarlane, 1983).

The literature suggests that occupational stress should be related to all of the dependent measures but its relationship should be stronger for job satisfaction, job effectiveness, and mental health than for physical health or behavioural outcomes like absence from school or seeking treatment (House and Wells, 1978; House et al., 1979; Larocca et al., 1980; Burkē et al., 1981).

The impact of occupational stress on the outcome variables in some cases should be ameliorated by the existence of the other variables (eg. social support, effective coping). In other cases, the impact should be more pronounced with the addition of other variables (eg. anxiety-proneness, life stress).

FIGURE 3.3.1

GRAPHIC REPRESENTATION OF AN INTERACTIVE EFFECT OF OCCUPATIONAL STRESS AND SOCIAL SUPPORT WITH DYSFUNCTION



It is also possible to conceptualize this model as one in which many of the relationships could be bi-directional (eg., illness could increase stressful conditions, personality traits could affect coping effectiveness, or the amount of available support). In fact, a transactional or process model focuses on reciprocal causation, in which the environment influences the person and the person is an active agent in influencing the environment (Laux and Vossel, 1982). However, since this is a cross-sectional study, it is not possible to establish causal relationships. Instead, this model is a guide to help formulate questions about the associations that are examined in this study.

3.2 RESEARCH QUESTIONS

This study includes two separate parts. The first one is essentially descriptive and poses the following questions:

- (1) What occupational events or conditions do women elementary school teachers find stressful?
- (2) What coping strategies do they use and find effective?
- (3) How well supported are they generally and at work?
- (4) How do they score on measures of selected personality traits?
- (5) What life events have an impact on them?
- (6) What is their level of mental and physical health, job satisfaction and perceived job effectiveness?
- (7) Do women teachers differ in their level of occupational stress, coping, support, personality, or life stress according to marital status or marital status/child care categories?

The second part involves examining the relationships between occupational stress and physical and mental dysfunction, job satisfaction and perceived job effectiveness in the context of a more complete model. The specific research questions that arise from the literature and the theoretical model are:

- (1) Are occupational stressors related to any of the physical, and psychological functioning, job satisfaction and job effectiveness measures for women elementary school teachers?
- (2) Are occupational stressors related to the dependent measures when coping, personality, social support or major life events, are controlled singly?
- (3) What is the joint relationship of occupational stressors and each of coping, personality, social support and major life events, with the dependent measures? Is the joint relationship additive or is the relationship of the other variable contingent on the level of occupational stressors?
- (4) What is the relationship of occupational stressors with the dependent measures when all other variables in the model are controlled at the same time?
- (5) What is the relative importance of each of the variables in the model when the rest are controlled?

CHAPTER 4

QUESTIONNAIRE DEVELOPMENT

4.1 OVERVIEW

Once the theoretical model was formulated, instruments were located or designed to measure all of the major constructs by reviewing the literature and by engaging with women teachers in a 'focus group'. Since new instruments were developed for two constructs, namely, occupational stressors and coping strategies, they were included in a pre-pilot questionnaire and given to a small group of women teachers to review.

The full questionnaire was assembled for a pilot study, to test the instruments and the instructions; to assess the reliability, validity and clarity of the instruments; and to help design data collection procedures for the main study. The results of the pilot study were used to make modifications to the questionnaire, establish follow-up procedures for the main study and investigate possible data analysis strategies.

4.2 THE INSTRUMENTS

4.2.1 OCCUPATIONAL STRESSORS

There were several instruments available to measure occupational stressors for teachers (Cichon, 1978; Nash, 1980; Kyriacou, 1980;

Saville, 1981; Syrotiuk and D'Arcy, 1983). However, because they were not designed specifically for women, a special scale was developed for this study. A pool of potential stressors was drawn from existing scales, from a 'focus group' consisting of eleven women teachers who met and discussed the range of stressful events in their work and personal lives, and from suggestions in the literature about conflicts that might exist for working women. These items were reviewed to ensure that there were some items in each of Cooper's (1981) categories of job stressors. The items were then organized into a survey instrument, allowing the respondent to indicate both the occurrence of the stressor for her and her perception of its impact. Perception of impact seemed particularly important for occupational stressors because they are not necessarily events or conditions that would be perceived as inherently stressful by most people.

Since this instrument and the one to measure coping strategies were new, they were included in a pre-pilot questionnaire and given to 35 women teachers in the London, Ontario school system who were friends or colleagues of the executive of the London Women Teacher's Association. The respondents were asked not only to answer the questions but also to give their comments and reactions to them and to identify any questions that were ambiguous or unclear. As a result of this process, several items were added, a number of items were reworded and the instructions were rewritten.

Test-retest reliability of this scale was assessed by administering it to 18 women teachers with a two week interval between testings. It yielded a correlation of .85. The scale has considerable face and content validity as judged by the reactions of the women in the

pre-pilot and pilot studies and it correlates .53 with these women teachers' assessment of how stressful teaching was this year.

The occupational stressors scale includes items 1-63 in Section 1 of the questionnaire in Appendix A.

4.2.2 LIFE STRESSORS

A number of instruments have been used as indicators of the amount of life stress that exists in an individual's life (Paykel et al., 1971; Myers et al., 1971; Brown, 1974; Holmes and Rahe, 1976; Andrews and Tennant, 1976; Dohrenwend et al., 1978; Johnson and Sarason, 1979). These instruments generally measure major life events that engender significant life changes and are almost universally viewed as stressful.

The instrument selected for this study is 'A Scale to Measure The Stress of Life Events' (Tennant and Andrews, 1976). The instrument was chosen because it contains a wide range of both desirable and undesirable life events and does not contain illness symptoms that might confound the relationship between life events and illness. During the development of this instrument the authors created a parallel interviewer-administered form of the questionnaire. The correlation between the two forms was found to be quite high for a general population sample ($r=.91$), with the questionnaire version producing the same information as that produced by the interview version. A one-week test-retest reliability of reporting yielded a correlation of .97. Since this scale includes items for both men and women and some items about unemployment, it was modified slightly for use with the

current population to a 51-item scale including items about health, bereavement, family, friends, education, moving, financial problems and legal problems.

The scale has considerable face and content validity and, because it was constructed from the items used by Paykel et al. (1971) and Holmes and Rahe (1967); it yields Spearman rank-order correlations for distress scores of .92 and .87 respectively with comparable events in these scales and, in terms of the degrees of change or distress, the items rank in a similar way to the original scales (Tennant and Andrews, 1976).

The authors developed change and distress scale scores based on community samples. In the current study, the respondent indicated the direction and intensity of the impact of the event on her personally, according to the strategy to obtain individualized ratings of impact developed by Johnson and Sarason (1979). This was done to obtain personal, individualized ratings of the respondent's perception and appraisal of each event that occurred. This scale comprises Section 5 of the questionnaire.

4.2.3 SOCIAL SUPPORT

Social support has been conceptualized and measured in many different ways. This study required a scale for use with a general population that included indicators of personal support in everyday life as well as items related to the work environment. Two instruments were selected and combined to meet these requirements. The first is The Provision of Social Relations Scale (P.S.R.) (Turner, 1981) and the

second is an adaptation of The Work Support Scale (House, 1981).

The P.S.R. is a 15-item scale measuring a subject's perception in relation to attachment, social integration, reassurance of worth, reliable alliance and guidance. It yields two scales, family support and support from friends, as well as a total score. Tests of internal consistency indicate satisfactory reliabilities with alpha coefficients ranging from .74 to .87 (Turner, 1981). It has obvious face validity and content validity. Its concurrent validity is demonstrated by a correlation of .62 with the revised Kaplan Index of Social Support and .37 to .61 with measures of Reflected Self-esteem and Reflected Self-love developed by the Health Care Research Unit at the University of Western Ontario (Turner, 1981).

The Work Support Scale is designed to distinguish between two types of support at work (emotional and instrumental) from work supervisors, co-workers, spouses and a combined category of friends and relatives. For this study, the format and response categories were changed from a 4 to a 5-point scale to make them consistent with the P.S.R. and several slight wording changes were made to make the items appropriate for a population of women teachers.

The social support items comprise Section 3 of the questionnaire.

4.2.4 PERSONALITY TRAITS

Since personality is both complex and multi-dimensional, it was necessary to select from the multitude of possible personality traits ones that might change the impact of work stressors on the health of women teachers. A second consideration was selecting traits for which

instruments were available. For this study, self-esteem was selected because a number of studies have suggested that an underlying positive feeling about oneself is protective against dysfunction (Pearlin et al., 1981; Cronkite and Moos, 1984). A measure of anxiety was chosen because there is some debate about the impact of stress on anxiety-prone individuals (Garrity et al, 1977; Cherry, 1978; Endler and Edwards, 1982). Because teaching, especially in elementary school, can be intensive and physically demanding, energy level and level of organization have been suggested as characteristics that might benefit teachers (Koff et. al., 1980; Hiebert and Farber, 1984). Since all of these scales are included in the Jackson Personality Inventory (J.P.I.), a carefully designed assessment tool (Jackson, 1976), the relevant scales were chosen for this study. Internal consistency of the scales has been established for anxiety at .85 to .95, energy level at .77 to .93, organization at .75 to .92 and self-esteem at .84 to .95 (Jackson, 1976). Since this is an empirically-derived instrument, face validity is less important than concurrent validity. The correlations of scores on these four scales with an adjective checklist, a self-rating and peer-rating, presented in Table 4.2.1, indicate that they are all reasonably valid scales (Jackson, 1976).

Section 4 of the questionnaire contains the four personality scales. The first item in each set of four being anxiety-proneness, the second energy level, the third organization and the fourth self-esteem.

TABLE 4.2.1

VALIDITY COEFFICIENTS FOR J.P.I. SCALES (JACKSON, 1976)

J.P.I. SCALE	ADJECTIVE CHECKLIST	SELF-RATING	PEER-RATING
ANXIETY	.71	.64	.43
ENERGY LEVEL	.72	.52	.47
LEVEL OF ORGANIZATION	.78	.56	.33
SELF-ESTEEM	.73	.64	.66

4.2.5 COPING STRATEGIES

Coping strategies are so individual and multi-faceted that there is still no well-established instrument for measuring them. In fact, most of the research in this area is currently dedicated to operationally defining and measuring coping. Consequently, no instrument was found to measure coping behaviours specific to teaching or to women. A coping checklist was created for this study by discussing methods of coping with job stress with the aforementioned 'focus group', and by reviewing the self-help literature on stress management. An attempt was made to include direct and indirect strategies as well as active and passive ones. The items were organized in a format designed to allow the respondent to indicate whether or not she had used each technique as a coping strategy and how effective each had been for her. As a result of the comments made by the pre-pilot respondents, several additions were made to the scale and several items were changed.

Test-retest reliability of this scale was assessed by administering it to 18 women teachers twice with a two week interval between testings. It yielded a correlation of .83. Although no validity data exist, the reactions of the women in the pre-pilot and pilot studies suggest that it has both face and content validity.

The coping items make up Section 2 of the questionnaire.

4.2.6 HEALTH STATUS AND JOB-SPECIFIC CONDITIONS

In a general stress model the range of possible health consequences is very broad. Since this study is concerned with a general working population, the measurement of illness is likely to reflect the less severe end of the health-illness continuum and should include measures of several different health status concepts (Ware, 1984). The instruments selected to measure health status were: (1) a checklist of diagnosed chronic conditions, (2) a physical illness symptom inventory, (3) a mental health index, (4) a self-report of absenteeism, (5) a 'burnout' scale, and (6) a global rating of perceived health. There were also two measures of job-specific conditions- perceived job effectiveness and job satisfaction.

Chronic conditions were assessed by a 13-item checklist from the Physical Health Spectrum (Meltzer and Hochstim, 1970). This instrument has a test-retest reliability of .89 and correlates moderately well (.52) with a medical record check (Meltzer and Hochstim, 1970). This checklist is in Section 6, part B of the questionnaire.

The symptom inventory was also taken from the Physical Health Spectrum and was modified as a result of the pilot study to include additional items and the scale was changed from yes/no to a 4-point scale of frequency of occurrence. The original form has a test-retest reliability of .79 and, although the correlation with a medical record check is quite low (.29), symptoms of this kind might not be expected to appear in a physician's records (Meltzer and Hochstim, 1970). The symptom index is part C of Section 6 in the questionnaire.

The National Center for Health Statistics' General Well-Being Schedule (G.W.B.) was chosen as an indicator of mental health (Fazio, 1977). It includes 22 items and produces scores for anxiety, depression, positive well-being, self-control, general health, vitality and mental health, as well as an overall general well-being score. Test-retest reliability for the total G.W.B. scale ranges from .70 to .85 and internal consistency coefficients range from .72 to .94 (Fazio, 1977; Brook, 1978). Content validity for most of the scales was judged to be adequate by a panel of judges because the measures of anxiety, depression, positive well-being and self-control are based chiefly on items referring to psychological states and use favourable and unfavourable definitions of both positive and negative mental health. However, the general health and vitality scales were judged to resemble general health perceptions more than mental health (Fazio, 1977). In terms of concurrent validity, the G.W.B. correlates .52 to .80 with other scales of depression and anxiety (e.g. Psychiatric Symptoms Scale, M.M.P.I., Zung, College Health Questionnaire, Personal Feelings Inventory) (Fazio, 1977). The discriminant validity of the G.W.B. is also adequate. When individuals were classified as depressed or not using the G.W.B., only twelve of the 110 tests misclassified the subject (Fazio, 1977). The G.W.B. also includes five items pertaining to episodes of emotional breakdown and treatment for mental health problems. The G.W.B. comprises part E of Section 6.

The burnout measure selected for this study is an 18-item scale called the Tedium Scale that was produced by Pines, Aronson and Kafry (1980) to measure physical, emotional and mental exhaustion. Although a number of items in this scale are similar to items in both the G.W.B.

and the symptom inventory, they were all included to maintain the integrity of the scale. The Tedium Scale has test-retest reliability ranging from .66 to .89 (Pines, Aronson and Kafry, 1980). It also correlates .32 to .70 with a number of theoretically related constructs (work dissatisfaction, life dissatisfaction, sleep problems and life events) (Pines, Aronson and Kafry, 1980). This scale is part F of Section 6.

Two fairly straightforward questions about absence from school were included as an indirect measure of health status. (Section 6, part D) Perceived health status (Section 6, part A) and perceived job effectiveness (Section 7, part D, item 1) were each assessed by single questions and job satisfaction was assessed using a five item scale taken from the Correctional Work Environment Questionnaire (Section 1, items 64, 65, 66, 67, 69) (Maxim and Plecas, 1983).

4.2.7 SOCIODEMOGRAPHIC AND HEALTH-RELATED VARIABLES

Since life-style and sociodemographic variables may be related to stressors, coping strategies, social support and health status, a number of items were created for this study to ascertain alcohol consumption, smoking behaviour, exercise, body image, teaching assignment, marital status, number of children, income and education. These are found in Section 7, parts A, B, and C.

4.3 THE PILOT STUDY

A detailed description of the pilot study can be found in Appendix B. Briefly, a draft of the complete questionnaire, containing all of the instruments, general instructions for completing the questionnaire and specific instructions for each of the instruments was sent, with an addressed return envelope, to 78 women teachers. Forty-eight of the teachers were randomly selected from the membership list of the London Women Teachers' Association and the remaining 30, representing four different Boards of Education, were approached by the research officer for their district and asked to complete the survey. The questionnaire was accompanied by a cover letter and a one-page form asking whether any of the questions was unclear, difficult to answer or objectionable, how long it took to complete the survey, as well as the respondent's general reaction to the project. The letter and the form are also included in Appendix B.

Forty-seven (60%) of the 78 questionnaires were completed and returned. While this response rate is only moderate, it should be noted that no follow-up reminders were used to encourage responding. The respondents gave many helpful suggestions for wording changes and clarification of items. They also offered some suggestions for changes in the instructions and indicated several places where the response categories were difficult to differentiate. About half of the respondents indicated that one or more of the questions were either unclear or difficult to answer. They identified the problematic items and often gave constructive suggestions for improvement. Only nine percent found any of the items objectionable. These were generally

items about their personal life that they felt were private. The average time to complete the questionnaire was 45 minutes and, although 44% of the respondents felt that it was too long, 89% indicated that their general reaction to the questionnaire was either favourable or very favourable.

As a result of the respondents' suggestions in the pilot study, several items were changed, the general instructions were clarified and items were added to the scales that were constructed for this study. The symptom index response categories were expanded from yes/no to a 4-point scale of frequency and additional symptoms were added to it. Because of the modest response rate and respondents' requests for additional information, it was obvious that reminder notices would be required and that an additional letter of support and explanation from the Federation of Women Teachers' Associations of Ontario should be included. Concern about confidentiality led to a procedure to ensure the anonymity of the respondents in the main study.

CHAPTER 5

METHOD

5.1 STUDY DESIGN

The current study was a cross-sectional survey of women elementary school teachers in the public schools of the province of Ontario. The sample selected from this population was stratified by age and marital status to ensure representativeness so that the descriptive level statistics could be used with confidence by F.W.T.A.O. The survey instrument (See appendix A) included questions about teaching related experiences, coping, social support, personality traits, life events, health, job satisfaction and background information. The study was conducted near the end of a school year and for most of the questions the respondents were asked to restrict their time frame to the current school year.

5.2 SAMPLE SIZE

Sample size calculations for stratified proportional allocation were carried out using data from the Federation of Women Teachers' Associations of Ontario (F.W.T.A.O.) annual report for population strata size and the General Health Questionnaire (Goldberg, 1972) to estimate illness rates. The calculations for selecting a sample stratified by age and marital status (with a 95% confidence interval, allowing for 10% error) from the F.W.T.A.O. population ($N = 26424$) are included in

Appendix C. These calculations indicate that a sample of approximately 530 would be sufficient for estimating population parameters. Since the distribution of scores for the key variables in this model were unknown and not all of those selected would respond, it was decided that a sample of 1000 - 1200 would likely yield sufficient useable returns.

5.3 SAMPLE SELECTION

The Federation of Women Teachers' Association (F.W.T.A.O.) provided access to their membership which includes over 30 000 women teachers employed in the public elementary schools of Ontario. A stratified random sample of teachers was selected from their computerized membership file by: (1) selecting all full-time members, (2) splitting the file by age categories (less than 35, 35-44, 45-54, 55+), (3) splitting each age category by marital status (single, married, other), and (4) using random entry, taking a 4% sample (every 25th case) of the teachers in each of these age x marital status categories. This produced a sample of 1160 F.W.T.A.O. members for inclusion in the study, distributed across age and marital status categories, as displayed in Table 5.3.1

5.4 ANONYMITY

Since the questionnaire includes a number of personal questions, the anonymity of the respondents was assured by having F.W.T.A.O. assign a number to each of the women selected to participate. When the

TABLE 5.3.1

NUMBER OF CASES IN THE POPULATION AND THE SAMPLE SELECTED
BY AGE AND MARITAL STATUS

AGE	Popu- lation	SINGLE		MARRIED		OTHER			
		Sample	% of Pop	Popu- lation	Sample	% of Pop	Popu- lation	Sample	% of Pop
Less than 35	1985	76	3.8	5730	220	3.8	496	19	3.8
35-44	1791	69	3.8	10022	386	3.9	1667	64	3.8
45-54	732	28	3.8	4541	175	3.8	958	36	3.8
55+	228	9	3.9	1509	58	3.9	526	20	3.8
Total	4736	182	3.8	21802	839	3.8	3657	139	3.8

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questionnaires were prepared, each one was given a serial number from 0001 to 1160. The staff of F.W.T.A.O. sent the numbered questionnaire to the teacher with the corresponding number assigned by F.W.T.A.O. during selection. The questionnaires were returned directly to the researcher. In this way, F.W.T.A.O. had only the respondent's identity and number and the researcher had only numbers and anonymous questionnaires.

5.5 DELIVERY AND RETURN STRATEGIES

The questionnaires, along with a cover letter from the Executive Secretary of F.W.T.A.O. and a stamped return envelope, were sent first class mail during the first week of April, 1984. During the first week of May a reminder post-card was sent to all the women teachers who had not yet returned the questionnaire to the researcher. The questionnaire, letter and follow-up post-card are included in Appendix A.

Since sending a second questionnaire to all of the remaining non-respondents was beyond the resources of the researcher, 100 (26%) of the non-respondents were randomly selected and sent a second questionnaire early in June, 1984 to increase the response rate and estimate the return rate if a full second mailing were feasible.

In order to assess some of the reasons for non-response, 35 (9%) other non-respondents were randomly selected to receive a follow-up phone call from a F.W.T.A.O. staff member asking about her reasons for not completing the survey. The protocol for the phone interview is also included in Appendix A.

5.6 DATA PREPARATION

Once the questionnaires were received, they were first checked to ensure that the respondent was a full-time teacher. If she was not, the questionnaire was not included in the data set. Questionnaires from full-time teachers were edited, coded and keyed to create an electronic disk file. An S.P.S.S.X. (Statistical Package for the Social Sciences) file was then created, including all of the item-level raw data as well as a number of transformed variables and summary scores. This file formed the basis for all subsequent analyses.

THE MEASUREMENT MODEL

The instruments selected to measure each of the constructs in the theoretical model depicted in Figure 3.1.1 were described in Chapter 4. There is, however, no single way of summarizing the data for each of these instruments to represent the constructs in the model. This section describes and rationalizes the choices of scores for use in testing the model and gives the acronyms that will be used subsequently to represent the variables.

6.1 INDICATOR OF PERCEIVED OCCUPATIONAL STRESSORS

The indicator of occupational stress in most studies has been some assessment of role overload or role ambiguity (Caplan and Jones, 1975; Caplan et al., 1980) or of general job pressure (Weyer and Hodapp, 1979; Karasek, et al., 1981). In this study the teaching events instrument was designed to tap a broader range of potential stressful events or conditions, especially ones that are specific to teaching and women and include some estimate of the respondents' perception of the impact of the particular events or conditions.

No studies were found that specifically examined ways to improve the reliability or validity of instruments to measure occupational stress. However, there is an extensive methodological literature concerned with the measurement of stressful life events that can be applied to the measurement of occupational stress.

The first phase of life event measurement, based on the work of Rahe and Holmes (1967), involved the initial construction and validation of an objective instrument to measure life events. The second phase has involved perfecting the scaling system. The two central issues have been 1) change or adjustment vs. undesirability and 2) general vs. idiosyncratic conception and weighting of events. On the first issue, Rahe and his colleagues have maintained that it is the change or readjustment required by life events that is the critical factor and, consistent with this view, they weight each event by a life adjustment rating. The competing view is that the key dimension of life events is their undesirable or threatening character (Brown and Birley, 1968; Gersten et al., 1974; Vinokur and Selzer, 1974).

Research designed to clarify the issue of change vs. undesirability generally involves comparing the relationships of life event scores, calculated in different ways to create readjustment and desirability scores, with illness outcomes. The scores that have been compared in these studies include simple counts of the total number of events, the number of desirable events, the number of undesirable events or a balance of undesirability calculated by subtracting the sum of desirable events from the sum of undesirable events. As well as these simple counts, each of the possible scores has been calculated using a number of different weighting schemes to account for either the readjustment necessary for each event or for the undesirability.

Results from these studies are somewhat ambiguous. Myers et al. (1971), Paykel (1971, 1974), Vinokur and Selzer (1974), Ross and

Mirowsky (1979), Mueller et al. (1977), and Tausig (1982) demonstrated that, regardless of how events are weighted, undesirable events are better predictors of subsequent illness than the total number of events or the balance of positive and negative events. Desirable events alone are consistently the worst predictors of illness. When undesirability indices are compared with and without weighting the events by the amount of readjustment required, there is generally no difference reported in the predictive power of the scores (Ross and Mirowsky, 1979; Mueller et al., 1977; Skinner and Lee, 1980). Dohrenwend (1973) found that a measure of life change was more highly correlated with outcomes than undesirability. Ruch (1977), concluded that the degree of life change is more important than desirability, but he did not demonstrate the predictive power of each one with illness. Fontana et al. (1979) found no significant difference between desirability and adjustment in predicting psychological impairment.

The second issue was whether events should be weighted for impact or readjustment by a value (assigned to the event) established by independent judges or by the subjective rating given by the person to the event. Rahe and Holmes (1967) developed their original scale using group norms for weighting events and they and their colleagues have done a number of studies to validate the usefulness of this approach (Masuda and Holmes, 1967; Holmes and Masuda, 1974; Miller et al., 1974). One criticism of their work is that the instrument does not consider the differential impact that the same event may have on different people. Several studies suggest that the relevant variable in individual adaptation is a person's subjective perception and evaluation of the importance of the event (Paykel et al., 1971; Dohrenwend, 1973; Redfield

and Stone, 1979; Hurst, 1979). Johnson and Sarason (1979) developed a refined scale for subjects to rate separately both the desirability and impact of events that they had experienced. Comparisons of this instrument, the Life Event Scale (L.E.S.), with the Holmes and Rahe scale, a Schedule of Recent Events (S.R.E.), indicate that the L.E.S., especially the negative change score, correlated better with outcome measures than the S.R.E. (Sarason et al., 1979; Pancheri et al., 1979).

The scores for desirability, undesirability and the balance between the two were calculated for occupational stress for the current study. Since this scale was modelled on the L.E.S., the scores to determine desirability are based on the individual idiosyncratic assessment of its impact. Because the respondents were also asked to rate the intensity of the impact on them, there are two undesirability scores, a simple count of negative events and one that is weighted by intensity. Table 6.1.1 displays the relationships of these scores with two physical health and two mental health indicators.

The results support the greater predictive power of an undesirability score. Since there are negligible differences between the simple count or the weighted score, and the scale was designed to utilize the weighting according to the Johnson and Sarason (1979) procedure, the score selected for use in this study is the weighted undesirability score. The acronym for this variable is O-STRESS.

6.2 INDICATOR OF PERCEIVED LIFE STRESSORS

The procedure used to select the best measure of occupational stress originated in the methodological literature about life

stress measurement and is even more appropriate for use in selecting an indicator of life stress. Consequently, the same procedure as described above for occupational stress was used to calculate scores for life stress for desirability, undesirability and the balance between the two, based on idiosyncratic judgments of undesirability.

Table 6.2.1 displays the relationships of these life event scores with the same physical and mental health indicators.

It is clear, in this case, as with the occupational events, that undesirability scores are by far the best predictors and the selected score is the weighted undesirability score again because the scale was designed with this component. The acronym for this variable is L-STRESS.

6.3 INDICATORS OF SOCIAL SUPPORT

The Provision of Social Relations (P.S.R.) generates three scores - family support and support from friends, as well as a total score. The Work Support scale yields scores for principal support, co-workers support, spousal support and support from family and friends. Table 6.3.1 gives the internal relationships among the various possible support scales.

Since the P.S.R. total score correlates very highly with the work support subscale of support from family and friends, it was selected as the indicator of general social support (GSUP). The

TABLE 6.1.1

CORRELATIONS OF SEVERAL OCCUPATIONAL EVENTS SCORES WITH
SELECTED ILLNESS OUTCOMES

Occupational Event Score	Chronic Conditions	Symptoms	Mental Health	Burnout
Total No. of Events	.05	.33	-.13	.30
No. of Positive Events	-.04	-.09	.16	-.21
No. of Negative Events	.05	.38	-.42	.43
Weighted Positive Score	-.04	-.13	.20	-.25
Weighted Negative Score	.06	.38	-.45	.48
Total Weighted Score	-.04	.32	-.36	.37
Balance Score (Negative-Positive)	.06	.34	-.40	.43
Weighted Difference Score	.07	.36	-.45	.49

TABLE 6.2.1.

CORRELATION OF SEVERAL LIFE EVENT SCORES
WITH SELECTED ILLNESS OUTCOMES

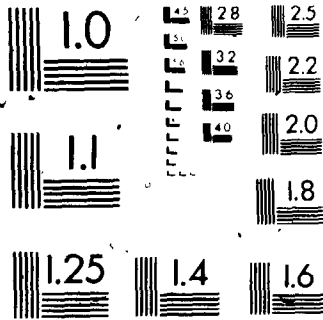
Life Event Score	Chronic Conditions	Symptoms	Mental Health	Burnout
Total No. of Events	.13	.15	-.24	.19
No. of Positive Events	.03	-.06	.12	-.09
No. of Negative Events	.12	.24	-.43	.35
Weighted Positive Score	.05	-.06	.15	-.10
Weighted Negative Score	.13	.23	-.46	.37
Balance Score (Negative-Positive)	.07	.22	-.40	.33
Weighted Difference Score	.06	.20	-.42	.33

TABLE 6.3:1
 INTERNAL RELATIONSHIPS AMONG
 THE VARIOUS SUPPORT SCALES

	PSR	PRIN.	C.W.	PRIN. + C.W.	F.F.
PSR - Total	1.00	.17	.34	.29	.98
WORK SUPPORT Principal (Prin)		1.00	.35	.91	.19
WORK SUPPORT Coworkers (C.W.)			1.00	.70	.37
WORK SUPPORT Principals + Coworkers (Prin. + C.W.)				1.00	.31
WORK SUPPORT Family and Friends (F.F.)					1.00

2

MICROCOPY RESOLUTION TEST CHART
NBS 1610a
ANSI and ISO TEST CHART No. 2



combined principal-coworkers scale (WSUP) is correlated reasonably with both principal and co-worker scores separately and was selected as the work support indicator. Finally, the spousal support (SPSUP) score was selected for consideration with married women.

6.4 INDICATOR OF COPING EFFECTIVENESS

Since the coping scale was created for this study, there is no established way to summarize the data to characterize coping. The literature in this area reveals two approaches. One is an attempt to isolate coping styles that endure across situations (Ilfield, 1980; Vaillant, 1977) and the other regards coping as a complex situation - specific interaction between the individual and the environment that may or may not be effective in a particular situation.

Using the concept that there are enduring coping styles, there are several possible ways to analyze the data. The first of these is empirical, using factor analysis to isolate groups of strategies in the data. A principal components factor analysis of these data failed to produce a rotated factor matrix. The analysis of whether a strategy was or was not used (extracting factors to eigenvalue = 1) resulted in the isolation of 23 factors and the rotation procedure (VARIMAX) failed to converge. This suggests that either there is excessive measurement error, or that the interrelationships among coping strategies are not strong and no consistent patterns exist.

A second possible approach in the coping style domain is to use categories of coping techniques already developed by other investigators and logically assign items to these categories. Several

of these schemes for categorizing coping strategies have been developed (Pearlin and Schooler, 1978; Newman and Beehr, 1979; Lazarus, 1980; Billings and Moos, 1981; and Burke and Weir, 1980) but the items on this scale do not fall easily into any of them.

If coping is conceptualized as a changing interaction between the individual and the environment, the particular number or kinds of strategies used is less important than the overall effectiveness of the strategies used, regardless of the form they take. This can be operationalized by using a score that reflects the mean effectiveness rating of the strategies that each respondent indicated having used. This effectiveness score was selected for use in this study, even though it does not identify particular coping styles. The acronym for this variable is COPEFF.

6.5 INDICATORS OF PERSONALITY TRAITS

The personality traits of anxiety-proneness (ANXIETY), energy (ENERGY), self-esteem (ESTEEM), and organization (ORGANZ) are represented by the scale scores that are derived from the Jackson Personality Inventory according to the user's manual (Jackson, 1976).

6.6 INDICATORS OF HEALTH STATUS AND JOB-SPECIFIC CONDITIONS

A number of different scores are required to represent the different health status measures in the model. Chronic

conditions are measured by the number of chronic conditions checked as diagnosed during 1983 (CHR83). Since the study attempts to isolate relationships that may ultimately lead to the identification of causal factors, only recently diagnosed chronic illnesses were included because only stressful events during the last year were surveyed and earlier chronic conditions could not be attributed to these events. Because many of the subjects indicated that they have no chronic conditions, this variable has been recoded as dichotomous (1 = any chronic conditions, 0 = no chronic conditions). The score for the symptom index (SYMPTOM) is the scale total and reflects the number and severity of symptoms reported. The General Well-Being Schedule produces scales for anxiety, depression, positive well-being, self control, general health, vitality, mental health and overall general well-being. Since this study required a general indicator of mental health the G.W.B. Mental Health Index was selected (MHIND). The G.W.B. Schedule also includes treatment items and these were combined as a dichotomous variable to create a treatment variable (1 = yes, 0 = no) (TRTMNT). The Tedium scale yields a single score for burnout (BURNOUT). Perceived health status (HEALTH) is a single item.

Although they are not direct health indices, absence from school (ABSCH), perceived job effectiveness (EFF) and job satisfaction (SATFAC) are important dependent measures for an occupational stress model.

Table 6.6.1 gives, for each instrument, the variable being measured, the source of the instrument and the acronym used to refer to it in this study.

TABLE 6.6.1.

VARIABLE, SOURCE AND ACRONYM FOR EACH OF THE MEASURES USED

VARIABLE	SOURCE	ACRONYM
Occupational Stressors	created for study	O-STRESS
Life Stressors	Tennant and Andrews, 1976	L-STRESS
Social Support	Turner, 1984	SSUP
Work Support	House, 1978	WSUP
Spousal Support	House, 1978	SPSUP
Anxiety Proneness	Jackson, 1976	ANXIETY
Energy Level	Jackson, 1976	ENERGY
Self-Esteem	Jackson, 1976	ESTEEM
Level of Organization	Jackson, 1976	ORGANZ
Coping	created for study	COPEFF
Chronic Conditions	Melzer and Hochstim, 1970	CHR83
Symptoms	Melzer and Hochstim, 1970	SYMPTOM
Mental Health	Fazio, 1977	MHIND
General Health	created for study	HEALTH
Burnout	Pines, Aronson and Kafry, 1980	BURNOUT
Treatment	Fazio, 1977	TRTMNT
Absence from School	created for study	ABSCH
Job Satisfaction	Maxim and Plecas, 1983	SATFAC
Job Effectiveness	created for study	EFF

RESULTS 1: DESCRIPTIVE RESULTS

This chapter briefly describes the pattern of questionnaire returns and the representativeness of the sample. Following this, the results are presented for the first series of research questions concerned with a description of the sample in terms of occupational stress, personality, coping, social support, life stress and dysfunction.

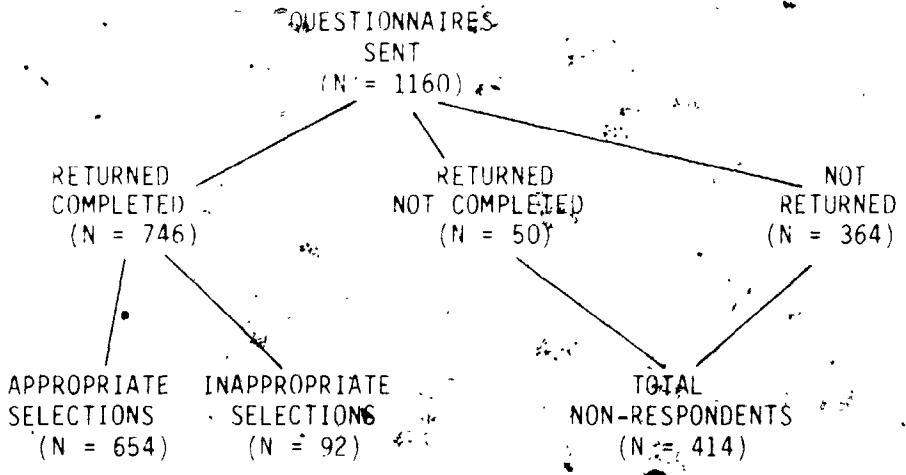
7.1 QUESTIONNAIRE RETURNS, FOLLOW-UP AND REPRESENTATIVENESS

7.1.1. RETURN RATE AND PATTERN OF RETURNS

Of the 1160 questionnaires sent, 654 (56%) useable questionnaires were returned. The remaining 44% included non-respondents, as well as some respondents who returned the questionnaire but who had been inappropriately selected because of inaccuracies in the F.W.T.A.O. records. These teachers were either on leave or teaching part-time. There were 92 such inappropriate selections or 8% of the sample. Removing them from the original 1160 resulted in an actual return rate of 61%. Figure 7.1.1 details the pattern of response, non-response and usable questionnaires.

FIGURE 7.1.1

OVERALL PATTERN OF RESPONSE, NON-RESPONSE AND USEABLE QUESTIONNAIRES.



7.1.2 TELEPHONE FOLLOW-UP AND SECOND MAILING OF QUESTIONNAIRE

In order to elicit reasons for non-response, 35 randomly selected non-respondents were contacted by phone. An initial call and two follow-up calls were made to each woman in this sample and 27 (77%) were eventually reached. Twenty-three (85%) said they had received the questionnaire and four (15%) either did not receive it or were not sure they had. Of those who had received the questionnaire five (21%) said that they had already sent it back and four (17%) indicated that they were just about to send it. The rest gave the following reasons for not completing the survey: survey too long (21%), on leave, teaching part-time or teaching secondary school (21%), forgot or lost it (9%), not interested or annoyed by the personal nature of the questions (9%),

Twenty-one percent of those contacted by phone said that they did not return the questionnaire because they were on leave, teaching part-time or teaching secondary. This suggests that the number of inappropriate selections in the sample was higher than the 8% who returned the surveys anyway. If the actual rate of inappropriate selections was 21% and this estimate was applied to the 414 non-respondents, the estimated response rate would be 66%.

Repeat questionnaires were sent to 100 non-respondents. Twenty-five percent of them were returned by appropriate respondents. This suggests that a full second mailing might have resulted in an estimated additional 74 useable questionnaires. Additional financial resources would probably have reduced the problem of a moderately low response rate.

7.1.3 COMPARISON OF RESPONDENTS AND NON-RESPONDENTS

Although a limited amount of information was known about the non-respondents, their age category and marital status was known from the sample selection procedure. For this comparison the information came from the F.W.T.A.O. data base for both groups.

Tables 7.1.1 and 7.1.2 give the number and percent of cases in each marital status and age category, respectively, for the respondents and non-respondents. In Table 7.1.1 the marital status categories are the ones used by F.W.T.A.O. and it is not clear exactly how such things as common-law, separated or widowed are classified.

There were no significant differences in the proportion of cases in marital status categories (chi-square, 2 d.f. = 1.17, $p = .70$) but there was evidence for differences (chi-square, 3 d.f. = 7.92, $p = .02$) in the age distributions. There were proportionately more respondents than non-respondents in the older age categories and fewer in the younger.

7.1.4 COMPARISON OF SAMPLE WITH F.W.T.A.O. MEMBERSHIP

Since the F.W.T.A.O. publishes statistical information about its membership annually (F.W.T.A.O., 1984), it is possible to assess the representativeness of the sample in terms of age, marital status, grades taught and salary by marital status. The following series of tables (7.1.3 - 7.1.6) detail these comparisons. The sample selected refers to the 1160 women who were originally selected to participate in the study and the sample analyzed is the 654 appropriate respondents. The

TABLE 7.1.1
 NUMBER AND PERCENT OF RESPONDENTS AND NON-RESPONDENTS
 IN EACH MARITAL STATUS CATEGORY

MARITAL STATUS	RESPONDENTS		NON-RESPONDENTS	
	N	%	N	%
Single	105	16	77	18
Married	465	71	287	69
Other	84	13	50	12

TABLE 7.1.2
 NUMBER AND PERCENT OF RESPONDENTS AND NON-RESPONDENTS
 BY AGE CATEGORY

AGE	RESPONDENTS		NON-RESPONDENTS	
	N	%	N	%
-35	170	26	120	29
35-44	275	42	193	47
45-54	150	23	78	19
55+	59	9	23	6

population figures for age, marital status and salary are for full-time teachers but those for grades taught include part-time teachers and are, therefore, not strictly comparable.

It is clear from Table 7.1.3 that the age distribution of the sample analyzed is very similar to the total population (chi-square, 4 d.f. = .65, $P = .70$). The chi-square test used for population comparisons is a goodness of fit test, using population expectancies (Snedecor and Cochran, 1980).

A chi-square test for marital status categories between the sample analyzed and the population (Table 7.1.4) shows a significant difference (chi-square, 2 d.f. = 17.5, $P = .001$) with the major difference being proportionally fewer single women in the sample than in the population and slightly more 'others' in the sample.

This difference might have resulted from differences in classification. The F.W.T.A.U. report used only these three categories and the present study data were more detailed and had to be grouped logically into three categories. Women who were once married but are now divorced or widowed were categorized for the study sample as 'other'. It is possible that these women, when faced with only three categories in the F.W.T.A.U. questionnaire, would classify themselves as single.

The comparison of grades taught (Table 7.1.5) includes only classroom teachers in both the sample and the population but the population figures include part-time teachers. There are significant differences between the sample and the population in the distribution of grades taught (chi-square, 3 d.f. = 37.2, $P = .001$). Primary teachers are over-represented in the sample and the 'other' category (teachers who teach grades in combination that do not readily

TABLE 7.1.3

COMPARISON OF AGE DISTRIBUTIONS FOR THE SAMPLE AND THE F.W.T.A.O.
FULL-TIME POPULATION

AGE	SAMPLE SELECTED		SAMPLE ANALYZED		POPULATION
	N	%	N	%	
1-35	315	27.0	167	25.5	26.6
35-44	519	45.0	273	41.7	43.2
45-54	239	21.0	147	22.5	21.1
55+	87	7.0	57	8.7	7.9
Unreported	9	0	10	1.5	-1.1
Mean	N/A*		40.3		40.4
Median	N/A*		37		38

* N/A = not available

TABLE 7.1.4

COMPARISON OF MARITAL STATUS FOR THE SAMPLE AND THE
F.W.T.A.O. POPULATION

MARITAL STATUS	SAMPLE SELECTED		SAMPLE ANALYZED		POPULATION	
	N	%	N	%	N	%
Single	102	15.7	89	13.8	5422	20.2
Married	839	72.3	460	71.1	18037	67.0
Other	139	12.0	98	15.1	3442	12.8

TABLE 7.1.5

COMPARISON OF GRADES TAUGHT FOR THE REGULAR CLASSROOM
TEACHERS IN THE SAMPLE ANALYZED AND THE F.W.T.A.O. POPULATION

GRADE	IN SAMPLE		IN POPULATION	
	N	%	N	%
Primary	243	64.9	10912	52.2
Junior	84	22.5	4715	22.5
Intermediate	33	8.8	2467	11.8
Other	14	3.8	2827	13.5

fit into standard classifications) is under-represented. Because the population data include part-time teachers for this comparison it is difficult to interpret these differences.

The salaries in Table 7.1.6 indicate that the study sample is more highly paid than the full-time F.W.T.A.O. population. This could suggest that there is some bias with lower paid women more likely to be non-respondents. However, since contract settlements are reached at many times during the year and the questionnaire was distributed in the spring while the population information was collected during the prior fall, it is likely that the salary reported by the sample would reflect an additional annual increase. If this increase were estimated at 5%, the sample is still somewhat more highly paid than the population. The data reported by the F.W.T.A.O. do not allow a statistical test on these differences.

Although there are some differences between the sample and the full F.W.T.A.O. population in marital status, grade taught and median salaries, it is difficult to assess the extent to which these differences could limit the generalizability of the results. This is especially problematic since the data reported by F.W.T.A.O. sometimes include part-time teachers, use different categories and were collected very early in the school year and are, therefore, not always a completely appropriate reference point. However, for the purposes of this study, the generalizability of the results is not as critical as whether there is any bias in the sampling that could create a spurious relationship or obscure a real one.

TABLE 7.116
COMPARISON OF MEDIAN SALARIES FOR THE SAMPLE ANALYZED
AND F.W.T.A.O. POPULATION BY MARITAL STATUS

MARITAL STATUS	SAMPLE	POPULATION	ESTIMATE WITH 5% INCREASE
Married	36 200	30 600	32 130
Single	38 900	32 800	34 440
Other	38 500	34 800	36 540

7.2. DESCRIPTION OF OCCUPATIONAL STRESS, PERSONALITY, COPING, SOCIAL SUPPORT, LIFE STRESS AND DYSFUNCTION

This section describes the sample of women teachers in this study in terms of the key variables in the model, as well as some sociodemographic and life style variables. The distribution of responses for each item in the questionnaire is included in Appendix A.

7.2.1 OCCUPATIONAL STRESSORS - STRESSFUL TEACHING RELATED EXPERIENCES

Twenty-two percent of the respondents indicated that teaching this year was either very or extremely stressful. The remainder (78%) said it was moderately, mildly or not at all stressful. (See questionnaire Section 1 - item 68).

Every item on the teaching events scale was checked by at least one person and a few were checked by almost all respondents. Thirty-one percent were checked by at least 50% of the respondents. Every respondent checked at least four items. The most frequently checked items were: had to do paper work (99% of respondents), attended school-related meetings (96%), had conferences with parents (93%), have some highly motivated students (85%), had a class with a wide range of ability (82%), had to plan program modifications for students (80%), missed breaks (75%), involved in extra-curricular activities (74%), had more work than I could do in a school day (73%) and not enough time for myself because of school and home responsibilities (73%).

There was considerable variation among respondents in terms of impact of many events on them personally. For example, almost all (96%) indicated that they attended school related meetings and, of those,

35% felt this had a negative impact, 35% said it had no impact, and 31% viewed it as positive. (Questionnaire - Section 1, item 48.) On the other hand, some events were generally viewed as having a negative impact when they occurred. These are displayed in Table 7.2.1, along with the percent of cases who experienced the event and, of those, the percent who indicated that it had a negative impact:

A few items were sometimes viewed as positive. They are displayed in Table 7.2.2, along with the percent of cases who experienced each one and, of those, the percent who indicated that it was positive.

When both frequency and negative impact were considered together, five of the top six stressful events were related to the home-work interface. These were not enough time, no time to relax, disturbed at work by home obligations, conflict between home and work, and guilty about neglecting my family.

As mentioned in Chapter 6, the variable selected as an indicator of occupational stress is the weighted sum of teaching events checked and rated negative. This score has a possible total value of 126, a mean of 20.2 and a standard deviation of 12.0.

7.2.2 COPING STRATEGIES

All of the items in the coping checklist were checked by some of the respondents. Table 7.2.3 gives the strategies that were checked most frequently and shows the percent of respondents that checked each one and the percent of those who checked it who felt that it helped.

TABLE 7.2.1

HIGHEST NEGATIVE IMPACT TEACHING EVENTS

EVENT	PERCENT EXPERIENCING THE EVENT	PERCENTAGE OF THOSE WHO EXPERIENCED IT THAT RATED IT NEGATIVE
Involved in a strike	1	100
Required to implement curriculum or policy that is in conflict with what is best for my students	15	98
Conflict between work and home	41	96
Felt guilty about neglecting my family	39	96
No time for myself	73	95
Inadequate disciplinary sanctions available	29	94
Over crowded classroom	30	94
Uncertain about what I am expected to do in my class	11	94
Insufficient materials	42	93
Not enough time to relax during the school day	84	93
Argued with husband about school work	22	92
Poor relationship with other staff member(s)	12	91
Did not have the necessary skills	15	91
Distressed at work by home obligations	65	91
Concerned about losing my job	17	90
Inadequate personal facilities at school	36	90

TABLE 7.2.2

TEACHING EVENTS RATED POSITIVE

EVENT	PERCENT EXPERIENCING THE EVENT	PERCENTAGE OF THOSE WHO EXPER- IENCED IT THAT RATED IT POSITIVE
Highly-motivated students	85	94
Promoted	3	89
Applied for promotion	6	70
Involved with Federation	26	69
Taking additional course work for upgrading	41	68
Conferences with parents	93	68
Decided to change jobs	8	65
Extra-curricular activities	74	64
Evaluated or observed by principal	52	64
Outside research or training project in my class	19	64

TABLE 7.2.3

MOST FREQUENT COPING STRATEGIES

STRATEGY	PERCENT USING THE STRATEGY	PERCENTAGE OF THOSE WHO USED IT THAT RATED IT EFFECTIVE
Tried to keep things in perspective	94	89
Tried to minimize the difficulties and look at the good things	82	87
Talked to family or friends	81	92
Talked to colleagues	81	90
Tried to find solutions to remove a stressful condition	81	85
Tried to increase efficiency	80	86
Reassured myself that everything would work out	78	78
Took work home	78	81
Laughed	78	94
Read	77	91

The strategies that were seen as the most effective, but not necessarily the most frequently used, are presented in Table 7.2.4.

Most of the respondents indicated that, if they used a strategy, it either didn't change anything or it helped. There were some strategies, however, that a few respondents felt made things worse. These are displayed in Table 7.2.5, along with the frequency that each was checked and the percent of those who checked it that felt it made things worse and the percent who felt it made things better. It is clear that, even among strategies that are sometimes seen as negative, all but one of them (eating) are more often viewed as having a positive effect on the situation.

The mean effectiveness score, described in Chapter 6 as the indicator of coping effectiveness, has a mean of 4.0 and a standard deviation of .69.

7.2.3 SOCIAL SUPPORT

The women in this study felt that they were well supported not only by their family and friends generally but, in the work environment, by their principal, co-workers and, for married women, by their spouses.

Eighty-five percent felt that their principal would be at least 'somewhat' willing to take the time to talk about work-related problems and 78% felt the principal was at least somewhat concerned about the staff. However, 39% felt the principal did not go out of the way to praise good work. Over 80% felt that their co-workers were supportive on all of the items in this section.

TABLE 7.2.4

MOST EFFECTIVE COPING STRATEGIES

STRATEGY	PERCENT USING THE STRATEGY	PERCENTAGE OF THOSE WHO USED THE STRATEGY THAT RATED IT AS EFFECTIVE
Made time for myself	63	97
Hired a cleaning lady or housekeeper	30	97
Interacted with people outside work	75	95
Socialized	74	95
Took time off work	17	95
Engaged in non-work related interests and hobbies	51	94
Laughed	78	94
Built body resistance through sleep, exercise and diet	56	93
Took a trip	41	93
Had the family help with housework	48	93
Listened to music	57	92
Physical exercise	50	92
Talked to family or friends	81	92
Tried to learn new approaches	62	92
Balanced time between work and recreation	46	92

TABLE 7.2.5

**COPING STRATEGIES
THAT ANYONE FELT MADE THINGS WORSE**

STRATEGY	PERCENT USING THE STRATEGY	PERCENTAGE OF THOSE WHO USED IT SAYING IT MADE THINGS WORSE	PERCENTAGE OF THOSE WHO USED IT SAID IT MADE THINGS BETTER
Ate	44	50	16
Yelled or shouted to let off steam	37	24	46
Got involved in extra work related activities	19	21	53
Smoked cigarettes	21	19	33
Took courses to upgrade my skills	36	17	66
Took work home	78	13	68
Worked harder	47	13	66
Drank coffee or tea	53	11	30
Avoided confrontation	58	7	71

Spouses were seen as generally supportive personally and in relation to work. At least 75% of the married respondents indicated supportive spouses for all of the spousal items. The same was true for support from family and friends. At least 70% of the respondents indicated that their family and friends were supportive on all of the family and friends items.

The three scores selected as indicators of support and described in Chapter 6, are the total score from the P.S.R., a composite principal/co-workers support score and the spousal support score. The possible total scores, range of scores, means and standard deviations for these scores are given in Table 7.2.6.

7.2.4 PERSONALITY

The mean scores and standard deviations for the four scales from the Jackson Personality Inventory, calculated according to the users manual, are presented in Table 7.2.7, along with the mean scores and standard deviations from the J.P.I. female normative sample of 2000 college students.

The study sample has a significantly lower mean anxiety score and higher organization and self-esteem mean scores than the normative samples, possibly because of their higher age and more secure position. There was no significant difference between the energy score means.

TABLE 7.2.6

POSSIBLE TOTAL SCORES, MEAN AND STANDARD DEVIATIONS FOR
THREE SOCIAL SUPPORT SCALES

SCORE DESCRIPTION	POSSIBLE		MEAN	STANDARD DEVIATION
	SCORE	RANGE		
PSR	75	27-75	62.8	9.9
Principal/coworker	50	10-40	35.9	8.9
Spousal support	35	7-35	27.9	7.1

TABLE 7.2.7

MEAN AND STANDARD DEVIATION FOR FOUR J.P.I.
SCALES FOR STUDY SAMPLE (n=654)
AND NORMATIVE SAMPLE (n=2000)

SCALE	POSSIBLE SCORE	STUDY SAMPLE		NORMATIVE SAMPLE		t-VALUE
		Mean	S.D.	Mean	S.D.	
Anxiety	20	10.4	4.7	12.4	4.2	10.3 (.01)
Energy	20	10.9	3.9	11.1	4.0	1.1 (N.S.)
Organization	20	12.9	3.9	10.7	4.2	11.6 (.01)
Self-Esteem	20	11.2	5.2	10.5	5.1	2.9 (.01)

7.2.5 LIFE STRESSORS - MAJOR STRESSFUL LIFE EVENTS

As might be expected, most of the life events did not occur to many of the teachers in the sample and 15 of 51 items occurred to less than 2% of the respondents. None of the respondents checked more than 13 (25%) of the events and 24 of the respondents did not check any.

The most frequently occurring events were minor illness or injury (53%), completed a course (29%), moderate financial difficulties (26%), a close relative had a serious illness (25%) and much better off financially (24%).

Thirteen events were generally rated positive when they occurred. These are presented in Table 7.2.8. The remaining events were almost always rated as negative. The events that were seen as negative by most of those experiencing them when they occurred are shown in Table 7.2.9.

The variable selected and described in Chapter 6 as the indicator of the impact of life events is the weighted sum of life events checked and rated negative. This score has a median of 2 and a range of 0 to 23. Although this distribution is skewed, there is some variability among the respondents.

7.2.6 HEALTH STATUS

The study teachers indicated that they are generally in either good (63%) or excellent (28%) health. Twelve percent of them had not missed any time at work during the year and 35% missed fewer than three days. The mean number of days absent was 5.6 with a standard deviation

TABLE 7.2.8

LIFE EVENTS MOST FREQUENTLY RATED POSITIVE

LIFE EVENT	PERCENT EXPERIENCING THE EVENT	PERCENT OF THOSE WHO EXPERIENCED IT THAT RATED IT AS POSITIVE
Adopted a child	13	100
Improvements in relationships with spouse	18	96
Had a baby	5	94
Improvement in relationship with someone other than spouse	15	93
Married	5	91
Better off financially	24	89
Became engaged	5	88
Child married with approval	3	86
Completed a course	29	85
Had an extramarital affair	2	83
Was pregnant	8	81
Moved to a new house	7	68
Started a course	31	61

TABLE 7.2.9

LIFE EVENTS MOST FREQUENTLY RATED AS NEGATIVE

LIFE EVENT	PERCENT EXPERIENCING THE EVENT.	PERCENT OF THOSE WHO EXPERIENCED IT WHO RATED IT AS NEGATIVE
Stillbirth	.2	100
Child died	.2	100
Problem with police	.3	100
Failed an important exam	.5	100
Increasing arguments with fiancée or steady	4	100
Major financial crisis	4	96
Serious increasing arguments with someone in home (not spouse)	8	96
Lost something of value	4	93
Separated from someone (not family)	9	93
Increasing serious arguments with husband	11	92
Serious problem with close friend or neighbour	8	92
Abortion or miscarriage	1	90

of 8.6. The most frequently checked chronic conditions were arthritis (5.4%) and high blood pressure (4.5%) and only 29.8 % of the teachers indicated that they had any diagnosed chronic conditions. Only 9.9% had chronic conditions diagnosed during this school year.

The symptoms most frequently reported as occurring often were tiring easily (27%), headaches (18%), backache (14%) and menstrual problems (13%). Almost no one experienced paralysis (1%). The overall scale score for symptoms has a possible score total of 180 and, in this sample, the mean was 45.2 and the standard deviation was 9.1.

The General Well-Being Schedule yields several different scores. They were all calculated according to the author's directions (Brook, 1978) and are presented in Table 7.2.10, along with study and normative sample means and standard deviations.

Respondents in both the study and normative samples tended to score near the favourable end of the score ranges, indicating a tendency to be mentally healthy, even though the scores for the study sample were lower than the normative sample. The score selected for this study was the Mental Health Index. Although the study sample mean was lower than the normative sample ($t=10.6$, $P=.01$), it was still at the favourable end of the scale. The variability in the study sample approximates that of the standardization sample.

Most women in this sample (88%) had not been treated for personal, emotional or mental problems, nor had they ever had a nervous breakdown.

The scores on the burnout scale were fairly normally distributed with a good deal of variability. The possible total score for this scale was 90 and the mean score for the sample was 43.0, with a standard

TABLE 7.2.10
 MEANS AND STANDARD DEVIATION OF SUBSCALE SCORES OF THE
 G.W.B. INDEX WITH COMPARATIVE DATA FROM A NORMATIVE SAMPLE

SCORE DESCRIPTION (ITEMS)	POSSIBLE SCORE	STUDY SAMPLE (n=654)		NORMATIVE SAMPLE (n=1212)	
		\bar{X}	S.D.	\bar{X}	S.D.
Anxiety score (2,6,9,12,15)	30	14.4	4.6	12.1	4.7
Depression scores (8,13,17)	18	6.2	2.5	5.6	2.5
General Health (3,10,14)	18	14.5	2.4	15.2	2.5
Positive well-being (1,5,9,22)	24	14.3	1.5	17.1	3.6
Self-control (7, 11, 21)	18	14.8	2.4	16.0	2.3
Vitality (4,16,18,20)	24	15.9	3.6	17.6	3.5
General well-being (all 22 items)	132	91.7	14.9	104.2	15.7
Mental health index (1,2,5,6, 8,9,11,12,13,15,17,19,22)	90	66.1	11.6	71.4	11.4

deviation of 11.6. Within the study sample, there were some respondents who indicate that they were feeling very 'burnt out'. Twenty-five percent had scores above 50 and 7% had scores above 60.

7.2.7 JOB-RELATED CONDITIONS

These women teachers were generally satisfied with teaching. Eighty percent said they were somewhat or very satisfied with their present jobs and the majority said they looked forward to going to school every day (83%), they would probably stay in education until retirement (71%) and, given the choice, they would probably enter teaching again (62%).

They also saw themselves as effective teachers. Eighty-two percent said that their teaching effectiveness during the past year was either good or excellent.

7.2.8 SOCIO-DEMOGRAPHIC AND LIFE-STYLE VARIABLES

These women teachers had a mean age of 40.3 years with a range of 24 to 62 years. Seventy-four percent of them were currently married or cohabiting, while 14% had never been married. The remaining 11% were either divorced, widowed or separated. In the whole sample, 35% had no children, 54% had at least one child at home and 7% were single parents. The average number of children was 1.4 and the children ranged in age from less than 1 year to 34 years. For those with children, 81% had at least one child living at home.

Average personal income of the women was \$36 000 and average family income was \$56 900. Seventy percent have a university degree and twenty-five percent had an Honours or Masters degree.

Fifty-eight percent were currently teaching in a regular class, 12% taught special education classes, 1.5% were principals or vice-principals and 28% were either specialized teachers or on special assignment. They were most often teaching in the primary division (65%). The average number of years teaching was fifteen with a range from 1 to 36 years. Most of the women taught in medium size schools (250-500 students). They taught in various kinds of communities around the province: twenty-six percent were in a rural area, 17% in a large town, 26% in the core area of an urban centre and 33% in a suburban school. Twenty-two percent of those who were married were married to teachers and the rest were married to men in many different occupations ranging from professionals to unemployed.

Fifty-four percent had taken time out of teaching at some time during their career for child-rearing for periods ranging from one month to 25 years but with four years the average.

Eighty percent of them were non-smokers and 66% drank alcohol at least two or three times a month. Only 13% had ever taken tranquilizers. They felt that they were slightly overweight (10 lb.) but judged themselves to be of normal weight compared to women their age. Sixty-five percent exercised at least once a week and 78% felt that they were of average or above average fitness.

7.2.9 RELATIONSHIPS AMONG DEPENDENT VARIABLES

Since there are a number of possible dependent measures representing both physical and mental health of differing severity, and some job-specific conditions, each of them needs to be examined separately in relationship to the various independent variables. However, it is also interesting to look at the relationships among them. Table 7.2.11 gives the zero-order correlations among the dependent measures. All of these relationships are significant ($p=.05$) and several of the dependent variables are closely related to one another, especially BURNOUT and MHIND (-.80). The rest of the functioning measures, however, appear to represent different dimensions.

7.2.10 RELATIONSHIP OF MARITAL STATUS AND MARITAL STATUS/CHILD CARE TO THE KEY VARIABLES IN THE MODEL

Women in different life circumstances may differ in terms of some of the key variables in the model. Tables 7.2.12 and 7.2.13 show group means and the results of one way ANOVA tests by marital status and a combination of marital status/child care.

Marital status was categorized as now married or cohabiting, never married or other. The marital status/child care categories were married with no children at home, married with children at home, single with no children and single parent. There were very few statistically significant differences among these groups. Only life stressors showed a difference by marital status. Women who were separated, divorced, or widowed score higher on this dimension. A closer examination within

this category revealed that this difference would be attributed to the fact that women who were divorced had much higher scores ($X = 6.26$) than any other group. When marital status was considered in combination with child-care responsibilities, there were three variables with significant differences among the groups. In all three, it was the single parent group who differed from the rest. They had a higher number of life stressors, lower general social support and lower coping effectiveness.

TABLE 7.2.12
 GROUP MEANS BY MARITAL STATUS

VARIABLE	MARITAL STATUS			ANOVA Test
	Now Married (n=413)	Never Married (n=76)	Separated Divorced Widowed (n=60)	
0-STRESS	20.18	18.14	21.12	.30
L-STRESS	2.78	2.46	4.40	.00
GSUP	62.59	64.33	62.26	.33
WSUP	36.25	34.61	35.07	.25
ANXIETY	10.40	10.57	9.97	.75
ENERGY	10.99	10.74	10.74	.80
ESTEEM	11.45	10.93	11.26	.72
ORGANZ	12.98	13.16	11.83	.08
COPEFF	4.08	4.06	3.99	.30
MHIND	66.37	66.46	62.92	.10
BURNOUT	42.57	43.18	45.77	.13
TRTMNT	.111	.092	.167	.37
CHR83	.094	.118	.100	.81
SYMPTOMS	45.36	44.38	46.64	.37
HEALTH	1.81	1.76	1.92	.31
ABSCH	5.31	4.89	5.29	.84
SATFAC	19.13	18.79	18.50	.38
EFF	4.03	4.00	4.00	.90

TABLE 7.2.13
GROUP MEANS BY MARITAL STATUS/CHILD CARE

VARIABLE	MARITAL STATUS/CHILD CARE				ANOVA Test (P-value)
	Married No. Children (n=152)	Married With Children At Home (n=259)	Single No Children (n=100)	Single Parent (n=36)	
O-STRESS	19.47	20.49	18.96	20.83	.65
L-STRESS	2.59	2.88	2.79	4.78	.04
GSUP	63.95	61.79	64.69	59.88	.04
WSUP	35.79	36.65	34.64	35.31	.26
ANXIETY	10.44	10.36	10.23	10.53	.93
ENERGY	10.83	10.08	10.92	10.23	.66
ESTEEM	11.91	11.13	11.44	10.06	.21
ORGANZ	13.05	12.98	12.89	11.70	.29
COPEFF	4.14	4.06	4.06	3.96	.05
MHIND	67.15	65.96	65.34	63.67	.37
BURNOUT	42.24	42.70	43.34	47.06	.15
TRTMNT	.112	.112	.130	.111	.96
CHR83	.105	.081	.130	.056	.42
SYMPTOMS	46.02	44.93	44.72	47.20	.36
HEALTH	1.87	1.77	1.84	1.81	.44
ABSCH	6.21	4.79	5.19	4.69	.11
SATFAC	19.16	19.11	18.60	18.83	.61
EFF	3.97	4.07	4.04	3.89	.29

CHAPTER 8

RESULTS 2:

ASSESSMENT OF THE RELATIONSHIPS OF OCCUPATIONAL STRESS TO DYSFUNCTION IN THE CONTEXT OF AN EXPANDED MODEL

This chapter addresses the second series of research questions. It examines the relationship of the occupational stressors experienced by women teachers with several measures of their mental and physical functioning, job satisfaction and perceived job effectiveness. Personality, coping, social support and life stress variables are investigated to assess how they affect the relationship between occupational stress and dysfunction.

Before the research questions are considered there is a description of the procedures used to select the appropriate data set and to test for potential bias in the regression statistics.

8.1 SELECTION OF THE DATA SET

Since the following analyses involve assessing relationships between and among a number of variables, they require a data set that includes only cases with summary scores for all of the key variables. Initially each summary score was calculated for a respondent only if every item on the scale was answered. An examination of missing data revealed that, in most cases, respondents tended to omit only one or two of the items in a scale. Eliminating all such cases for the subsequent analyses reduced the number of cases for model testing to 295. When

summary scores were estimated or prorated for respondents with at least 80% complete data for each scale, 551 cases had summary scores for all of the key variables and the means and standard deviations for the distributions were virtually unchanged from those calculated for only cases with 100% complete data. All of the subsequent analyses were performed on the data set containing 551 cases.

8.2 TESTS FOR POTENTIAL BIAS IN REGRESSION STATISTICS

There are a number of conditions that may lead to difficulties in the estimation of regression statistics, as well as a number of restrictive conditions under which they can be validly interpreted as indices of the effects of the variables with which they are associated (Pedhazur, 1982). Assumptions underlying multiple regression analysis are that there are no measurement errors, that the relationship of Y on X is linear and that the model is correctly specified. Violations of these assumptions can lead to biased results and misleading interpretations. Multicollinearity, or correlation among independent variables can also affect regression statistics by creating imprecise estimates of the coefficients (Pedhazur, 1982).

8.2.1 MEASUREMENT ERRORS.

In multiple regression, the existence of measurement error in the dependent and/or the independent variables leads to a downward bias in the estimation of R^2 . Errors of measurement in the independent variables may also lead to either an upward or a downward bias in the

estimation of regression coefficients (Pedhazur, 1982). Most measurement errors are difficult to detect. However, the reliabilities of the instruments used as indicators of the constructs describe some of the known measurement error in the model. The reliability of each of the instruments in the model are displayed in Table 8.2.1.

The reliability data that are available tend to fall within the range that might be expected for self-report instruments of this type (Nunnally, 1959, 1967). Unfortunately, no data exist for five of the instruments.

8.2.2 LINEARITY

This data set includes nine dependent and nine independent variables and each relationship was tested separately for linearity. This was done using the following strategies: 1) examining bivariate scatter plots of each independent with each dependent variable, and, 2) adding a quadratic term for each of the independent variables into the two and three variable models, as well as the full model, to identify significant increases in variance accounted for by the quadratic terms. The results of these tests are described for each dependent variable separately. Table 8.2.2 shows the bivariate relationships where adding the quadratic term significantly improves prediction of the dependent measure.

TABLE 8.2.1
 RELIABILITY COEFFICIENTS FOR EACH INSTRUMENT IN THE STUDY MODEL.

VARIABLE	RELIABILITY COEFFICIENT
Occupational Stressors	.85
Life Stressors	.97
General Social Support	.74 - .87
Work Support	unknown
Spousal Support	unknown
Coping Effectiveness	.83
Anxiety	.85 - .95
Energy	.77 - .93
Organization	.75 - .92
Esteem	.84 - .95
Burnout	.66 - .89
Treatment	unknown
Mental Health	.70 - .85
Absence From School	unknown
Symptoms	.79
Chronic Conditions	.89
General Health	unknown

TABLE 8.2.2

LINEARITY OF RELATIONSHIP BETWEEN INDEPENDENT AND DEPENDENT VARIABLES

DEPENDENT	U-STRESS	L-STRESS	ANXIETY	ESTEEM	ENERGY	ORGANZ	COPEFF	GSUP	WSUP
MHIND	*		*		*		*		*
BURNOUT				*	*		*		*
TRTMNT			*				*		*
EFF	*		*		*		*		*
SATFAC	*						*		*
SYMPTOMS									
HEALTH									
ABSCH	*								
CHR83							*		*

* Significant non-linear relationships (P=.05)

There were a number of non-linear relationships in these data. Mental health decreased with an increase in negative life events but the relationship was weaker at high levels of life stress. Mental health also decreased with an increase in anxiety but this relationship was even stronger at high levels of anxiety. Mental health increased with an increase in both energy and organization. These relationships were weaker at high levels of the personality variables.

The relationships between burnout and most of the independent variables appeared to be linear, with the exception of the relationships with three of the personality variables (esteem, energy and organization). In all cases, burnout decreased with an increase in the personality measure and the relationships appeared to level off for high levels of the personality variable.

Two of the independent variables had non-linear relationships with the treatment variable. The likelihood of seeking treatment increased with the level of anxiety, with the relationship stronger for high levels of anxiety. The likelihood of seeking treatment decreased with the level of organization and this leveled off at high levels of organization.

Job effectiveness decreased with an increase in life stressors and this relationship was stronger for high levels of life stressors. Job effectiveness also decreased with an increase in anxiety-proneness and this relationship was more pronounced at high levels of anxiety-proneness. For both energy and organization, an increase in job effectiveness was associated with an increase in the personality variable. These relationships were weaker at high levels of the personality variable.

Job satisfaction decreased with an increase in occupational stressors and this relationship was more pronounced for high levels of job stressors. Job satisfaction increased with an increase in organization but this relationship was weaker for high levels of organization.

All of the relationships between the independent variables and general health and the symptom index appeared to be linear. However, absence from school had a non-linear relationship with life stressors. Absence from school increased with an increase in life stressors but this relationship was weaker for high levels of life stressors. Only organization had a non-linear relationship with chronic conditions. The existence of chronic conditions was less likely as organization increased with a weaker relationship at high levels of organization.

All of these non-linear relationships persisted when they were included in the regressions of the dependent variables on occupational stress in combination with each of the additional variables plus their quadratic terms. However, when all of the variables in the model were entered, followed by the quadratic terms, there were only a few marginally significant quadratic terms and there was no significant difference in the amount of variance accounted for by the addition of the terms. This suggests that the non-linear relationships should be considered in the examination of the relationship of occupational stressors and each of the other variables singly. However, they are either less important when the full model is examined or collinearity has decreased the precision of the estimates of the coefficients.

TABLE 8.3.1

PEARSON CORRELATIONS BETWEEN INDEPENDENT AND DEPENDENT MEASURES

INDEPENDENT VARIABLES	DEPENDENT VARIABLES								
	MENTAL HEALTH			JOB SPECIFIC		PHYSICAL HEALTH			
	MHIND	BURNOUT	TRTMNT	SATFAC	EFF.	HEALTH	ABSCH	SYMPTOM	CHR83
O-STRESS	-.45	.49	.30	-.45	-.21	.20	.16	.35	.11
ANXIETY	-.49	.49	.18	-.24	-.16	.21	.16	.35	.04*
ENERGY	.31	-.46	-.11	.31	.24	-.26	-.17	-.29	.02*
ESTEEM	.25	-.32	-.04*	.13	.23	-.26	-.02*	-.16	.12
ORGANZ	.05*	-.11	-.05*	.01	.17	-.06*	-.02*	-.05*	-.10
COPEFF	.33	-.36	-.11	.26	.14	-.09	-.09	-.25	.04
GSUP	.31	-.40	-.12	.18	.22	-.13	-.03	-.18	.03*
WSUP	.23	-.26	.10	.28	.16	-.16	-.11	-.17	.01*
L-STRESS	-.45	.37	.29	-.14	-.13	.26	.21	.27	.13

* Not significant at P=.05

statistics. If there are interrelationships among the independent variables, they can affect the regression statistics by leading to imprecise estimates of the coefficients or by increasing the standard errors of the regression coefficients and reducing the likelihood of statistical significance (Pedhazur, 1982). The following procedures were used to test for multicollinearity: 1) examination of the zero-order correlations among the independent variables, 2) examination of the determinant of this correlation matrix and its inverse, and 3) regression of each independent variable on all of the other independent variables.

Examination of the correlations among the independent variables, presented in Table 8.2.3, revealed that most of them were statistically significant and ranged from .03 to .42. Although none of these associations were extremely strong, there was some indication of multicollinearity. The determinant of the inter-correlation matrix was fairly close to zero (.27), suggested that considerable multicollinearity exists (Pedhazur, 1982). The fact that the diagonal of the inverse matrix contained values of 1.28, 1.44, 1.30, 1.38, 1.40, 1.34, 1.07 and 1.40, indicated that there is no single variable contributing to the multicollinearity but rather moderate associations among all of the variables (Pedhazur, 1982). The regression of each independent variable on all of the others confirmed this finding. In every case, there was a significant F ($P=.01$) for the regression and at least three of the independent variables had significant regression coefficients.

It is obvious from the earlier discussion of the conceptual problems in stress research that the independent variables in this model

TABLE 8.2.3

PEARSON CORRELATIONS AMONG INDEPENDENT VARIABLES

	O-STR	L-STR	GSUP	WSUP	ANXI	ENER	ESTM	ORG	COPE
O-STRESS	1.00	.41	-.21	.33	.29	-.19	-.06*	-.09	.30
L-STRESS		1.00	-.28	-.11	.28	-.06*	-.02*	-.06*	-.16
GSUP			1.00	.28	-.25	.30	.32	.16	.24
WSUP				1.00	-.16	.17	.17	.01*	.17
ANXIETY					1.00	-.29	-.35	.06*	-.24
ENERGY						1.00	.41	.16	.18
ESTEEM							1.00	.10	.11
ORGANZ								1.00	.03*
COPEFF									1.00

* not significant (P = .05)

would not be expected to be orthogonal. These tests of multicollinearity confirm this and indicate the need for caution in interpreting the regression coefficients in the analyses as if they were completely orthogonal.

8.3 QUESTION 1:

Are occupational stressors related to physical and psychological functioning, job satisfaction and job effectiveness for women elementary school teachers?

Table 8.3.1 presents the zero-order correlations of occupational stressors, as well as the other variables in the model, with each of the dependent variables.

Occupational stressors are related to all of the dependent measures ($P=.05$). They are positively related to burnout, treatment-seeking, poor perceived general health, absence from school, symptoms and recent chronic conditions. They are negatively related to mental health, job satisfaction and perceived job effectiveness. The strongest relationships are between occupational stressors and mental health, burnout and job satisfaction and the weakest are with absence from school and chronic conditions. Occupational stressors accounts for 20-24% of the variance in mental health, burnout and job satisfaction and about 2% in absence from school and chronic conditions.

TABLE 8.3.1

PEARSON CORRELATIONS BETWEEN INDEPENDENT AND DEPENDENT MEASURES

INDEPENDENT VARIABLES	DEPENDENT VARIABLES								
	MENTAL HEALTH	JOB SPECIFIC	PHYSICAL HEALTH						
	MHIND	BURNOUT	TRTMNT	SATFAC	EFF.	HEALTH	ABSCH	SYMPTOM	CHR83
O-STRESS	-.45	.49	.30	-.46	-.21	.20	.16	.35	.11
ANXIETY	-.49	.49	.18	-.24	-.16	.21	.16	.35	.04*
ENERGY	.31	-.46	-.11	.31	.24	-.26	-.17	-.29	.02*
ESTEEM	.25	-.32	-.04*	.13	.23	-.26	-.02*	-.16	.12
ORGANZ	.05*	-.11	-.05*	.01	.17	-.06*	-.02*	-.05*	.10
COPEFF	.33	-.36	-.11	.26	.14	-.09	-.09	-.25	.04
GSUP	.31	-.40	-.12	.18	.22	-.13	-.03	-.18	.03*
WSUP	.23	-.26	.10	.28	.16	-.16	-.11	-.17	.01*
L-STRESS	-.45	.37	.29	-.14	-.13	.26	.21	.27	.13

* Not significant at P=.05

8.4 QUESTION 2:

Are occupational stressors related to the dependent measures when each of the following constructs: personality, coping, social support and major life events, is controlled?

Although occupational stressors are related to each of the dependent measures, these relationships could be affected by the fact that occupational stressors are also associated with the other variables in the model. These relationships, detailed in the first row of Table 8.2.3 are the relationships represented by the arrow from the other variables to occupational stressors in Figure 3.1.1. Although it is impossible in a cross-sectional study to identify the sequence of events or causality from observed relationships, these associations between occupational stressors and the other variables in the model could suggest either that the other variables are potentially confounding or that they have indirect relationships with the dependent variables by changing the level of occupational stressors.

If these other independent variables are confounding, the relationships of occupational stressors with the dependent measures might be spurious ones resulting from the associations of both occupational stressors and the dependent measures with the other variables. However, if the relationships are indirect ones, these variables may decrease the level of occupational stressors (in the case of coping or self-esteem) and therefore dysfunction or they may increase occupational stressors (in the case of anxiety-proneness or life stressors) and consequently dysfunction.

This second research question considers how the relationship between occupational stressors and dysfunction changes when each of the other factors is controlled. To do this, occupational stressors were examined in combination with each of the other factors to discover how much the presence of each of the other variables changed the relationship between occupational stressors and the measures of dysfunction.

Ordinary least squares regression methods were used when the dependent measure was continuous and logistic regression analysis was used for the two dichotomous dependent measures (TRTMNT and CHR83).

Table 8.4.1 gives the standardized regression coefficients for occupational stressors when each dysfunction measure was regressed on occupational stressors alone and then in combination with personality, coping, social support and life events separately. A series of detailed tables describing these analyses are included in Appendix D.

As would be expected, the magnitude of the BETA coefficients for occupational stress are almost always reduced because of the association between occupational stress and the other variables. However, the relationship between occupational stressors and the dependent measures remains significant when each of the other variables is controlled in every case except one. When life stressors are controlled, the modest relationship of occupational stressors with chronic conditions disappears. These data indicate that occupational stressors are related to the various dysfunction measures and, for the most part, that these relationships are not spurious ones because of relationships with personality, coping, social support or life stressors. In the case of chronic conditions, the relationship might be a spurious one because of the relationship of life stressors to both chronic conditions and occupational stressors.

TABLE 8.4.1

STANDARDIZED REGRESSION COEFFICIENTS FOR OCCUPATIONAL STRESSORS ALONE
AND IN COMBINATION WITH PERSONALITY, COPING, SOCIAL SUPPORT
AND MAJOR LIFE EVENT VARIABLES SEPARATELY

	MIND	BURNOUT	TRTMNT ¹	SATFAC	EFF	HEALTH	ABSCH	SYMPTOMS	CHR831
0-STRESS ALONE	-.45***	.49***	.44**	-.46***	-.21***	.21***	.16***	.35***	.17**
WITH ANXIETY	-.33***	.38***	.36**	-.43***	-.18***	.17***	.13***	.17***	.17**
WITH ENERGY	-.40***	.41***	.42**	-.41***	-.18***	.17***	.13**	.31***	.12*
WITH ESTEEM	-.43***	.47***	.44**	-.45***	-.20***	.21***	.21**	.34***	.18**
WITH ORGANZ	-.44***	.48***	.44**	-.46***	-.20***	.21***	.16**	.35***	.12*
WITH COPEFF	-.31***	.34***	.39**	-.37***	-.14***	.16***	.14**	.28***	.17**
WITH G5UP	-.38***	.43***	.41**	-.44***	-.18***	.19***	.16***	.33***	.12*
WITH WSUP	-.41***	.45***	.44**	-.41***	-.19***	.18***	.14**	.33***	.19**
WITH SPSUP	-.43***	.45***	.48**	-.48***	-.24***	.21***	.15**	.36***	.12*
WITH L-STRESS	-.32***	.41***	.35**	-.49***	-.21***	.23**	.09*	.29***	.12

*P=.05, ** P=.01, *** P=.001.

1. Standardized coefficients for dichotomous variables calculated using $B1=B \text{ var}(u^1)$ where B is the unstandardized coefficient and $\text{var}(u^1)$ is the variance of the independent variable (Schleselman, 1976).

Although the relationships between occupational stressors and the dysfunction measures remain statistically significant, the data do suggest that some of these variables, particularly anxiety-proneness, coping effectiveness and life stress either change the level of occupational stress and thereby change dysfunction or at least partially confound the relationship.

8.5 QUESTION 3:

What is the joint relationship of occupational stressors and each of the following constructs: personality, coping, social support and major life events with the dysfunction measures? If there is a joint relationship, is it additive or is the relationship of the other variable contingent on the level of occupational stressors?

Question 3 addresses the nature and direction of the joint relationships of occupational stressors and the other variables in the model with the dependent measures. It has already been shown that occupational stressors are positively related to both mental and physical dysfunction and negatively related to mental health, job satisfaction and job effectiveness. However, personality, coping, social support and life stressors also have relationships with these indicators of functioning.

Chapter 3 described several ways that an additional variable can be involved in the association between occupational stressors and each of the dependent measures. It can be positively related or negatively related to the dependent measures. It can have an additive effect

where the relationship of the additional variable is the same at all levels of occupational stressors or it can have an interactive effect where the relationship depends on the level of occupational stressors.

Because these data are cross-sectional, no causality can be implied from observed relationships. When the combined effect of these variables is described as increasing or reducing the level of some dependent measure, it refers to associations with the dependent variables and not to any cause and effect.

In order to assess the nature of the relationships, each dependent measure was regressed on occupational stressors and each of the personality, coping, social support and life stress variables separately, using the moderated regression analysis procedure for isolating interactions described by House (1981). Occupational stressors were always entered first, followed by the variable under consideration and then by the multiplicative interaction term for occupational stressors with that variable. This procedure assesses the degree to which there is a deviation from additivity in the joint relationship (Kleinbaum, et al., 1982).

Some of the relationships between the independent and dependent variables are known to be non-linear. Since it is possible that both additive or interactive relationships could be affected by these deviations from linearity, the relationships that could be affected by non-linearity were also examined by including the quadratic terms for both the variable that has a non-linear relationship with the dependent measure and for the interaction term, to see if their inclusion changed the interpretation of the nature of the joint relationship for

occupational stressors and that variable with the dysfunction measure. In every case but two the simpler model, without the quadratic terms included, led to the same interpretation of the presence of an interaction effect. For several others of the relationships examined, the simpler model missed an existing direct effect that emerged when the quadratic term was included. Although the more complex model including the quadratics may explain more of the variation in the dependent measures, the question being considered is the nature and direction of the joint relationships. Consequently, the simplest model is used to describe these relationships when they are consistent with the results from the more complex model. The more complex model is used only for situations where there is an inconsistency.

The detailed tables describing these analyses are included in Appendix B. Table 8.5.1 provides a summary of the key findings. It gives (1) the direction of the relationship of occupational stressors and each of the variables being considered to each dependent measure, (2) whether the joint relationship is additive or there is a significant interaction. If the other variable is not significant and does not operate jointly with occupational stressors, the table is blank.

It is clear from Table 8.5.1 that, when the other variables operate jointly with occupational stressors, the relationship is almost always additive and not interactive. A significant interaction indicates that the relationship between occupational stressors and the dependent variable depends on the level of the other variables. In order to illustrate this dependence, whenever there was a significant interaction, the regression equation was solved used high and low values for the variables involved and the results were graphed.

TABLE 8.5.1

SUMMARY OF THE DIRECTION AND KIND OF EFFECT WHEN EACH VARIABLE IS CONSIDERED JOINTLY WITH OCCUPATIONAL STRESS

Additional Variables	DEPENDENT MEASURES											
	MENTAL HEALTH			JOB SPECIFIC			GENERAL POOR HEALTH			PHYSICAL HEALTH		
	MIND	BURNOUT	TRTMT	SATFAC	EFF	HEALTH	ABSCH	SYMPTOMS	CHR83			
	Dir.	Kind	Dir.	Kind	Dir.	Kind	Dir.	Kind	Dir.	Kind	Dir.	Kind
O-STRESS	-	+	+	-	-	+	+	+	+	+	+	+
ANXIETY	-	+	+	+	+	+	+	+	+	+	+	+
ENERGY	+	+	+	+	+	+	+	+	+	+	+	+
ESTEEM	+	+	+	+	+	+	+	+	+	+	+	+
ORGANZ	+	+	+	+	+	+	+	+	+	+	+	+
COPEFF	+	+	+	+	+	+	+	+	+	+	+	+
GSUP	+	+	+	+	+	+	+	+	+	+	+	+
MSUP	+	+	+	+	+	+	+	+	+	+	+	+
SPSUP	+	+	+	+	+	+	+	+	+	+	+	+
L-STRESS	-	+	+	+	+	+	+	+	+	+	+	+

+, - direction of the relationship of the variable with the dependent variable
 Add - additive relationship in combination with occupational stress
 Int - interactive relationship in combination with occupational stress
 blank - coefficient not significant at p=.05

Anxiety-proneness has an additive effect with occupational stressors in the same direction. It is negatively related to mental health, job satisfaction, perceived job effectiveness and perceived general health and positively related to the likelihood of seeking treatment, absence from school and symptoms. In the case of burnout, there is an interaction between anxiety-proneness and occupational stressors that is displayed graphically in Figure 8.5.1. The main effects dominate and the interaction is not in the expected direction. It would be expected that high levels of anxiety-proneness would intensify the effect of high occupational stressors on burnout but the data suggest either that high anxiety-proneness has a modest buffering effect with high stressors or that those who have low anxiety are more affected by high stressors.

Energy level has an additive effect in the opposite direction to occupational stressors because it is positively related to mental health and job satisfaction and negatively related to poor general health and symptoms. The joint relationships of energy level and occupational stressors to burnout and absence from school are interactive. These relationships are depicted in Figures 8.5.2 and 8.5.3. In the case of burnout (8.5.2), the linear effect of energy level dominates. Low energy level is associated with higher burnout at both high and low levels of stressors. The modest interaction does not appear to be the expected moderating effect but reflects either that high energy is less important at high levels of stressors or that, with low energy, the burnout potential is already high even in the low stressor condition. Figure 8.5.3 depicts the interaction of occupational stressors and energy level for absence from school. In this case, a

FIGURE 8.5.1

INTERACTION OF OCCUPATIONAL STRESS AND ANXIETY-PRONENESS FOR BURNOUT

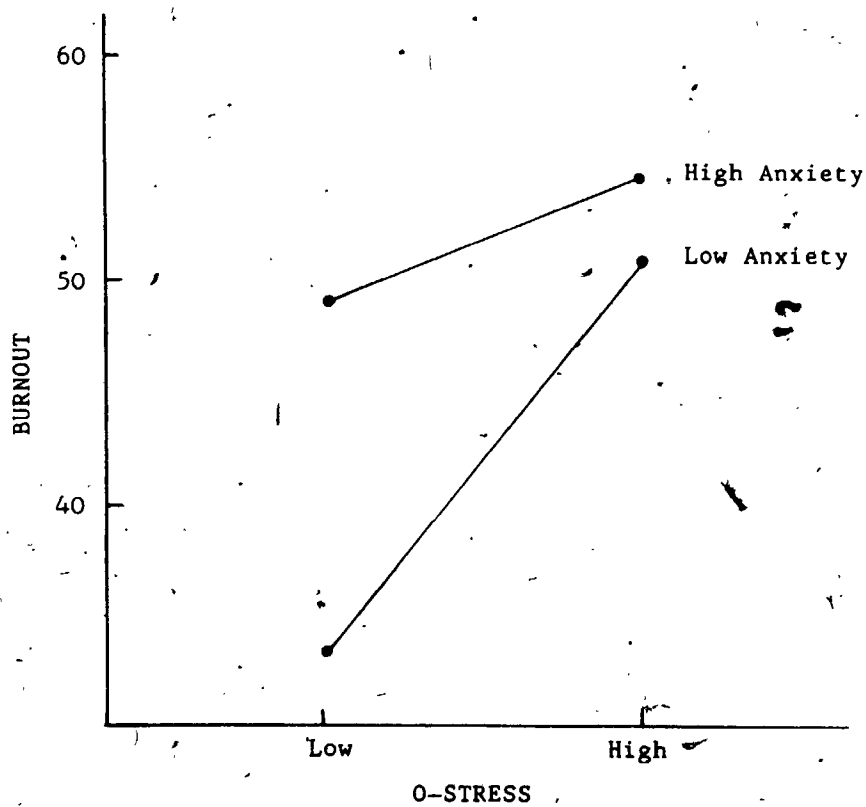


FIGURE 8.5.2

INTERACTION OF OCCUPATIONAL STRESS AND ENERGY LEVEL FOR BURNOUT

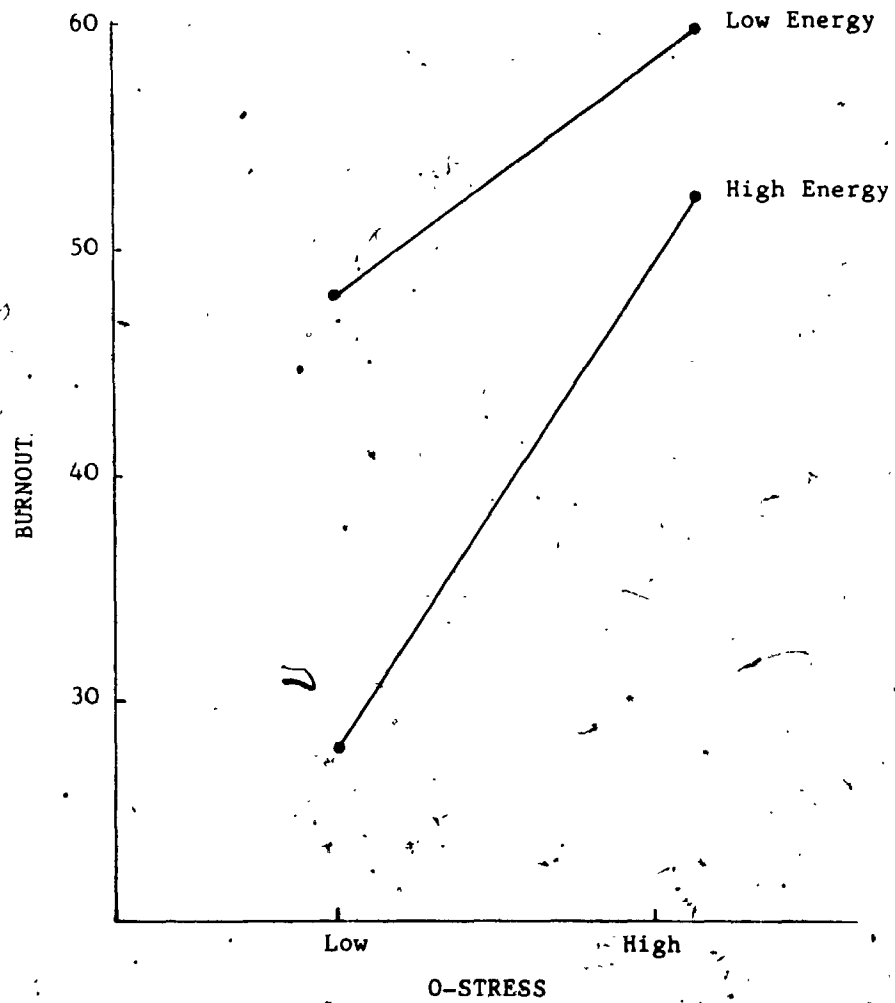
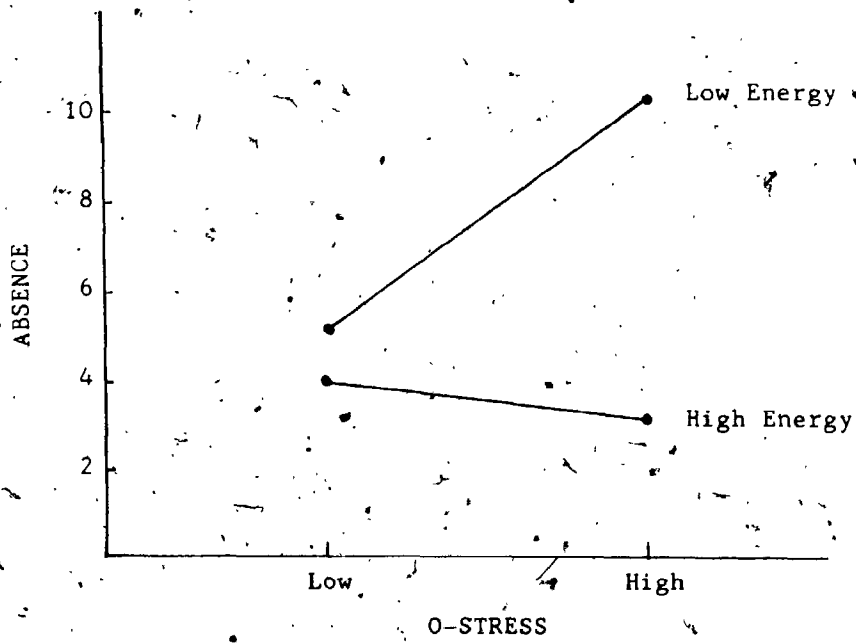


FIGURE 8.5.3

INTERACTION OF OCCUPATIONAL STRESS AND ENERGY LEVEL
FOR ABSENCE FROM SCHOOL



high energy level does moderate the effect of high occupational stress on absence from school. With high energy a high level of stress is not associated with a high number of days absent but if energy level is low, the number of days absent increases with high occupational stress.

Self-esteem has additive joint relationships with occupational stress in the opposite direction, through its positive relationship to mental health, job satisfaction, perceived job effectiveness and its negative relationship to poor general health, burnout and symptoms. It has an additive relationship in the same direction as occupational stress through its positive relationship to the likelihood of having a chronic condition.

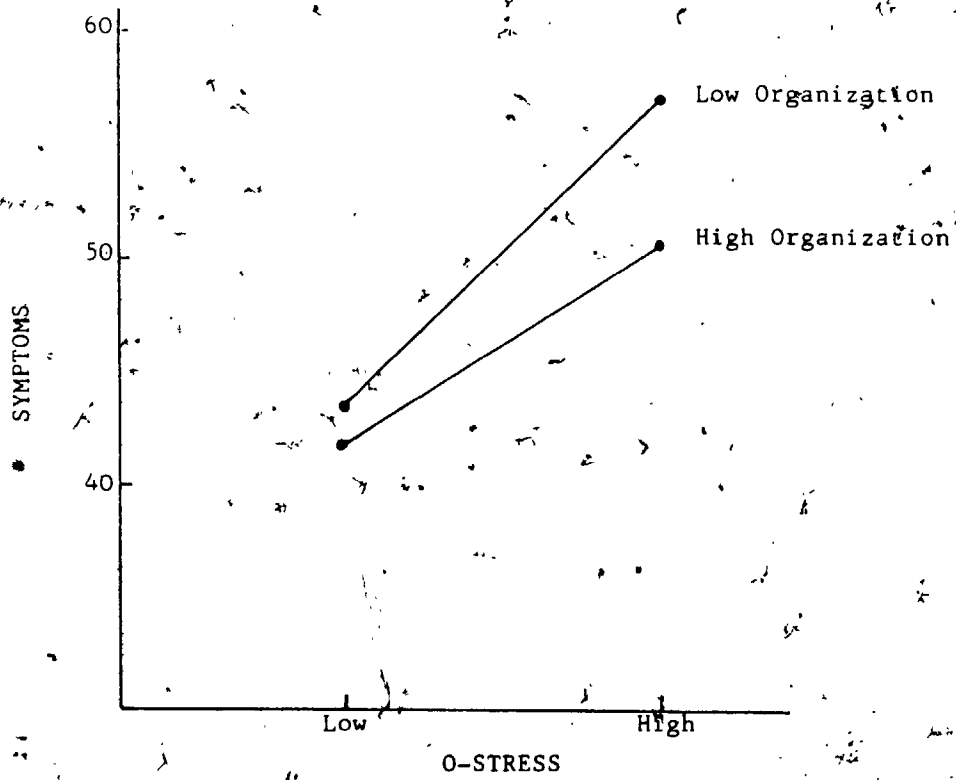
Level of organization has an additive joint relationship in the opposite direction with occupational stress because it is positively related to mental health and perceived job effectiveness and negatively related to burnout and the existence of chronic conditions. The interaction between level of organization and occupational stress for symptoms is depicted in Figure 8.5.4. Level of organization appears to buffer the effect of occupational stress on symptoms. It is not important at low levels of occupational stress but a high level of organization reduces symptoms when occupational stress is high.

Effective coping operates additively with occupational stress, in the opposite direction, through its positive relationship to mental health, job satisfaction, perceived job effectiveness and its negative relationship to poor general health, burnout and symptoms.

General social support operates additively in the opposite direction with occupational stress because it is positively related to

FIGURE 8.5.4

INTERACTION OF OCCUPATIONAL STRESS AND LEVEL OF ORGANIZATION FOR SYMPTOMS



mental health and perceived job effectiveness and negatively related to poor general health and symptoms. It operates interactively with occupational stress for burnout as is shown in Figure 8.5.5. In this case the main effects dominate and the interactive effect is not a buffering one. Instead it suggests that the existence of good social support is less protective for high levels of occupational stress, or that high support is more protective at low levels of stress.

Work support operates additively with occupational stress, in the opposite direction, through its positive relationship with mental health, job satisfaction and perceived job effectiveness and its negative relationship with poor general health and burnout.

Spousal support, for women who are married or cohabiting, has an additive effect with occupational stress, in the opposite direction, because it is positively related to mental health and job satisfaction and negatively to burnout and the likelihood of seeking treatment. Spousal support and occupational stress have an interactive relationship to perceived job effectiveness that is shown in Figure 8.5.6. With low spousal support, occupational stress appears to have no effect on perceived job effectiveness but when spousal support is high occupational stress reduces perceived effectiveness.

Life stress operates additively in the same direction with occupational stress because of its negative relationship with mental health and its positive relationship with poor general health for burnout, the likelihood of seeking treatment and symptoms. They operate interactively for absence from school and perceived job effectiveness. Figures 8.5.7 and 8.5.8 show these relationships. In the case of absence from school (Figure 8.5.7), it appears that high

FIGURE 8.5.5

INTERACTION OF OCCUPATIONAL STRESS AND GENERAL SOCIAL SUPPORT FOR BURNOUT

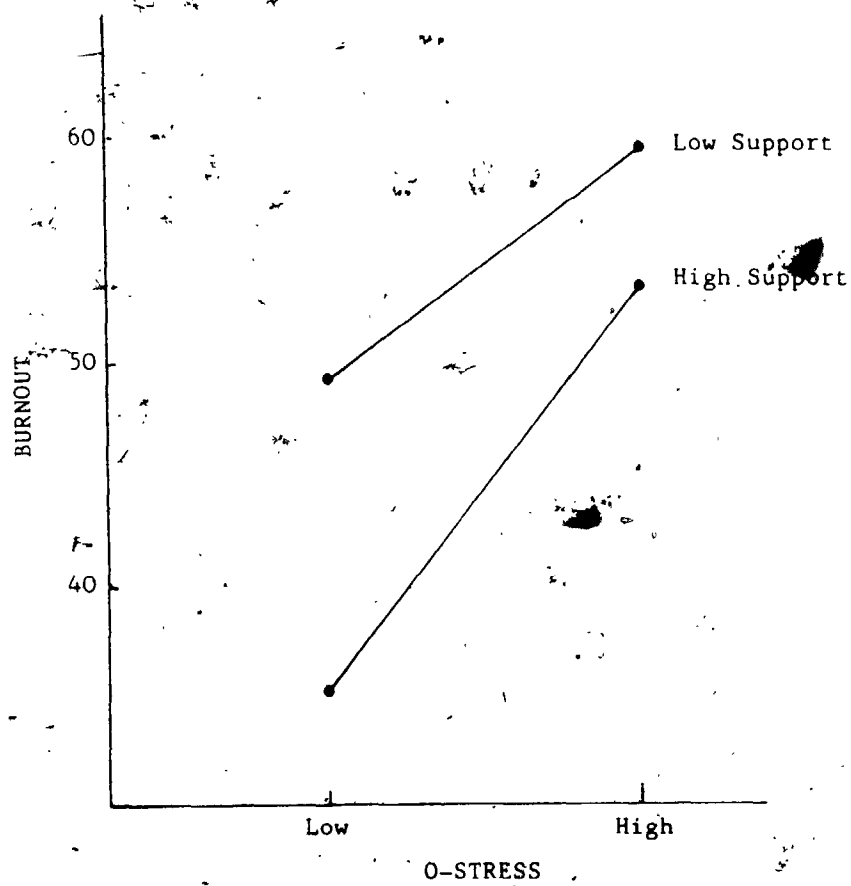


FIGURE 8.5.6

INTERACTION OF OCCUPATIONAL STRESS AND SPOUSAL SUPPORT
FOR PERCEIVED JOB EFFECTIVENESS

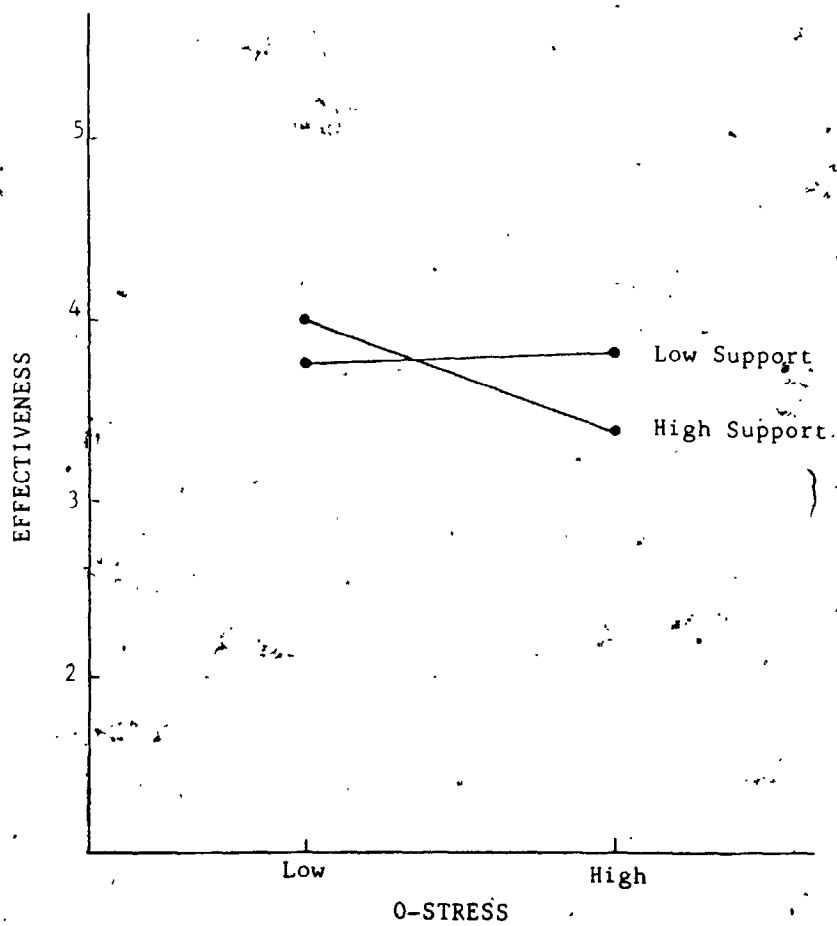


FIGURE 8.5.7

INTERACTION OF OCCUPATIONAL STRESS AND LIFE STRESS FOR ABSENCE FROM SCHOOL

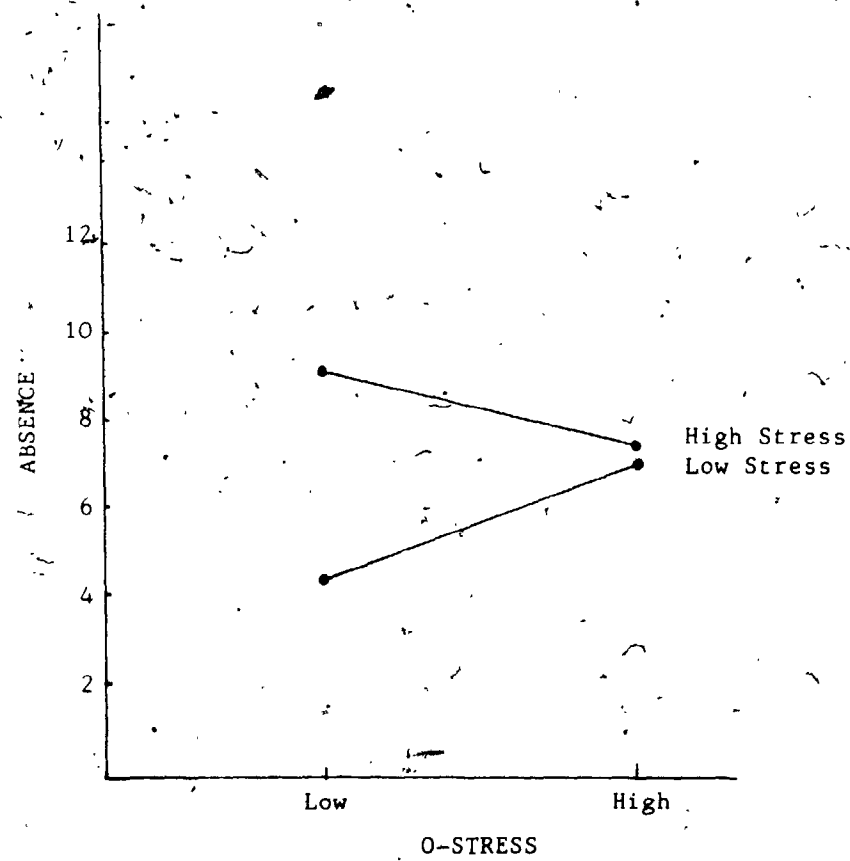
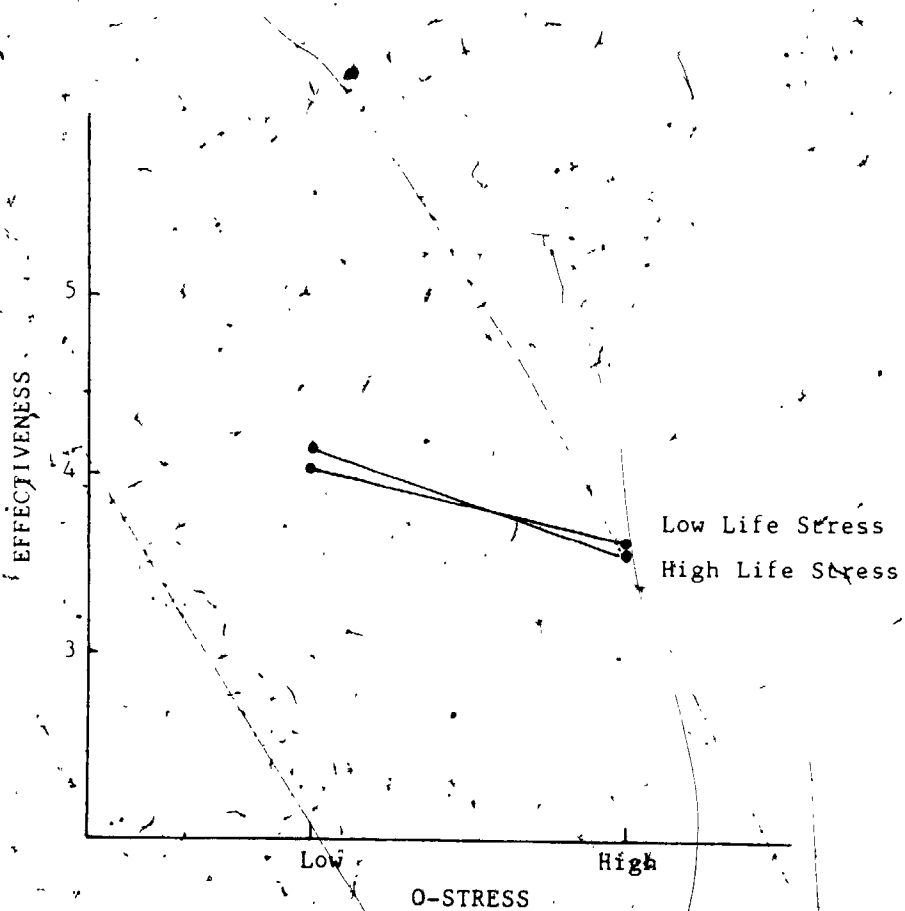


FIGURE 8.5.8

INTERACTION OF OCCUPATIONAL STRESS AND LIFE STRESS
FOR PERCEIVED JOB EFFECTIVENESS



Life stressors keep these teachers away from school and high occupational stressors do not increase the days absent. Occupational stressors only increase absence when life stressors are low. The modest interaction between occupational stressors and life stressors for job effectiveness (Figure 8.5.8) suggests that when occupational stressors are high, high life stressors intensify the impact of occupational stressors on perceived job effectiveness.

8.6 QUESTION 4:

What is the relationship of occupational stressors to dysfunction when all of the other constructs in the model are taken into account at the same time?

Although occupational stressors have been shown to be an important contributor to each of the dysfunction measures when the other variables in the model are controlled singly, it is clear that there is considerable overlap both conceptually and statistically (see Section 8.2.4 - Multicollinearity) among all of the variables under consideration and it is not known how these interrelationships affect the relationship of occupational stressors to dysfunction. In order to explore this issue, a model was constructed that examined occupational stressors, controlling for all of the other factors in the model. Because non-linear relationships and/or interactions might affect the interpretation of this analysis, the model was also examined including multiplicative interaction terms and

quadratic terms for the variables. Although a few of these terms achieved statistical significance, none of them changed the interpretation of the results so the most parsimonious model has been presented.

Table 8.6.1 gives the standardized regression coefficients for each variable when all of the other variables in the model are controlled. These results indicate that occupational stressors still have a substantial negative relationship with mental health and job satisfaction and a modest one with perceived job effectiveness. They have a positive relationship with burnout, treatment-seeking and symptoms but are no longer related to perceived general health, absence from school or chronic conditions.

8.7 QUESTION 5:

What is the relative importance of each of the variables in the model when all of the others are controlled?

The ultimate aim of occupational stress research is to discover the circumstances under which occupational stress is harmful and to isolate ways in which the adverse effects of occupational stress can be combated. The results reported in Table 8.6.1 can help to isolate those other variables that, regardless of how they operate, significantly affect dysfunction when they are considered in combination with occupational stressors.

The relative importance of the other variables in the model varies considerably depending on which dysfunction measure is being considered

TABLE 8.6.1

STANDARDIZED REGRESSION COEFFICIENTS WHEN ALL OF THE VARIABLES ARE ENTERED AT THE SAME TIME

	DEPENDENT VARIABLES								
	MENTAL HEALTH	BURNOUT	TRIMNT1	SATFAC	EFF	HEALTH	ABSCH	PHYSICAL HEALTH SYMPTOMS	CHR831
O-STRESS	-.14***	.21***	.29**	-.37***	-.10*	.02	.04	.19***	.08
L-STRESS	-.24***	.13***	.23**	.09*	-.04	.20***	.15***	.09*	.11
ANXIETY	-.25***	.22***	.10	-.05	-.00	.07	.07	.19***	.13
ENERGY	.10***	-.25***	.08	.21***	.09	-.21***	-.17***	-.14**	-.00.
ESTEEM	.02	-.04	.03	-.03	.11**	.05	.08	-.00	.28**
ORGANZ	-.03	-.02	.01	-.05	.11**	-.02	.03	-.01	-.18**
CUPEFF	.19***	-.18***	.16	.16***	.08	-.05	-.00	-.08	.10
GSUP	.15***	-.11***	.02	-.02	.06	.01	.07	.00	.10
MSUP	.01	-.02	.01	.12***	.04	-.10*	-.08	-.04	-.01
Adj. R ²	.48	.53	N/A	.31	.12	.12	.07	.22	N/A

1. Standardized coefficients for dichotomous variables calculated using $B1=8 \text{ var}(u1)$ where β is the unstandardized coefficient, and $\text{var}(u1)$ is the variance of the independent variable (Schleselman, 1976)

*P=.05, ** P=.01, *** P=.001

A number of the variables are significantly related to mental health. Life stressors, anxiety-proneness and occupational stressors are negatively related, while energy-level, coping effectiveness and general social support are positively related. Life stressors and anxiety-proneness are slightly more important than the others. The same variables affect burnout. Occupational stressors, life stressors and anxiety-proneness are positively related to burnout while energy level, coping effectiveness and general social support are negatively related. Occupational stressors, energy level and anxiety-proneness are slightly more important than the others. Only occupational stressors and life stressors are related to the likelihood of seeking treatment. Occupational stressors, energy level, coping effectiveness and work support are all positively related to job satisfaction. Occupational stressors, self-esteem, and level of organization are positively related to perceived job effectiveness. Although occupational stressors are not related to either poor general health or absence from school, life stress is positively related to both of them and level of energy is negatively related to both of them. Life stressors and anxiety-proneness are positively related to symptoms and energy level is negatively related to them. Occupational stressors are not related to chronic conditions but self-esteem is related positively and organization negatively.

When married women are considered separately and spousal support is considered with the other variables (Table 8.7.1), spousal support is also important for increasing mental health and reducing burnout and the relationship of general support is reduced somewhat. Spousal support also appears as an important variable in reducing the likelihood of seeking treatment.

TABLE 8.7.1
 COEFFICIENTS FOR THE FULL MODEL, INCLUDING
 SPOUSAL SUPPORT FOR MARRIED WOMEN

	MHIND		BURNOUT		TRTMNT ¹		SATFAC		EFF		HEALTH		ABSCH		SYMPTOMS		CHR83 ¹	
	Beta	Beta	Beta	Beta	B	Beta	Beta	Beta	Beta	Beta	Beta	Beta	Beta	Beta	Beta	Beta	Beta	B
O-STRESS	-.16***	.22***	.03**	-.38***		-.16**	.02	.02	.20***	.01								
L-STRESS	-.22***	.11***	.06*	.08		-.02	.24***	.22***	.13*	.06*								
ANXIETY	-.29***	.17***	.04	-.11*		-.00	.07	.07	.21***	.01								
ENERGY	.13***	-.29***	-.05*	.21***		.08	-.20***	-.20***	-.16**	.01								
ESTEEM	-.02	.00	.01	.04		.12*	.04	.04	.02	.05*								
ORGANZ	.03	.01	.03	.11*		.09	-.03	.03	.01	-.05*								
COPEFF	.14***	-.11**	-.16	.11*		.06	-.05	-.05	-.05	.09								
GSUP	.09***	-.08	.02	-.06		.00	.03	-.02	-.02	.00								
WSUP	-.00	.00	.01	.12**		.07	-.06	-.02	-.02	-.02								
SPSUP	.17***	-.12**	-.04**	.09		.02	.06	.10	-.10*	-.00								

¹ the regression coefficients for TRTMNT and CHR83 are unstandardized

8.8 ASSESSMENT OF CONTROL VARIABLES

It is always possible that these observed relationships are the result of two variables being related to some confounding variable such as age, sex, marital status or SES. Several of these potential confounders have been controlled by only including women in a particular occupation in the study. However, a number of demographic and life-style variables were included in the questionnaire to assess other possible confounders. Some of these control variables are expected to be associated with one or another of the independent measures because they measure the same underlying constructs, at least in part (e.g. marital status and social support). Controlling for these variables in the analysis could reduce the target relationships inappropriately by removing some of the shared variance from the analysis prematurely. Because it is the relationship of control variables to both the independent and the dependent variables that make it a potential confounder, the relationship of the control variables to the dependent variable were considered first. A series of one-way ANOVA tests were performed to assess the relationship between the continuous dependent variables and the control variables. Chi-squared tests were performed for the dichotomous variables. Table 8.8.1 gives the P-values for these tests.

Most of these control variables are not related to the dependent measures. The marital status difference for general health arises mostly because women living common-law perceived their health to be poorer than all other groups. Family income has a significant relationship with several dependent measures. However, there is no consistent pattern for

the group means and it is difficult to interpret these findings. Teachers in smaller communities perceive that they are less effective as teachers than those in larger communities. The significant relationship between cigarette smoking and absence has no consistent pattern of means. Perceived fitness level and the frequency with which the respondents engaged in physical exercise have significant relationships with a number of the dependent measures. An examination of the means for the different groups confirms that those women who see themselves as most fit and those who exercise more often are consistently in better health. However, they rate their teaching effectiveness lower than the less fit groups and they are less satisfied with their jobs.

All of the a priori potential confounders were entered into the analysis with all of the key variables to discover whether or not they changed any of the relationships or the conclusions that might be drawn from them. Although age and perceived fitness level were related to several of the dependent measures, these relationships did not change the relationships of the key variables in the model and therefore were not confounders.

TABLE 8.8.1:

SIGNIFICANCE OF DIFFERENCES* ON DEPENDENT MEASURES FOR DIFFERENT
LEVELS OF SELECTED DEMOGRAPHIC AND LIFE STYLE VARIABLES

CONTROL VARIABLES	DEPENDENT VARIABLES							
	MENTAL HEALTH		JOB SPECIFIC		PHYSICAL HEALTH			CHR83
	MHIND	BURNOUT	TRTMNT	SATFAC	EFF	HEALTH	ABSCH	
Age								
Marital Status						.01		
Family Income	.02	.03						
Type of Community								
Size of Community					.02			
Cigarette Smoking							.04	
Alcohol Use								
Fitness Level	.001	.001		.01	.001	.001	.01	.001
Exercise Frequency		.01			.03		.04	.05

* entries are the actual P values for the test of significance if the test was significant at below P=.05.

8.9 SUMMARY OF RESULTS

8.9.1 MAJOR DESCRIPTIVE FINDINGS

- 1) This sample of women teachers did not find teaching particularly stressful. Only 22% said teaching was very or extremely stressful.
- 2) The kinds of occupational events that the women saw as negative almost all involved insufficient time for themselves or conflicts of some kind - between curriculum and what is best for students, between work and home, with other staff or with the school system (strike, inadequate facilities, or materials).
- 3) There were a number of events or conditions that were consistently seen as positive - highly motivated students, promotion or job change, taking courses, conferences with parents, extra-curricular activities and being observed or evaluated by the principal.
- 4) The coping strategies used most frequently involved keeping things in perspective, minimizing difficulties and talking to friends, family or colleagues.
- 5) The coping strategies seen as most effective almost all involved making time for self by hiring a cleaning lady or sharing household chores, socializing, balancing time between work and play, hobbies, taking time off work, listening to music, taking a trip, exercising and laughing.

- 6) Only eating was seen as a generally counter-productive coping strategy. All of the others were seen to help by some of the women.
- 7) These women saw themselves as well-supported by family, colleagues, principal, and spouses (for those who are married).
- 8) Although these women were, on average, not very anxiety-prone and had high self-esteem and high levels of energy and organization, there was considerable diversity in the sample for all of these personality variables.
- 9) The most negative life events for this sample were those involving a death, problems with police, arguments with family or friends or financial problems.
- 10) Having children, getting engaged or married, improvement in relationships or having money were viewed as positive.
- 11) These women were generally in good mental and physical health, satisfied with teaching and saw themselves as effective teachers.
- 12) There were very few differences by marital status or marital status/child care categories for the key variables. Divorced women had higher life event scores and single parents had higher life event scores and lower social support and coping scores.

8.9.2 MAJOR RELATIONAL FINDINGS

- 1) Occupational stressors were related to mental health, physical health, job satisfaction and job effectiveness. These relationships were stronger for mental health and job satisfaction than for job effectiveness and physical health.
- 2) Occupational stressors were still related to mental health, physical health, job satisfaction and job effectiveness when personality traits, coping effectiveness, social support and life events were controlled.
- 3) When the other variables in the model were assessed in combination with occupational stressors, the joint relationship was almost always an additive one. When interactions occurred, they did not usually support the intensifying or buffering hypothesis that might be expected. Only the interactions of occupational stressors and energy level with absence from school, occupational stressors and level of organization with symptoms and occupational stressors and life stressors with perceived job effectiveness were consistent with expectations.
- 4) When all of the other variables in the model were controlled, occupational stressors were still related to mental health, job satisfaction, perceived job effectiveness, burnout and symptoms but were no longer related to perceived general health, absence from school, or chronic conditions.

5) The relative importance of the other factors in the model varied depending on which dysfunction measure was being considered. Life stressors, anxiety-proneness, coping, occupational stressors and general social support were important for mental health. Life stressors and anxiety-proneness were slightly more important than the others. Energy level, anxiety-proneness and occupational stressors were most important for burnout but coping, life stressors and social support were also important. For married women, spousal support was important and the relationship of general support was reduced. Only occupational stressors and life stressors changed the likelihood of seeking treatment, except for married women where spousal support was also important. Occupational stressors, energy level, coping and work support were important for job satisfaction. Occupational stressors, self-esteem, and organization were important for perceived job effectiveness; Occupational stressors, life stressors, anxiety-proneness and energy level were important for symptoms. Occupational stressors were not related to general health or absence from school or chronic conditions but life stressors and level of energy were related to general health and absence. Self-esteem and organization were related to chronic conditions.

CHAPTER 9

DISCUSSION AND IMPLICATIONS

9.1 INTRODUCTION

The focus of this study was to create a more complete model of the relationship between occupational stressors and several different kinds of functioning by including measures of personality, coping effectiveness, social support and life stressors. These constructs were particularized for women elementary school teachers and the study examined them and the relationships among them within this relatively homogeneous population.

9.2 CHARACTERIZATION OF THIS SAMPLE OF WOMEN TEACHERS

The purpose of the first part of the study was to describe women elementary school teachers in terms of the nature and prevalence of occupational stressors, social support structures, personality traits, coping mechanisms, life stressors and health status.

Only 22% of the women found teaching a stressful experience. The results support the view that teaching is not particularly stressful and in this regard are consistent with those from a number of other studies (Kyriacou and Sutcliffe, 1978; Bensky et al., 1980; Feitlar and Tokar, 1982). It is of interest that these women teachers do not see teaching as particularly stressful. They find it less stressful than teachers in many other studies. This might suggest that women teachers in Ontario are under less stress from their jobs than teachers in other jurisdictions.

The events that they saw as most stressful tend to fall into several of Cooper's (1982) categories and include many of the same stressors that have been found in other investigations of teacher stress (Cichon, 1979; Nash, 1980; Kyriacou, 1980; Saville, 1981). They include characteristics of the job, role conflicts, relationships at work and the home-work interface. As was expected, a number of the most important stressors are connected with the dual role that many women play. Even though they are not feeling undue occupational stress, it appears that women teachers are experiencing a conflict between their dual-roles that leaves them little time for themselves and requires them to balance work and home responsibilities.

The coping strategies most frequently used by these women tended to be palliative ones designed to reduce the emotional impact of the stressful condition. This is consistent with some other studies with teachers and women (Pearlin and Schooler, 1978; Kyriacou, 1980). However, the mechanisms seen as most effective included both direct active and palliative behaviours and, once again, many of the important strategies were ones that alleviate the demands of the dual role. Women teachers seem to use a considerable number of different coping strategies and they tend to find their strategies effective. Often the strategies used by the most women are not seen as the most effective. Generally, however, the strategies that they opt to use are seen as helping, in some way, to cope with the stresses of teaching.

The fact that these women saw themselves as well supported at home and at work is consistent with the finding of Syrotuik and D'Arcy (1983), the only other study that considered social support for women teachers. This suggests that women teachers have a range of support

people available to them and can turn to any of them to talk about either work-related or personal concerns. They can also count on them for help in getting things done.

The comparability of the sample women with the normative samples on all of the personality variables indicates that women teachers are fairly typical of women in the general population (Jackson, 1978). The fact that they have experienced relatively few major life events is also consistent with studies in other populations.

The scores on the health status measures show that these women are in good health and comparable to the normative, general population sample (Brooks, 1978). They miss fewer days of work ($X=5.6$) than working women in general in Canada ($X=9.0$) (Statistics Canada, 1985), although they also work fewer days in the year than most employees. They describe themselves as about as satisfied with their jobs as teachers in other studies (Holdaway, 1978).

In general, the status of ~~women~~ elementary teachers in the province of Ontario appears to be favourable. They do not find their jobs particularly stressful. They have effective coping strategies and good support structures. They have personality traits that are typical, have experienced few major life events and enjoy good health.

9.3 RELATIONSHIP BETWEEN OCCUPATIONAL STRESS AND DYSFUNCTION

The results of the study are consistent with the limited existing evidence that occupational stressors for women are, in fact, related to health and to job specific outcomes.

Occupational stressors, when they are assessed alone, are a significant contributor to variation in all of the dysfunction measures and accounts for from 2% to 24% of the variance in them. The relationships are strongest for burnout, job satisfaction and mental health and weakest for chronic conditions. This is consistent with a number of other studies (House and Wells, 1978; House et al., 1979; Burke et al., 1981). The association of occupational stressors with other variables in the model reduces the relationship of occupational stressors with some of the dysfunction measures. However, they still remains as an important contributor when the other variables are taken into account for the job-related and mental health outcomes, for symptoms, but not for other measures of physical health. This suggests that a woman teacher's mental health, job satisfaction and perceived job effectiveness are related to occupational stressors but her general assessment of her physical health, how likely she is to stay away from school and her chronic conditions have little to do with occupational stressors. These results are consistent with others in the occupational stress area that generally find occupational stress is related to mental health and burnout (Kyriacou and Sutcliffe, 1978; Cichon, 1978; Pratt, 1978; Needle et al., 1981) as well as job satisfaction and performance (Holdaway, 1978; Kyriacou and Sutcliffe, 1978; Needle et al., 1981). Some studies do find relationships between occupational stressors and physical illness but the data from this study only support a relationship of occupational stressors with psychosomatic symptoms, not with the other physical health measures. Life stressors, however, are related to the other physical health measures and it may be that the relationships that have been found in other studies between occupational

stressors and physical illness have really been spurious ones because they are both related to life stressors.

It is interesting to note that, for the job-related outcome measures, (burnout, satisfaction, effectiveness) and even for symptoms, the non-traumatic teaching events have a stronger relationship than traumatic life events and there is considerable overlap between the two kinds of events in the explained variance. This is consistent with the findings of Lazarus and his colleagues that "hassles", (i.e., the irritating, frustrating demands that characterize every day transactions with the environment), are better predictors of psychological symptoms than life event scores and that they share much explained variance (Kanner et al., 1981.)

9.4 RELATIONSHIP OF THE OTHER VARIABLES IN THE MODEL TO OCCUPATIONAL STRESS AND DYSFUNCTION

The study included personality traits, coping, social support and major life events to discover their impact on the relationship between occupational stress and dysfunction. Both theory and research suggest that each of these variables is related to either occupational stressors or dysfunction but they have never been considered together to assess their joint effects. As indicated in Figure 3.1.1, these variables can be directly related to either occupational stressors or to dysfunction or have an interactive relationship dependent on the level of occupational stressors. In the first case, the relationship of the variables with dysfunction is potentially an indirect one because such things as having support or coping can operate to reduce or

increase the amount of perceived stress and, indirectly, the ensuing dysfunction. In the case of a direct relationship with dysfunction, the very existence of these variables can operate to increase or decrease dysfunction regardless of stress level. If the relationship is interactive, it suggests that the effect of the other variables is conditional on the level of stress and, if they are moderating or exacerbating the stress reaction, they operate in the presence of high stressors.

The following discussion considers the evidence for these different kinds of relationships in the current study, in light of other research, with particular attention to the importance of each of the other variables when the full model is assessed.

9.4.1 INDIRECT EFFECTS

Although it is impossible to assess the sequence of events in a cross-sectional study or to establish causal directions, there is evidence of possible indirect effects because there are associations between occupational stressors and several of the other variables in the model that reduce the relationship of occupational stressors with the dysfunction measures. Controlling for anxiety-proneness, level of energy, coping effectiveness and social support separately reduces the relationship of occupational stressors to most of the dependent measures. These results support the findings of House and Wells (1978) that work support can reduce work stress, of Garrity-et al. (1977) that personality factors play their greatest role in the prediction of life stress rather than dysfunction and of Billings and Moos (1982) that coping and social resources reduce the effect of life stress.

9.4.2 DIRECT VS. INTERACTIVE EFFECTS

The results of this study support the position that the impact of personality, coping, social support and life events in the occupational stressor-dysfunction process occur, for the most part, as main effects not conditional ones. They also indicate that only some of these variables are important when the full model is assessed and that different additional variables are important, depending on which dysfunction measure is being considered.

When considered jointly, anxiety-proneness is additively related with occupational stressors to mental health, burnout, treatment-seeking, job satisfaction, job effectiveness, general health, absence from school and symptoms and there is an interactive relationship for burnout. This is not consistent with the Endler and Edwards (1982) reports of interactive effects in which anxiety-proneness intensified the impact of high stress. In fact, the interaction for the burnout measure suggests that high anxiety-proneness has a modest buffering effect. It is possible that women who are generally anxious do not experience excessive burnout in a high stress situation because they always feel somewhat burned out whereas women who are normally calm have more intense burnout reactions when stress is high. When all of the other variables are controlled, anxiety-proneness is only related to mental health, burnout and symptoms. This suggests that the other relationships with treatment-seeking, job satisfaction, job effectiveness, health and absence from school are either indirect ones or spurious ones resulting from the association of anxiety-proneness with the other variables in the model.

Energy level is related to every one of the dysfunction measures except treatment-seeking and chronic conditions. The relationship of occupational stressors and energy level to dysfunction is usually additive. In the case of burnout and absence from school it is interactive. For burnout the interaction is not the expected moderating effect but energy level does moderate the effect of occupational stress on absence from school.

Energy level has not been included in any known prior study but the study data suggest that women with a high energy level are generally less likely to report poor mental health, burnout, poor physical health, symptoms or miss days of school and are more likely to be satisfied with teaching and see themselves as effective. However, when energy level is low, burnout is high regardless of stress level. High energy is more effective for reducing burnout when occupational stress is low. Energy level does reduce the number of days absent when occupational stress is high. It is possible that women who are suffering from various kinds of dysfunction feel as if they have little energy. All of the relationships for energy level and the dysfunction measures persist when the other factors in the model are controlled.

When considered jointly with occupational stressors, the level of self-esteem is related to mental health, burnout, job satisfaction, job effectiveness, symptoms and chronic conditions. Its relationship to all of the dysfunction measures except job effectiveness and chronic conditions disappears when the rest of the variables are controlled.

This suggests that the relationships of self-esteem with mental health, burnout, job satisfaction and symptoms are either indirect or spurious ones resulting from relationships with the other variables in the model. Perhaps self-esteem increases energy or the ability to cope or reduces anxiety-proneness and thereby indirectly affects the outcomes. In the case of perceived job effectiveness, self-esteem operates additively with occupational stressors. This suggests that women who feel good about themselves also feel good about the quality of their teaching, regardless of the level of occupational stress they feel. The additive relationship of self-esteem with occupational stress for chronic conditions is somewhat confusing because high self-esteem is positively related to the likelihood of chronic conditions. Perhaps women who have diagnosed chronic conditions and are still teaching are those with a high sense of self-esteem.

Level of organization and occupational stressors are related additively to mental health, burnout, job effectiveness, symptoms and chronic conditions. When all of the factors in the model are controlled, level of organization is only related to perceived effectiveness and chronic conditions. This suggests that the relationship of organization to mental health, burnout, and symptoms are either indirect or spurious. It is possible that organization is related to energy level, or ability to cope or anxiety-proneness and affects the outcome measures indirectly through these relationships. Level of organization does not appear to affect dysfunction, even though much of the self-help literature emphasizes the need for time management and organization. However, women who are well organized seem to view themselves as better teachers and are less likely to suffer from a chronic condition.

Coping effectiveness and occupational stressors have an additive relationship to each of mental health, burnout, job satisfaction, job effectiveness, general health and symptoms but, when all of the other variables in the model are controlled, coping effectiveness is no longer related to general health or symptoms. How well a woman is coping appears to increase her mental health, job satisfaction and perceived effectiveness and decrease burnout but these relationships could also mean that having good mental health, being a good teacher, being satisfied with her job and not feeling burnout could increase her sense of how effective her coping strategies are.

Although general social support in combination with occupational stressors is related additively to each of mental health, burnout, job effectiveness, general health and symptoms, it is only related to mental health and burnout when all of the other factors are controlled. This suggests that a feeling of being valued by others, especially family and friends increases an individual's mental health. This position is supported by other studies (Dean and Lin, 1977; Lin et al, 1979, 1982; Holohan and Moos, 1981). However, social support does not appear to affect job satisfaction, job effectiveness or physical health measures. The interactive relationship of social support and occupational stress to burnout is not as important as the linear effect. Social support does not buffer the effect of occupational stress but appears to be less protective against burnout for high levels of occupational stress. It is obvious that the significant kind of social support for married women comes from their spouse.

The fact that general support is not related to the rest of the dysfunction measures does not agree with the Syrotiuk and D'Arcy (1983)

study that found such relationships. This may indicate either that social support operates indirectly or that it is not important when other variables are taken into account. Although no studies have been done with occupational stress, there are several studies in the life stress area that have considered stress, some personality trait and social support at the same time. They have all found that social support was either minimally or not at all related to health when the other variables are included (Andrews, 1981; Kobasa, 1982; Henderson and Byrne, 1982; Noh, 1984).

Work support in this study has an additive joint relationship with occupational stressors to each of mental health, burnout, job satisfaction, job effectiveness and general health. However, when all of the other variables are controlled, work support is only related to job satisfaction. This suggests that good relationships at work improve job satisfaction but they do not affect any other outcome measure. This is consistent with the few studies that have investigated job satisfaction (House, 1981; Abdel-Halim, 1982), but is inconsistent with other studies that have found that work support is related to some measures of health (Caplan et al., 1975; House, 1974; Pines, Aronson and Kafry, 1980; Syrotiuk and D'Arcy, 1983).

Life stressors and occupational stressors have an additive relationship to each of mental health, burnout, treatment-seeking, perceived job effectiveness, general health, absence from school and symptoms. When all of the other variables are controlled, life stressors are no longer related to job effectiveness. It seems clear that life stressors are important contributors to both mental and physical health and, in the case of general health and absence from school, they are

significant and occupational stressors are not. These results confirm the results of innumerable studies that life stressors are related to all kinds of mental and physical dysfunction and, as such, need to be considered in any attempt to understand occupational stress.

In summary, it appears that a more complete model highlights the fact that personality, coping, social support and life events tend to operate in either an indirect or an additive way, and do not protect the individual or exacerbate the effect of high occupational stressors. Rather they have a general impact through their direct relationships with either occupational stressors or dysfunction. It also appears that many of these variables do not have the expected effect when they are all considered together. If the variables are categorized into the four classes of variables depicted in figure 3.1.1, these data suggest that only two of the four personality variables are important.

Anxiety-proneness is only an important contributor for mental health variables and symptoms. Energy level is important for almost all of the functioning measures. Within the support variables, general social support and spousal support are only important for the mental health variables, work support is only important for job satisfaction. Coping is important for the mental health variables and for job satisfaction. Life stressors are important contributors for almost all of the functioning variables. These results reinforce the belief that the relationships between these other factors and occupational stressors and dysfunction are extremely complex and cannot be considered in isolation.

9.5 LIMITATIONS OF THE STUDY

As with any piece of research, this study has limitations and weaknesses that affect the interpretation of the results. As mentioned in earlier chapters, there are also both conceptual and methodological issues in the stress research area generally that have not as yet been successfully resolved. Although the present study attempted to improve on some earlier work, it still contains many of these generic problems. This section describes some of the features of this study that might limit interpretation.

9.5.1 EFFICACY OF THE THEORETICAL MODEL

The first chapter of this study indicated that there are no clear and generally accepted definitions of terms in occupational stress research, nor is there a recognized model of the occupational stress process. The present study has followed the particular theoretical model outlined in Chapter 3 that includes a number of hypothesized contributors and postulates the direction of their impact. There is, however, no definitive support for this model as an adequate representation of the relationship between occupational stress and dysfunction. In fact, most of the variables included in this model could be viewed as independent, intervening, or dependent, depending on how the process is conceptualized. For example, self-esteem could be viewed as an outcome variable and illness could be a stressor. It is even possible to view mental illness as a precursor of more serious

chronic conditions. There is nothing inconsistent about the notion, especially over time, that a particular construct should change domains or that some other ordering of the variables would provide a more accurate picture of the underlying reality. However, these alternatives are not reflected in this model and have not been assessed in this study.

Even though the constructs included in this model are based on current theory, it is increasingly obvious that there is confusion and lack of clarity about the definition of the constructs themselves and the boundaries between them. This problem is not unique to this study but pervades much of stress research, as has been noted recently by several authors in the area (Miller and Ingham, 1979; Cooke, 1980; Billings and Moos, 1981; Ursin and Muriison, 1983; Wells, 1984; Baker, 1985). To the extent that it was possible, the constructs in this study were conceptualized as separate entities and the best available instruments were selected to measure them. However, it is obvious that there are some logical overlaps between constructs.

The results from this study highlight these conceptual difficulties. Among the coping strategies cited as most effective are such things as interacting with people, socializing and talking to family and friends. These are all also indicators of social support. The same is true when considering the negative life events. A number of them are concerned with separation or alienation from family and friends that could involve a loss of social support. The effective items in the coping checklist that involve balancing time and making time may represent a high level of organization.

Although the statistical analysis controls for some of the overlap between these constructs when they are all viewed as independent or intervening variables, there is more difficulty when the conceptual overlap exists between the independent or intervening variables and one or other of the dysfunction variables. As Kasl (1978) has suggested, there is the risk of trivializing the research by simply comparing two measures of a single concept. In this study, the constructs that may fall prey to this trap are anxiety-proneness and coping effectiveness with mental health and energy level with burnout. The scales to measure both of the personality variables (anxiety-proneness and energy level) were designed to measure stable personality traits that persist over time and situations, and the mental health and burnout measures are supposed to be indicators of an individual's state at a point in time. However, it is possible that these are not truly different constructs. The coping effectiveness score may simply be a reflection of perceived mental health. In the current study there is no way to separate these constructs adequately in time in order to establish these differentiations.

Even if all of the constructs were adequately defined this model may not be the best representation. There are innumerable other factors that may have a bearing on the occupational stress-dysfunction process that have not been included in this study. The most notable exclusions are the physiological mediating mechanisms, but there are also such variables as other personality characteristics, other risk factors or genetic predisposition.

9.5.2 THE PROBLEM OF CROSS-SECTIONAL DATA

There are a number of problems associated with the cross-sectional nature of the data in this study. First, it is impossible to establish that the observed relationships are produced by a causal impact of stressors, personality, coping and support on dysfunction rather than the reverse or some pattern of reciprocal causation. Second, several authors have mentioned the inherent time sequences in the theoretical stress process (Garrity et al., 1977, Brown and Harris, 1978; Miller and Ingham, 1979; Lazarus et al., 1980; McGrath, 1982). Cross-sectional studies do not allow for this time lapse. In this study an attempt has been made to include the time lapse by asking the respondents to consider a particular time frame when answering the questions in each section of the questionnaire but this may or may not be adequate. Cross-sectional studies are also not well suited for detecting conditional effects, also because of the time lapse required for a social-psychological or coping variable to react to the stressful event (House, 1981; Wells, 1984). The direct and interactive effects of stress and the other factors in the model may be confounded in cross-sectional studies because of their interrelationships with one another (Thoits, 1982).

9.5.3 ADEQUACY OF MEASUREMENT

Chapter 6 describes the measurements of each of the variables and it is obvious that some of the instruments are more adequate than others. Because several of the instruments were created for the study,

their validity is unknown. Even those instruments that are well-established may not accurately portray the underlying constructs. This is particularly problematic in light of the conceptual difficulties described in the prior section. To the extent that the constructs are not clearly defined, it is difficult to measure them validly and if the instrument fails to measure the construct, no meaningful associations can be demonstrated (Susser, 1981; McGrath, 1982).

The overriding measurement problem with this study is that all of the data is self-report and, since it reflects the respondent's perception, the observed relationships may be a function of some characteristic way of responding, of social desirability, or of her psychological state of mind (Cooper and Marshall, 1978; Kasl, 1978; Cohen, 1979). Self report of this kind also assumes a high level of self-awareness (Cooper and Marshall, 1978).

9.6. STRENGTHS OF THE STUDY

Although there are some problems associated with this study, it has a number of strengths as well. This section describes the features that make it a useful study.

9.6.1. FOCUS ON WOMEN TEACHERS

Because stress research with both teachers and women is rare and no studies were found that focused specifically on this group, women teachers have had to extrapolate from other studies to understand how

occupational stress might affect them. This study investigates women teachers directly and many of the instruments were particularized for this group. It also provides information not only about the relationship of occupational stress to a variety of dysfunction measures but about coping strategies, social support, life stress and personality traits for women teachers.

9.6.2 INVESTIGATION OF A MORE COMPLETE MODEL

This study has attempted to expand the occupational stress-dysfunction model by including not only stressors in the work environment but other life stressors, as well as characteristics of the individual and the kinds of resources that are available to the individual. Even though there are still the aforementioned conceptual problems, the inclusion of these additional constructs in the model and the use of multivariate analysis techniques has helped to isolate the constructs that need clarification and to emphasize the complexity of the process.

9.6.3 SAMPLE SELECTION AND SIZE

Access to E.W.T.A.O. membership files gives this study a strong data base because the sample was selected to represent all women teaching in elementary public schools in the province of Ontario. This provides a broad reference point and ensures that the results are not being influenced by the exigencies of a single school system or

of these schemes for categorizing coping strategies have been developed (Pearlin and Schooler, 1978; Newman and Beehr, 1979; Lazarus, 1980; Billings and Moos, 1981; and Burke and Weir, 1980) but the items on this scale do not fall easily into any of them.

If coping is conceptualized as a changing interaction between the individual and the environment, the particular number or kinds of strategies used is less important than the overall effectiveness of the strategies used, regardless of the form they take. This can be operationalized by using a score that reflects the mean effectiveness rating of the strategies that each respondent indicated having used. This effectiveness score was selected for use in this study, even though it does not identify particular coping styles. The acronym for this variable is COPEFF.

6.5 INDICATORS OF PERSONALITY TRAITS

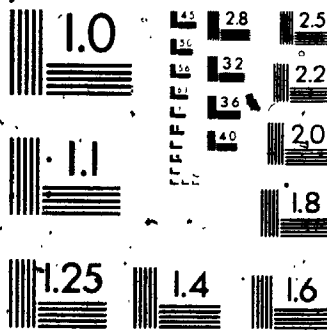
The personality traits of anxiety-proneness (ANXIETY), energy (ENERGY), self-esteem (ESTEEM), and organization (ORGANZ) are represented by the scale scores that are derived from the Jackson Personality Inventory according to the user's manual (Jackson, 1976).

6.6 INDICATORS OF HEALTH STATUS AND JOB-SPECIFIC CONDITIONS

A number of different scores are required to represent the different health status measures in the model. Chronic

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MICROCOPY RESOLUTION TEST CHART
NBS 1010a
ANSI and ISO TEST CHART No. 2



community. In addition, the fairly large sample size allows for reasonable confidence in the statistical reliability of results.

9.6.4 CONTROL OF POTENTIAL CONFOUNDERS

Many of the potential confounders in stress research have been controlled in this study. Both sex and socio-economic status were controlled by investigating only women teachers. Other potential confounders like marital status, children at home, rural-urban living and fitness were controlled in the analysis.

9.7 IMPLICATIONS OF THE STUDY FOR WOMEN TEACHERS.

This study has value because it has looked exclusively at women teachers and particularized some of the instruments for this group. It has also investigated a number of constructs in combination using multivariate analysis techniques to examine complex relationships. Even though the results are not unequivocal, when interpreted conservatively they have implications for women teachers.

The results of this study suggest that, while most women teachers do not find teaching stressful, daily teaching events that are seen as stressful are related to health and to feelings about the job. However, the physical effects are slight. Stressful teaching events are most strongly related to how a woman teacher feels - her mental health, feelings of burnout and satisfaction with her job and, to a lesser degree, with physical symptoms.

APPENDIX A

QUESTIONNAIRE (WITH % RESPONSES)

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more effective coping strategies or by expanding the repertoire of strategies, by building new support structures and exploiting the ones they have, or by changing their typical reactions through behaviour therapy or other cognitive interventions (Hiebert, 1985).

9.8 DIRECTIONS FOR FURTHER RESEARCH

The current status of theory and research on work-related stress, especially for women teachers leaves many questions unanswered. As this discussion has indicated, there are problems of definition and conceptualization, problems of measurement and problems with research design.

The first and most critical issue is to refine the definition and measurement of the relevant constructs. This process will not be simple and should involve much interdisciplinary discussion as well as continued research, such as this study, focussed not only on the particular constructs in isolation but on their relationships with one another. Such effort should be directed towards developing clear operational definitions and valid and reliable measurement tools.

There should be more concentration on longitudinal studies of women teachers at work, perhaps through natural experiments, observing significant events and transitions that may better reveal the process by which particular teaching events affect well-being and the way that different women adapt to these events, both in the work environment and elsewhere. Research strategies must be found that combine the best of epidemiological sampling with the subtlety that comes from studying individuals.

Such studies could begin to establish causal associations, unravel some of the complex, reciprocal relationships that are likely to occur and better characterize the transactional nature of the stress process.

It is also essential to collect more objective data through observation, alternative measurements or interviews with significant others to reduce the potential bias of self-report.

The results of both large-scale correlational studies such as this one and naturalistic observations should be used to plan intervention strategies at both the institutional and individual level that can be systematically evaluated to determine their effectiveness.

Ultimately, the psychological and sociological circumstances must be tied to the physiological mechanisms that are at the basis of mental and physical breakdown to truly establish a link between these constructs.

CHAPTER 10

SUMMARY AND CONCLUSIONS

A comprehensive questionnaire was developed and sent to a random sample, stratified by age and marital status, of 1160 women elementary school teachers in Ontario. The data derived from their responses provided a detailed description of the sample in terms of teaching-related events that are potentially stressful, coping strategies, selected personality traits, support at home and at work, major life events, health, job satisfaction and demographic characteristics.

The relationship between occupational stressors and a number of different dysfunction measures ranging from job satisfaction to diagnosed chronic conditions was examined within the context of a model, drawn from current theory, that included major life stressors and personality, coping and social support.

This study revealed that the relationships among occupational stressors, personality, coping, social support, life events and dysfunction is very complex and these complexities make it difficult to draw any firm conclusions. However, as research in the area progresses, certain relationships are appearing consistently and being replicated that can lead to a better understanding of occupational stress and its implications for workers.

- (1) The results of this study are consistent with the position that occupational stressors are related to mental dysfunction, symptoms, job satisfaction and perceived job

but does not support the existence of a relationship between occupational stressors and chronic conditions or illness-related behaviour such as missing work or seeking treatment.

- (2) The results support the position that several of the other variables that were included in the model are related to either occupational stressors or to the dysfunction measures. These relationships may reflect a reduction of perceived occupational stressors or an additive effect with occupational stressors based on the independent relationships of the other variables with the dysfunction measures.
- (3) There is no strong indication of the kinds of interactive relationships that would suggest an exacerbating or buffering effect of the other variable on occupational stressors.
- (4) These findings do not provide a basis for consistent accurate predictions of the course of stress-related outcomes but they do suggest possible interventions in the stress-dysfunction process.
- (5) Finally, there is a need for clearer conceptualization of each of the constructs and of the underlying theory to explain the relationships between occupational stressors and dysfunction and this needs to be accompanied by thoughtful empirical assessment of the proposed theories. Neither of these tasks will be easy. However, existing evidence from this study and others continue to suggest that this is a fruitful avenue for exploration.

APPENDIX A

QUESTIONNAIRE (WITH % RESPONSES)

COVER LETTER

FOLLOW-UP POST CARD

TELEPHONE PROTOCOL

QUESTIONNAIRE WITH PERCENT RESPONSES FOR EACH ITEM

HEALTH, STRESS AND COPING SURVEY



for women elementary
school teachers

Note: The Questionnaire sent to teachers was photo-reduced to 8½" x 7", had a canary yellow card-stock cover and was spiral bound.

This research project is designed to investigate health, stress and coping among women elementary teachers in Ontario. The questions included in the survey ask about many aspects of your personal and professional life. This information is necessary so that I can provide a realistic, accurate and comprehensive picture of the working lives of women teachers. Your responses to the survey are anonymous. You will notice that there is a code number on the survey. This is a number assigned by F.W.T.A.O. to make it easier to send reminder notices. I will have your answers with the code number on the survey and F.W.T.A.O. will have your name and the code number. At no time will I have your name, nor will F.W.T.A.O. ever have access to your responses.

There are no right or wrong answers to most of the questions in the survey; just try to answer them in the way that best describes you. The questions have been grouped into sections to make them easier to answer. Try to answer every question.

Please complete the survey and return it to me in the envelope provided before April 30th.

Thank you, in advance, for your participation.

LORNA M. EARL

Department of Epidemiology & Biostatistics
University of Western Ontario

This study is being undertaken with the support and assistance of the
Federation of Women Teachers' Associations of Ontario.

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SECTION 1: TEACHING RELATED EXPERIENCES

Section 1 contains events or circumstances that can occur either in your job or as a result of teaching full time.

Please indicate whether or not you have experienced each of these events or circumstances during this school year by putting a check mark in the appropriate box to the left of the item.

If you check 'yes', indicate the extent to which that event has had a positive or negative impact on you personally by circling the appropriate number to the right of the item.

If you check 'no', do not circle a number on the right.

Experienced During School Year	Event or Circumstance	Impact				
		1 Very Negative	2 Somewhat Negative	3 No Impact	4 Somewhat Positive	5 Very Positive
39	1. I have a new principal.	7	25	11	27	31
39	2. I moved to a different school, class or grade.	0	32	0	22	28
36	3. There are inadequate personal facilities at the school (telephone, parking, washrooms, staff room, etc.)	20	70	6	3	2
52	4. I had to implement one or more new curriculum guidelines.	6	30	15	38	11
3	5. I was involved in a strike.	100	0	0	0	0
3	6. I was promoted.	0	6	6	17	72
34	7. I have been required to teach more than one grade in the same class (i.e. split grade).	11	30	26	10	4
38	8. I helped prepare new curriculum for the Board, the school or myself.	5	20	10	43	22
15	9. I felt as if I didn't have the skills necessary to do my job.	26	65	2	7	0
79	10. I had experiences with students that were emotionally demanding.	29	40	7	11	4
62	11. I have one or more 'exceptional' student(s) in my class on an IP.	20	39	16	17	8

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Experienced During School Year	Event or Circumstance	Impact				
		1 Very Negative	2 Somewhat Negative	3 No Impact	4 Somewhat Positive	5 Very Positive
80	12. I have been required to plan program modifications to meet the individual needs of my students.	6	33	25	26	10
45	13. I have been required to implement a policy or program that I was not directly involved in formulating.	13	44	28	14	2
25	14. I have done something in my job that was in conflict with the expectations of someone to whom I am responsible (e.g., administration, parents).	38	50	5	7	1
42	15. I have had insufficient books, materials, supplies or equipment.	38	55	5	1	1
20	16. I have been involved with Federation activities.	1	8	21	46	23
19	17. I have had an "outside" research or training program in my class.	4	15	16	31	33
10	18. I was criticized by or had a disagreement with an administrator (e.g., principal, supervisory officer, curriculum consultant).	54	35	4	5	2
35	19. I have been working in an area that is generally noisy.	26	49	20	5	0
22	20. I have had a disagreement with a fellow teacher or teachers.	32	56	7	5	0
2	21. I have been threatened with a lawsuit.	55	18	19	0	9
25	22. There have been few career development opportunities.	19	41	40	1	0
6	23. I have applied for a promotion.	8	8	15	45	25
41	24. I have been taking additional course work for upgrading or promotion.	5	19	8	36	32
35	25. I have students whose primary language is not English.	5	35	38	16	5
29	26. There have been inadequate disciplinary sanctions available.	46	48	4	2	0
82	27. I have a class with a wide range of ability.	14	37	22	18	9
55	28. I have had poorly motivated pupils.	31	52	9	6	2
17	29. I have had difficulty maintaining class discipline.	34	55	8	3	0

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Experienced During School Year	Event or Circumstance	Impact				
		1 Very Negative	2 Somewhat Negative	3 No Impact	4 Somewhat Positive	5 Very Positive
93	30. I have had conferences with parents about their child's problems.	3	14	15	37	31
85	31. I have some highly motivated students.	0	2	4	28	67
73	32. I have had more school work to do than I could do properly in a regular working day.	33	55	7	2	2
17	33. I have been concerned about losing my job due to declining enrolments.	51	39	5	2	3
72	34. I have been involved in extracurricular activities at the school.	4	15	18	39	25
2	35. I was notified of unsatisfactory performance in my job.	46	9	27	9	9
12	36. I had a poor relationship with one or more teachers on staff.	44	47	8	1	0
15	37. I have been required to implement curriculum or policy that is in conflict with what I believe is best for my students.	46	52	2	0	0
4	38. I was refused a promotion or transfer.	40	40	8	8	4
16	39. I was threatened, attacked or verbally abused by a student.	46	43	8	1	3
11	40. I have been uncertain about what I'm expected to do in my class.	35	59	4	0	1
6	41. My work has not been challenging.	30	38	5	16	11
1	42. I have had too much time on my hands at school.	50	25	0	25	0
25	43. The work I have done at school over and above my regular teaching duties has not been noticed or appreciated by the administration.	21	64	7	6	3
97	44. I have missed breaks (e.g., recess, lunch, planning periods) because of supervision duty, covering lessons for other teachers, meetings, etc.	24	54	19	2	1
9	45. I have had to do paper work associated with teaching (report cards, IPs, class lists, annual objectives, etc.).	17	45	28	8	3
30	46. I have been teaching in a classroom that is over-crowded.	47	48	5	0	1

Experienced During School Year	Event or Circumstance	Impact				
		1 Very Negative	2 Somewhat Negative	3 No Impact	4 Somewhat Positive	5 Very Positive
52	47. I was evaluated or observed by my principal or supervisory officer.	3	18	16	26	38
90	48. I have attended school-related meetings (noon hour, after school, evening, etc.)	4	30	35	26	5
36	49. I have frequently had to travel a long distance or through bad weather to get to school.	25	55	18	2	0
18	50. I have had to leave work during the school day to attend to a family responsibility.	17	40	34	7	2
53	51. I have had to make choices between a school activity and a home activity.	21	58	18	2	1
29	52. I have arranged child care for my own child(ren).	9	30	36	14	11
65	53. I have been distracted at home by work obligations.	26	65	8	1	0
26	54. I have been distracted at work by thoughts about home.	22	62	10	5	1
22	55. I have argued with my husband/mate about my work commitments.	38	55	6	2	1
41	56. I have had conflicts between work and life outside work.	28	68	4	1	0
90	57. I have responsibility for household duties.	9	41	38	8	4
39	58. I have felt guilty about neglecting my own family.	31	66	2	1	0
61	59. There has been community criticism of schools and teachers.	34	53	12	1	0
8	60. I have decided to change jobs.	2	24	10	39	26
73	61. I have often not had time for myself because of school and home responsibilities.	46	50	3	1	0
84	62. I have often not had time to relax during the school day.	44	49	6	1	1
<input type="checkbox"/> <input type="checkbox"/>	63. If any other work-related experience have had an impact on you during this school year, please list them and rate them below: _____ _____ _____					

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The following are a number of statements about your opinion of your job. Consider the items carefully and indicate how strongly you agree or disagree by circling the appropriate number to the right of the item (64-67) or checking the appropriate box (68, 69).

	Strongly Agree	Agree	Unsure	Disagree	Strongly Disagree
64. I generally look forward to going to work.	25	58	7	8	2
65. I will probably stay in education until retirement.	34	37	21	4	4
66. If I had the opportunity to do other things I would probably enter teaching again.	26	37	24	9	5
67. If a close friend or member of my family were considering teaching as a career I would encourage them.	14	35	30	16	5

68. In general, how stressful have you found teaching this year?	6	<input type="checkbox"/> Not at all stressful
	29	<input type="checkbox"/> Mildly stressful
	43	<input type="checkbox"/> Moderately stressful
	16	<input type="checkbox"/> Very stressful
	6	<input type="checkbox"/> Extremely stressful
69. Overall, how satisfied do you feel with your present job?	35	<input type="checkbox"/> Very Satisfied
	45	<input type="checkbox"/> Somewhat satisfied
	6	<input type="checkbox"/> Neither satisfied nor dissatisfied
	11	<input type="checkbox"/> Somewhat dissatisfied
	4	<input type="checkbox"/> Very dissatisfied

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SECTION 2: COPING

Section 2 asks questions about how you cope with job-related conditions which are stressful for you. The following list includes activities which people may use to cope with stressful circumstances at work or to alleviate feelings of stress which arise from those circumstances.

Please indicate whether or not you have used these activities during this school year as a way of coping with stressful conditions at work, by putting a check mark in the appropriate box to the left of the item.

If you check yes, indicate how effective that coping strategy was for you in coping with stressful circumstances at work or alleviating feelings of stress which arose from work, by circling the number to the right of the item that best describes how effective it was.

If you check no, do not circle a number on the right.

Used During This School Year	Event or Circumstance	Effectiveness				
		Made Things A Lot Worse	Made Things A Little Worse	Didn't Change Anything	Helped A Little	Helped A Lot
31	1. I daydreamed.	1	4	43	43	8
74	2. I socialized.	0	0	5	50	44
64	3. I treated myself to a present, dinner out, movie, etc.	0	0	5	52	43
80	4. I tried to increase efficiency.	0	3	11	62	23
78	5. I reassured myself that everything would work out all right.	0	1	21	61	17
44	6. I ate.	27	25	31	13	3
11	7. I went to a doctor or counsellor for advice and/or assistance.	4	4	15	45	32
29	8. I cried.	4	4	37	47	9
81	9. I talked to friends or family about the problem.	0	2	7	60	32
81	10. I talked to my colleagues about the problem.	0	1	10	58	32
64	11. I asked the advice of colleagues.	0	0	10	59	31
78	12. I took work home.	4	9	20	52	15
64	13. I prayed or attended religious services.	0	0	11	55	34

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Used During This School Year	Event or Circumstance	Effectiveness				
		Made Things A Lot Worse	Made Things A Little Worse	Didn't Change Anything	Helped A Little	Helped A Lot
62	14. I tried to learn new teaching approaches from my colleagues.	1	1	8	73	18
21	15. I smoked cigarettes.	8	8	51	24	8
17	16. I took time off work.	0	2	4	55	40
25	17. I engaged in sex.	0	1	15	42	42
8	18. I had a massage.	0	0	11	46	43
4	19. I went on a '4 in 5' pay program so that I can take a year off.	4	0	8	35	54
22	20. I considered leaving teaching.	1	11	65	17	6
16	21. I used systematic muscle relaxation.	0	0	11	62	27
8	22. I took a course in stress management.	0	2	17	51	29
15	23. I asked for clarification about job expectations.	1	6	26	53	14
38	24. I tried to forget about the problem.	3	6	50	39	3
1	25. I submitted my resignation.	14	0	29	43	14
48	26. I got my family to help with housework.	1	1	5	62	32
61	27. I watched television.	1	3	26	58	12
77	28. I read.	0	1	8	59	32
94	29. I tried to keep things in perspective.	0	0	11	55	34
58	30. I avoided confrontations.	3	4	23	52	19
70	31. I got enough sleep.	1	2	10	46	40
50	32. I engaged in physical exercise (jogging, fitness classes, etc.).	0	2	6	44	47
9	33. I took tranquilizers.	3	5	13	56	23
30	34. I had a cleaning lady or housekeeper come and do housework.	0	0	4	26	70
63	35. I said 'no' to some activity or responsibility.	1	2	9	54	34

Used During This School Year	Event or Circumstance	Effectiveness				
		Made Things A Lot Worse	Made Things A Little Worse	Didn't Change Anything	Helped A Little	Helped A Lot
4	36. I applied for a sabbatical, study leave or leave of absence.	0	0	7	26	67
36	37. I took courses to up-grade my skills	6	11	16	44	23
46	38. I consciously balanced my time between work and recreation.	0	1	7	53	39
81	39. I tried to find solutions to remove a stressful condition.	0	2	13	64	21
62	40. I tried to find out more about a problem.	0	1	15	64	20
47	41. I separated my work life and my home life.	1	1	8	51	40
18	42. I withdrew from a difficult situation.	3	7	26	47	18
62	43. I analyzed the situation and changed my strategy.	1	1	8	65	26
53	44. I drank coffee or tea.	3	8	54	31	5
82	45. I tried to minimize the difficulties and look at the good things.	0	1	12	63	24
67	46. I tried to see the humour in the problem.	0	1	10	57	32
12	47. I meditated.	0	1	17	53	30
21	48. I drank alcohol.	3	10	43	41	3
77	49. I tried to anticipate problems and plan ahead.	0	2	8	66	24
37	50. I yelled or shouted to let off steam	9	17	26	39	9
10	51. I got involved in a behaviour modification program to change habits (e.g., to learn to relax, lose weight, quit smoking).	2	2	12	56	29
51	52. I got involved in non-work related interests and hobbies.	0	1	4	52	43
63	53. I made time for myself.	0	0	2	54	44
57	54. I listened to music.	0	0	8	57	35
3	55. I used biofeedback.	0	0	9	57	35
8	56. I asked for a transfer.	4	6	40	33	18

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Used During This School Year	Event or Circumstance	Effectiveness				
		Made Things A Lot Worse	Made Things A Little Worse	Didn't Change Anything	Helped A Little	Helped A Lot
56	57. I built body resistance to frustrations through regular sleep, exercise, and proper diet.	0	0	7	55	39
30	58. I played a musical instrument or sang.	0	0	10	53	37
75	59. I interacted with people outside work.	0	0	5	54	41
78	60. I laughed.	0	0	5	44	50
1	61. I used mood altering drugs (marijuana, LSD, etc.).	0	10	30	30	30
47	62. I worked harder.	2	10	18	57	13
41	63. I took a trip.	1	2	4	37	56
19	64. I got involved in extra work-related activities (e.g., F.W.T.A.O., curriculum committee, etc.).	3	17	31	34	15
24	65. I talked to my pet.	1	0	19	49	31

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SECTION 3: SUPPORT

The following questions are about your relationships with other people at work and at home.

Circle the number beside each item which best describes your situation.

	Very Much Like My Experience	Much Like My Experience	Somewhat Like My Experience	Not Very Much Like My Experience	Not At All Like My Experience
A. PRINCIPAL					
1. My principal/supervisor would take the time to talk over my <u>work-related</u> problems, should I ever want to.	41	25	19	10	5
2. My principal would take the time to talk over my <u>personal</u> problems, should I ever want to.	29	19	22	14	17
3. My principal/supervisor is very concerned about the welfare of the staff.	31	23	24	13	9
4. My principal/supervisor is helpful to me in getting my job done.	22	22	26	17	13
5. My principal/supervisor goes out of the way to praise good work.	20	18	23	19	20
6. I can count on my principal/supervisor when things get tough at work.	26	21	24	15	13

B. CO-WORKERS

1. Other staff members would take the time to talk over my <u>personal</u> problems, should I ever want to.	39	30	19	8	4
2. Other staff members are helpful to me in getting my job done.	26	32	25	11	5
3. Other staff members would take the time to talk over my <u>work-related</u> problems, should I ever want to.	41	34	18	5	2
4. I can count on other staff members when things get tough at work.	35	32	21	9	4

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If you are NOT married or cohabiting,
skip to part 'D'.

C. SPOUSE/MATE

	Very Much Like My Experience	Much Like My Experience	Somewhat Like My Experience	Not Very Much Like My Experience	Not At All Like My Experience
1. My husband/mate takes the time to talk over my <u>work-related</u> problems.	44	22	18	9	7
2. My husband/mate is someone I can really talk with.	49	20	18	8	5
3. I can count on my husband/mate when things get tough at work.	53	20	16	7	5
4. My husband/mate is helpful to me in getting my job done.	36	21	22	12	10
5. My husband/mate shares responsibility for tasks at home.	46	17	20	11	6
6. My husband/mate appreciates me just as I am.	57	19	16	5	3
7. My husband/mate takes the time to talk over my <u>personal</u> problems.	52	19	17	7	5

D. FRIENDS AND FAMILY

1. My friends and/or relatives would take the time to talk over my <u>work-related</u> problems, should I ever want to.	42	31	19	6	3
2. I can count on my friends and/or relatives when things get tough at work.	39	31	20	7	4
3. My friends and/or relatives are helpful to me in getting my job done.	19	19	33	17	13
4. When I'm with friends I feel completely able to relax and be myself.	43	29	21	7	2
5. I share the same approach to life that many of my friends do.	34	31	26	8	3
6. People who know me trust and respect me.	55	37	7	1	0
7. No matter what happens, I know that my family will always be there for me should I need them.	66	21	10	2	1
8. When I want to go out to do things, I know that many of my friends would enjoy doing these things with me.	36	35	22	5	2
9. I have at least one friend that I could tell anything to.	63	17	10	5	5

D. FRIENDS AND FAMILY - Continued

	Very Much Like My Experience	Much Like My Experience	Somewhat Like My Experience	Not Very Much Like My Experience	Not At All Like My Experience
10. Sometimes I'm not sure if I can completely rely on my family.	50	22	16	9	4
11. My family lets me know they think I'm a worthwhile person.	43	30	18	6	3
12. I feel very close to some of my friends.	45	26	19	7	3
13. People in my family have confidence in me.	57	31	10	3	1
14. People in my family provide me with help in finding solutions to my problems.	29	29	29	11	4
15. People who know me think I am good at what I do.	56	36	8	0	0
16. My friends would take the time to talk over my <u>personal</u> problems, should I ever want to.	51	31	14	3	1
17. I know my family will always stand by me.	66	19	10	3	1
18. Even when I am with friends, I feel alone.	52	23	15	7	2

SECTION 4: PERSONAL DESCRIPTION*

In Section 4 you will find a series of statements that a person might use to describe herself. Read each statement and decide whether or not it describes you.

If you **AGREE** with a statement or decide that it does describe you, answer **TRUE** by putting a check mark in the box marked 'true'. If you **DISAGREE** with a statement or feel that it is not descriptive of you, answer **FALSE** by putting a check mark in the box marked 'false'.

ANSWER EVERY STATEMENT either true or false, even if you are not completely sure of your answer.

True	False	
57	44	1. I am a calm, easy-going type of person.
47	54	2. Some days I am just too tired to do anything.
61	39	3. I often have a task finished sooner than necessary.
40	54	4. I make a better follower than a leader.
59	41	5. When I am waiting for anything, I usually get very anxious.
52	48	6. I was a very active child.
32	67	7. Little things usually slip my mind.
47	53	8. I am usually quite confident when learning a new game or sport.
46	54	9. Something has to be very important before I worry much about it.
28	72	10. Sometimes I can't even find the energy to think.
59	41	11. I prefer to complete a task before resting, rather than taking a 'break' in the middle.
22	78	12. I have never been a very popular person.
62	38	13. I get worried when I am expecting someone and he/she does not arrive on time.
81	19	14. I usually have several projects going at once.
53	47	15. I sometimes have trouble finding things when I need them.

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True	False	
32	08	16. I rarely feel self-conscious in a strange group.
04	36	17. People have told me that I have very steady nerves.
09	31	18. I have no more than an average amount of energy.
04	36	19. It is unusual for me to fall behind in my work.
38	62	20. I am not the type of person one remembers after one meeting.
29	71	21. Occasionally I feel so nervous that I begin to get all choked up.
59	42	22. I avoid spending my time just sitting around resting.
29	71	23. I prefer starting a new task without detailed plans.
59	41	24. It is easy for me to strike up a conversation with someone.
53	47	25. I rarely dwell on past mistakes.
27	73	26. I don't have the necessary stamina to participate in long, involved discussions.
77	23	27. My time is too valuable to be wasted unnecessarily.
38	62	28. I am ill at ease when I am meeting new people.
45	55	29. I frequently worry about whether I am doing my work well.
06	34	30. I lead a busier life than most people.
31	69	31. I can't be bothered making lists of all the things I have to do.
55	45	32. I am seldom at a loss for words.
50	44	33. I usually solve any problems I may have and then forget them.
43	57	34. Some nights I don't even have the ambition to read the newspaper.
82	18	35. I think a high degree of organization is important in anyone's life.
17	83	36. My behavior would be quite awkward if I had to apply for a loan from a bank.

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True	False	
44	56	37. I become upset when something interferes with my schedule.
37	63	38. I enjoy all kinds of vigorous hobbies.
61	39	39. I do not need a neat desk in order to work well.
41	59	40. I am considered a leader in my social circle.
65	35	41. I am not a 'high-strung' person.
54	40	42. If the working day were cut in half, I might be able to get through it without becoming exhausted.
77	23	43. Before I start a task, I like to determine the most efficient way of doing it.
50	51	44. I often wish that I were more outgoing.
64	36	45. Once in a while my stomach feels as if it were tied in knots.
60	40	46. I am rarely too tired to read.
72	28	47. I like to keep my work organized loosely, so that I am not tied down by elaborate plans.
38	62	48. I enjoy stating my opinions in front of a group.
39	61	49. I don't worry very much about the future.
24	76	50. I am not an energetic person.
77	24	51. I do not like to leave things until the last possible moment.
55	45	52. I seem to do more listening than talking in conversations with others.
66	34	53. Once in a while, I get very upset about things that have happened in the past.
45	55	54. I like to be constantly active.
30	71	55. I sometimes start to write letters without finishing them.
67	33	56. People seem to be interested in getting to know me better.
44	56	57. I am not a very excitable person.

1	2	
True	False	
64	30	58. I sometimes feel as if I could sleep for a week.
51	49	59. I seldom misplace things.
35	05	60. I like to remain unnoticed when others are around.
03	37	61. Sometimes I get upset about financial matters.
72	28	62. I don't like to stay in bed very long when I am sick.
47	53	63. I don't feel it is important to make good use of every minute in the day.
40	54	64. I usually try to add a little zest to a party.
29	71	65. I seem to worry about things less than other people do.
70	30	66. I do not feel that I have to keep constantly on the move.
80	20	67. I am very regular in my habits.
30	70	68. I have trouble expressing my opinion.
41	59	69. I often think about the possibility of an accident.
59	41	70. I can easily work on several tasks without becoming tired.
31	09	71. When people visit me unexpectedly, I usually have to apologize for my state of disorder.
77	23	72. I am able to talk intelligently to people in a wide variety of occupations.
48	52	73. I seldom get 'butterflies' in my stomach.
32	68	74. I would be more efficient, if I didn't tire so easily.
61	39	75. I become annoyed with people who are disorganized.
58	42	76. I prefer to go to social functions with a group of people so as not to stand out.
63	37	77. I sometimes feel jittery.
27	73	78. I don't need a lot of sleep to keep up my energy.
19	81	79. I am in such a rush in the morning that I often forget to do something.
61	39	80. I find it easy to introduce people.

SECTION 5: LIFE EVENTS

Section 5 is concerned with major events in your life during this school year. Listed below are a number of events which sometimes bring about change in the lives of those who experience them.

Please indicate whether or not you have experienced each of these events during this school year by putting a check mark in the appropriate box to the left of the item.

If you check yes, indicate the extent to which you viewed the event as having either a positive or negative impact on your life by circling the number to the right of the item that best describes the impact that event had on you.

If you check no, do not circle any number on the right.

Experienced During School Year	Event or Circumstance	Impact				
		1 Very Negative	2 Somewhat Negative	3 No Impact	4 Somewhat Positive	5 Very Positive

A. HEALTH

.53	1. I had a minor illness or injury that required a visit to a doctor or a couple of days off work.	12	36	43	6	4
6	2. I had a serious illness, injury or operation that required hospitalization or a month or more off work.	47	29	8	11	5
25	3. A close relative had a serious illness (from which they did not die).	40	49	4	2	5
8	4. I am or was pregnant (with a wanted pregnancy).	9	6	4	0	72
.3	5. I am or was pregnant (with an unwanted pregnancy).	0	0	0	100	0
.2	6. I had a stillbirth.	100	0	0	0	0
1	7. I had an abortion or miscarriage.	60	30	10	0	0
5	8. I had a baby.	0	6	0	3	91
9	9. Change of life (menopause) began.	5	51	36	5	3
.3	10. I adopted a child.	0	0	0	50	50

B. BEREAVEMENT

1	1. My husband died.	100	0	0	0	0
.2	2. A child of mine died.	100	0	0	0	0

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Experienced During School Year	Event or Circumstance	Impact				
		1 Very Negative	2 Somewhat Negative	3 No Impact	4 Somewhat Positive	5 Very Positive

B. BEREAVEMENT - Continued

9	3. A close family member died (e.g., parent, brother, etc.).	53	30	9	4	5
19	4. A close family friend or relative died (e.g., Aunt, Uncle, Cousin, etc.).	19	60	17	3	1

C. FAMILY AND SOCIAL

6	1. I married.	0	0	9	15	77
11	2. I had increasing serious arguments with my husband.	51	41	4	4	0
18	3. There has been marked improvement in the way my husband and I are getting along.	2	1	2	40	55
2	4. I have been separated from my husband for more than a month because of marital difficulties.	20	7	27	7	40
1	5. I have been separated from my husband for more than a month (for reasons other than marital difficulties).	71	14	0	0	14
2	6. We have gotten back together again after a separation due to marital difficulties.	0	0	0	0	100
2	7. I had an extramarital affair.	0	17	0	42	42
1	8. My husband had an extramarital affair.	56	11	22*	0	11
3	9. I have been divorced.	25	13	25	19	19
4	10. A child of mine became engaged.	0	13	13	30	44
2	11. A child of mine married with my approval.	0	7	7	36	50
2	12. A child of mine married without my approval.	100	0	0	0	0
7	13. A child of mine left home for reasons other than marriage.	17	30	11	28	13
5	14. I became engaged or began a 'steady' relationship.	3	9	0	33	55
3	15. I broke off an engagement.	50	0	0	50	0
3	16. I broke off a 'steady' relationship.	50	25	10	15	0
4	17. I had increasing arguments or difficulties with my fiancé or steady friend.	35	65	0	0	0

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Experienced During School Year	Event or Circumstance	Impact				
		1 Very Negative	2 Somewhat Negative	3 No Impact	4 Somewhat Positive	5 Very Positive

D. FRIENDS AND RELATIVES

5	1. A new person came to live in my household (apart from a new baby or husband).	9	4	12	12	27
15	2. There has been a marked improvement in the way I get along with someone close to me (excluding husband).	2	2	3	44	49
9	3. I have been separated from someone important to me (other than close family members).	32	61	2	4	2
8	4. There has been a serious increase in arguments or problems with someone who lives in my home (excluding husband).	55	41	0	2	2
8	5. There have been serious problems with a close friend, neighbour or relative not living in my home.	60	33	4	2	2

E. EDUCATION

31	1. I started a course (e.g., university course, special education course, principal's course).	8	21	10	36	25
29	2. I completed a course.	2	4	9	36	49
16	3. I studied for, or wrote, important examinations.	19	33	8	21	19
5	4. I failed an important examination.	67	33	0	0	0

F. MOVING

3	1. I moved to a new town or city.	5	23	9	23	41
7	2. I moved to a new residence in the same town or city.	9	15	9	21	47

G. FINANCIAL AND LEGAL

26	1. I had moderate financial difficulties.	19	69	10	2	0
4	2. I had a major financial crisis.	61	35	4	0	0
24	3. I am much better off financially.	1	1	9	47	42
1	4. I was involved in a traffic accident that carried serious risk to the health or life of myself or others.	56	11	11	0	22

Experienced During School Year	Event or Circumstance	Impact				
		1 Very Negative	2 Somewhat Negative	3 No Impact	4 Somewhat Positive	5 Very Positive

G. FINANCIAL AND LEGAL - Continued

8	5. I had minor difficulties with the police or the authorities which did not require a court appearance (e.g., speeding fine).	11	44	43	2	0
3	6. I had important problems with the police or the authorities which led to a court appearance.	50	50	0	0	0
0	7. I had a jail sentence or was in prison.	0	0	0	0	0
3	8. I was involved in a civil law suit (e.g., divorce, debt, custody, etc.)	47	35	18	0	0
4	9. Something I valued or cared for greatly was stolen or lost.	62	31	7	0	0
<input type="checkbox"/> <input type="checkbox"/>	10. If any other major events have occurred to you during this school year, please list them and rate them below. _____ _____ _____					

SECTION 6: HEALTH

This section asks questions about your life style and your health. Some of the questions may appear to be similar but there are differences in the instructions associated with them. Please read all of the instructions carefully and try to answer every item.

A. GENERAL HEALTH

How healthy would you say you have been during this school year?	28	excellent health
	63	good health
	9	poor health
	1	very poor health

B. CHRONIC CONDITIONS

The following is a list of medical conditions that usually last for some time. Indicate whether or not you have had any of these conditions during this school year by checking the appropriate box to the left of the item. If you check yes, indicate the year that this condition was first diagnosed.

Before 83	During 83		Before 83	During 83	
4.5	1.2	High Blood Pressure	.2	.2	8. Tuberculosis
-	2.	Stroke	5.4	2.6	9. Arthritis or Rheumatism
8.3	.2	Diabetes	.5	.2	10. Cancer
.9	4.	Chronic Bronchitis	.3	0	11. Epilepsy
-	5.	Chronic Liver Trouble	1.1	.3	12. Chronic Gall Bladder Trouble
1.4	6.	Heart Trouble	4.8	.9	13. Stomach Ulcer or Duodenal Ulcer
2.9	7.	Asthma	8.6	2.2	14. Other Chronic Condition:
					Specify: _____

C. SYMPTOMS

Here is a list of physical ailments. Please indicate how often you have experienced each of these during this school year by circling the appropriate number beside the item.

	Never	Rarely	Sometimes	Often
1. Cramps in the legs	52	21	23	5
2. Pains in the stomach or indigestion	27	33	29	11
3. Menstrual problems	38	25	24	13
4. Coughing or heavy chest cold	34	37	25	5
5. Sore throat	17	41	33	10
6. Dizziness	52	28	14	2

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C. SYMPTOMS - Continued

	Never	Rarely	Sometimes	Often
7. Swollen ankles	71	17	9	4
8. Headaches	8	38	37	18
9. Tiring easily	8	25	41	27
10. Paralysis of any kind	99	1	0	0
11. Trembling	84	12	4	0
12. Sleeplessness	31	29	30	11
13. Constipation	36	32	25	7
14. Pains in the chest	69	18	12	2
15. Backache	27	28	31	14
16. Shortness of breath	68	21	10	2
17. Loss of Appetite	67	23	7	2
18. Diarrhea	42	39	16	4
19. Allergies	61	14	14	12
20. Nausea	52	33	12	2
21. Stiffness or aching joints or muscles	36	25	27	12
22. Influenza	46	38	15	1
23. Weight gain	30	26	35	9
24. Weight loss	51	29	19	3

D. ABSENCES

1. How many days, in total have you been absent between the first of September and the end of March?

 $\bar{x} = 5.6$ days

2. How many of these days were missed due to illness or injury?

 $\bar{x} = 4.3$ days

E. GENERAL WELL-BEING

The next questions are about how you feel and how things have been going with you. Answer these questions with reference to your feelings and circumstances during the last month by putting a check mark in the box beside the response which best applies to you.

1. How have you been feeling in general? (during the past month)	6 in excellent spirits 24 in very good spirits 35 in good spirits mostly 26 I have been up and down in spirits a lot 6 in low spirits 3 in very low spirits
2. Have you been bothered by nervousness or your 'nervas'? (during the past month)	1 extremely so - to the point where I could not work or take care of things 4 very much so 7 quite a bit 20 some - enough to bother me 40 a little 29 not at all
3. How often were you bothered by an illness, bodily disorder, aches or pains? (during the past month)	2 every day 5 almost every day 7 about half of the time 29 now and then, but less than half of the time 42 rarely 16 none of the time
4. How much energy, pep or vitality did you have or feel? (during the past month)	3 full of energy - lots of pep 40 fairly energetic most of the time 32 my energy level varied quite a bit 17 generally low in energy, pep 7 very low in energy or pep most of the time 1 no energy or pep at all; I felt drained, sapped
5. How happy, satisfied or pleased have you been with your personal life? (during the past month)	12 extremely happy - could not have been more satisfied 38 very happy most of the time 31 generally satisfied - pleased 16 sometimes fairly satisfied; sometimes fairly happy 7 generally dissatisfied, unhappy 2 very dissatisfied or unhappy most or all of the time
6. Have you been under or felt you were under any strain, stress or pressure? (during the past month)	4 yes, almost more than I could stand or bear 20 yes, quite a bit of pressure 24 yes, some - more than usual 35 yes, some but about normal 12 yes, a little 5 not at all
7. Have you been in firm control of your behaviour, thoughts and emotions or feelings? (during the past month)	23 yes, definitely so 36 yes, for the most part 32 generally so 8 not too well 1 no, and I am somewhat disturbed 0 no, and I am very disturbed

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E. GENERAL WELL-BEING - Continued

8. Did you feel depressed? (during the past month)	1 yes, to the point that I felt like taking my life 2 yes, to the point that I did not care about anything 3 yes, very depressed almost every day 15 yes, quite depressed several times 62 yes, a little depressed now and then 18 no, never felt depressed at all
9. Have you been anxious, worried or upset? (during the past month)	2 extremely so, to the point of being sick or almost sick 4 very much 10 quite a bit 28 some, enough to bother me 46 a little bit 9 not at all
10. Did you feel healthy enough to carry out the things you like to do or had to do? (during the past month)	43 yes, definitely so 46 for the most part 9 health problems limited me in some important ways 1 I was only healthy enough to take care of myself 1 needed some help in taking care of myself 0 I needed someone to help me most or all of the time
11. Have you had any reason to wonder if you were losing your mind or losing control over the way you act, talk, think, feel or of your memory? (during the past month)	74 not at all 14 only a little 0 some, but not enough to be concerned or worried 5 some and I have been a little concerned 1 some and I am quite concerned 0 yes, very much so and I am very concerned
12. Did you feel relaxed, at ease or high strung, tight or keyed-up? (during the past month)	5 felt relaxed and at ease the whole month 31 felt relaxed and at ease most of the time or never felt high strung 43 generally felt relaxed but at times felt fairly high strung 6 generally felt high strung but at times fairly relaxed 1 felt high strung, tight or keyed-up most of the time - seldom or never felt relaxed felt high strung, tight or keyed-up the whole month
13. Have you felt so sad, discouraged, or had so many problems that you wondered if anything was worthwhile? (during the past month)	1 extremely so, to the point that I have just about given up 2 very much 5 quite a bit 13 some, enough to bother me 29 a little bit 51 not at all
14. Have you been concerned, worried or had any fears about your health? (during the past month)	1 extremely so 3 very much 7 quite a bit 36 some, but not a lot 24 practically never 29 not at all

E. GENERAL WELL-BEING - Continued

15. Were you generally tense or did you feel any tension? (during the past month)	2 yes, extremely tense, most or all of the time 8 yes, very tense most of the time 29 not generally tense, but did feel fairly tense several times 36 I felt a little tense a few times 23 my general tension level was quite low 3 I never felt tense or any tension at all
16. Did you feel active, vigorous or dull, sluggish? (during the past month)	2 very active, vigorous every day 22 mostly active, vigorous - never really dull or sluggish 52 fairly active, vigorous - seldom dull, sluggish 20 fairly dull, sluggish - seldom active, vigorous 3 mostly dull, sluggish - never really active, vigorous 1 very dull, sluggish every day
	1 2 3 4 5 6 All of the time Most of the time A good bit of the time Some of the time A little of the time None of the time
17. Have you felt downhearted and blue? (during the past month)	1 3 7 23 45 21
18. Have you felt tired, worn out, used up or exhausted? (during the past month)	1 7 14 31 38 9
19. Has your daily life been full of things that were interesting to you? (during the past month)	6 33 21 27 12 2
20. Have you been waking up feeling fresh and rested? (during the past month)	3 27 21 25 16 7
21. Have you been feeling emotionally stable and sure of yourself? (during the past month)	18 43 19 14 6 1
22. Have you felt cheerful, light-hearted? (during the past month)	5 34 25 21 12 2
23. Have you had severe enough personal, emotional, behaviour or mental problems that you felt you needed help? (during the past year)	9 yes, and I did seek professional help 3 yes, but I did not seek professional help 13 I have had (or have now) severe personal problems but have not felt I needed professional help 53 I have had very few personal problems of any serious concern 22 I have not been bothered at all by personal problems during the past year
24. Have you ever had a nervous breakdown?	1 yes, during the past year 3 yes, more than a year ago 97 no

E. GENERAL WELL-BEING - Continued

25. Have you ever felt that you were going to have or were close to having a nervous breakdown?	8 25 67	yes, during the past year yes, more than a year ago no
26. Have you ever been a patient (or outpatient) at a mental hospital, a mental health ward of a hospital, or a mental health clinic, for any personal, emotional, behaviour or mental problems?	1 0 3 96	yes, and I am still going yes, during the past year but not now yes, more than a year ago no
27. Have you ever seen a psychiatrist, psychologist, or psychoanalyst about any personal, emotional, behaviour or mental problems concerning yourself?	3 2 14 82	yes, and I am still going yes, during the past year but not now yes, more than a year ago no

F. BURNOUT

The following questions are similar to some previous ones but these are to be answered with reference to this whole school year. Please indicate how often you have had these feelings during this school year by circling the appropriate number beside each item.

	Almost Never	Rarely	Sometimes	Often	Almost Always
1. Being tired	2	11	47	35	6
2. Feeling depressed	14	33	43	9	1
3. Having a good day	1	4	25	56	15
4. Being physically exhausted	7	20	47	23	3
5. Being emotionally exhausted	7	23	43	23	4
6. Being happy	1	4	24	52	20
7. Being 'giped out'	15	26	36	20	3
8. Being unhappy	15	39	38	7	1
9. Feeling 'burned out'	24	30	32	13	2
10. Feeling rundown	12	28	41	17	3

F. BURNOUT - Continued

	Almost Never	Rarely	Sometimes	Often	Almost Always
11. Feeling trapped	88	27	25	8	2
12. Feeling worthless	51	29	16	4	0
13. Being troubled	18	34	38	9	1
14. Feeling disillusioned and resentful about people	30	34	27	7	1
15. Feeling weak and helpless	46	37	13	3	1
16. Feeling rejected	44	35	17	3	4
17. Feeling optimistic	1	6	28	46	18
18. Feeling energetic	2	7	38	44	9

G. LIFESTYLE

1. How often on the average do you take at least one drink of an alcoholic beverage?	7 16 23 20 7 14 13	every day several times a week about once a week 2 or 3 times a month about once a month less than once a month not at all
2. On the average, how many cigarettes do you smoke in a day?	3 5 3 3 2 3 80	25+ 20 - 24 15 - 19 10 - 14 5 - 9 1 - 5 0
3. How often do you take tranquilizers?	1 2 1 2 1 6 87	every day several times a week about once a week 2 or 3 times a month about once a month less than once a month not at all
4. How tall are you? \bar{x} = Feet <input type="text" value="5"/> Inches <input type="text" value="5"/>		
5. How much do you weigh? \bar{x} = <input type="text" value="136"/> Pounds		

G. LIFESTYLE - Continued

6. What is your ideal weight?	$\bar{x} = 126$	Pounds
7. Compared to other women your age, how would you describe your weight?	33	overweight
	60	normal
	8	underweight
8. Compared to other women your age, would you say that your fitness level is...	24	above average
	54	average
	22	below average
9. How often do you exercise?	10	every day
	33	several times a week
	22	about once a week
	10	2 or 3 times a month
	4	about once a month
	9	less than once a month
	12	not at all

SECTION 7: BACKGROUND INFORMATION

This final section asks some questions about you, your education and your current job.

A. TEACHING

1. What is your current teaching assignment? (E.g., regular class teacher, special education class teacher, guidance, learning resource, speech, itinerant teacher, principal, vice-principal, consultant, etc.) Please be specific.	_____	
2. What grade(s) are you currently teaching?	<input type="text"/>	
3. How many years have you been teaching? (Count this year as one.)	$\bar{x} = 15.5$	
4. How many students are there in your current school?	5	less than 100
	23	100 - 249
	49	250 - 499
	19	500 - 749
	4	750 - 1000
	1	more than 1000
5. How large is the municipality (village, town, city) in which your school is located?	18	less than 2,500
	13	2,500 - 9,999
	17	10,000 - 49,999
	9	50,000 - 99,999
	14	100,000 - 249,999
	30	250,000 +

- 29 -

A. TEACHING - Continued

6. What kind of community do the students in your school come from primarily?	26	rural
	16	large town
	25	core area urban
	33	suburban

B. PERSONAL

1. What is your year of birth?	$\bar{x} =$	19 43
2. What is your current marital status?	71	now married
	14	never married
	3	separated
	5	divorced
	4	widowed
	4	cohabiting or living common-law
3. If married or cohabiting, what is your spouse's/mate's occupation? (Please be specific.)		
4. Have you left teaching for childbearing since you began your career? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, for how long? (total in months) $\bar{x} = 25$		
5. Have you left teaching because of other family obligations since you began your career? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, for how long? (total in months) $\bar{x} = 3$		

If you do not have children, skip to Question 8.

5. How many children do you have?	$\bar{x} = 1.4$
6. Give the age of each of your children (from youngest to oldest).	range > < 1 -- 40
7. Where do your children live?	38 with both parents 5 full time with mother 1 full time with father 1 part time with mother and part time with father 20 on their own 35 other (specify) no children
8. What is your personal annual income before deductions?	2 less than 15 000 4 15 000 - 19 999 33 20 000 - 29 999 45 30 000 - 39 999 15 40 000 - 49 999 1 50 000 +

- 30 -

B. PERSONAL - Continued

9. What is your total family annual income before deductions?	1	15 000 - 19 999
	10	20 000 - 29 999
	20	30 000 - 39 999
	18	40 000 - 49 999
	17	50 000 - 59 999
	15	60 000 - 69 999
	20	70 000 +

C. EDUCATION

1. What is your highest educational degree?	30	high school + teachers' college
	45	general B.A. or B.Sc. + teachers' college
	18	honours B.A. or B.Sc. + teachers' college
	8	M.Ed., M.A. or M.Sc.
	0	D.Ed., or Ph.D.

D. ATTITUDES ABOUT TEACHING

1. How would you rate your teaching effectiveness this year?	0	poor
	2	fair
	15	average
	62	good
	22	excellent
2. Are you interested in applying for a more responsible position in the school system?	14	yes
	20	maybe
	66	no

Thank you for your time in completing this survey! If you have any additional comments please indicate them here.

COVER LETTER FROM F.W.T.A.O.



FEDERATION OF WOMEN TEACHERS' ASSOCIATIONS OF ONTARIO THIRD FLOOR, 1260 BAY STREET, TORONTO ONTARIO M5R 2B5

Dear F.W.T.A.O. Member:

As I'm sure you are aware there has been a great deal of interest in recent years in the area of health, stress and coping. Although some research has been undertaken with teachers, no attention has been paid to the particular circumstances of women teachers. Consequently, F.W.T.A.O. is providing funding assistance to Ms. Lorna Earl, a graduate student at the University of Western Ontario in London, to complete a study in this area with a sample of F.W.T.A.O. members. You have been selected through a random selection procedure to participate. I urge you to complete this questionnaire and return it in the stamped, return envelope to Ms. Earl.

You will notice that the questionnaire has a code number on the face sheet. This is a number assigned by F.W.T.A.O. to make it easier to send reminder notices and followup information at some future date. Your response to the questionnaire is anonymous. Ms. Earl will not ever have access to your name nor will F.W.T.A.O. ever see your answers to the questions. If you have any questions, please feel free to contact Mrs. Shirley Stokes at the F.W.T.A.O. office.

Once again, please take the time to complete this questionnaire and return it as soon as possible. When the study is completed, the results of the survey will be reported in the F.W.T.A.O. Newsletter.

Thank you for your participation.


Sincerely,

DR. HENDERSON
Executive Director

FOLLOWUP POST CARD

1984 May 01

Dear F.W.T.A.O. Colleague:



You may recall that you received a questionnaire several weeks ago called "Health, Stress and Coping Survey" from Lorna Earl, a graduate student at the University of Western Ontario. As yet, Ms. Earl has not received a completed questionnaire from you. Since this is a project that the F.W.T.A.O. directors feel has great value, I hope you will take the time to complete the questionnaire and return it to Ms. Lorna Earl, Department of Epidemiology, Kresge Building, University of Western Ontario, London, Ontario, N6A 4B7.

Remember that your responses are anonymous. The code number is merely to make it easier to send these reminders. If you have already returned the questionnaire, ignore this reminder. If you do not intend to complete the questionnaire, please return it to her anyway so that no additional reminders will be sent.

Thank you again for your participation.

DR. HENDERSON
Executive Secretary, F.W.T.A.O.

Note: The actual reminder was a 8½" x 6" yellow post card.

HEALTH, STRESS AND COPING SURVEY

Followup Telephone Interview of
A Sample of Non-respondents

General Information:

Identification Number: Were you able to contact this person by phone? Yes NoIf 'no', why... _____

Interview:

1) Introduce yourself as _____ from F.W.T.A.O.

2) In the last few months many of our members participated in a stress survey. Did you receive a Health, Stress and Coping Questionnaire from F.W.T.A.O. and Lorna Earl from the University of Western Ontario? Yes No

If she answers no, thank her for her trouble and say goodbye.

3) A number of people did not answer the survey and we didn't expect that everyone would. However, because we sponsor surveys like this on occasion we are interested in knowing why people don't respond. For this reason, I am doing a brief followup call with people who did not complete the questionnaire. If you have recently sent the completed questionnaire to Lorna Earl, I won't need to ask you any other questions. Have you sent it? Yes No

If she has sent the questionnaire, thank her for her trouble and say goodbye.

If she has NOT returned the questionnaire, ask the following questions.

4) Can you tell me briefly why you did not complete the questionnaire?

Over —

- 2 -

If her reason is that she is not teaching full time or, is on leave, etc., do NOT ask the remainder of the questions, thank her for her trouble and say goodbye.

Now, I'd like to ask you a couple of other questions.

5) Are you currently teaching full time? Yes No

6) What is your current teaching assignment? (e.g., regular teacher, special education, guidance, principal, etc.)

7) I'm going to read you four possible responses to the question, 'How healthy would you say you have been during this school year?' Listen to all four and then tell me which one best describes how healthy you have been. Would you say you have been in:

- excellent health
- good health
- poor health
- very poor health

8) I'm going to read you five possible responses to the question, 'In general, how stressful have you found teaching this year?' Listen to them and then tell me which one best describes your situation. Have you found teaching this year to be:

- not at all stressful
- mildly stressful
- moderately stressful
- very stressful
- extremely stressful

9) Thank her for her help!

APPENDIX B

REPORT OF THE PILOT STUDY

A PILOT STUDY FOR AN INVESTIGATION OF
STRESSORS, COPING TECHNIQUES, SOCIAL
SUPPORT, PERSONALITY AND HEALTH
STATUS IN FEMALE ELEMENTARY
SCHOOL TEACHERS

L.M. EARL

INTRODUCTION

This report is a description of a pilot study preceding a full-scale study of women elementary school teachers in Ontario. The full study is designed to 1) describe the nature and prevalence of both life stressors and occupational stressors that exist for women who are teaching elementary school, 2) isolate and describe the support structures and mechanisms for coping with stressful situations that exist for these women, 3) describe their health status and 4) ascertain the relationships that exist between stressors, coping mechanisms, personality traits, support structures and health consequences in this population.

The specific purposes of this pilot study are 1) to develop and/or select instruments 2) to assess the reliability, validity, appropriateness and clarity of the proposed instruments with the target population, 3) to establish data analysis procedures and 4) to provide data to assist in establishing sample size and data collection procedures for the major study.

During the past 50 years a great deal of research has been undertaken that falls into the general category of stress research. A general stress model usually includes these components (McGrath, 1970):

1. Objective Demands and Stressors in the Environment.
2. Subjective Demand - Reception and Recognition of the Demand
3. Responses and Resources at the Physiological, Psychological, Behavioural and Social-Interactive Levels.
4. Consequences for the Focal Organism and for the Larger System in which it is Embedded.

A review of the literature in the area of general life stress yields an extensive body of empirical and clinical research that substantiates the relationship between stressful life events and either physical or mental illness (Rahe, 1969, 1978; Holmes and Masuda, 1974, Rabkin and Struening, 1976; Myers et al., 1972, 1975; Dohrenwend, 1973; Markush and Favero, 1974; Brown et al, 1973; Coyne and Lazarus, 1980). Empirical work has also revealed variables in the work-place that are related to either mental or physical illness (Kasl and French, 1969; Cherry, 1978; Friedman and Rosenman, 1974, Theorell, 1974; Cooper and Marshall, 1976; House, 1975; Howard et al, 1981; Freudenburger, 1977).

Although empirical work with teachers is recent and there are few studies linking teaching events to illness, some have found a relationship between stressors in teaching and a feeling of being under stress or burnout (Kyriacou and Sutcliffe, 1979; Cichon, 1978; Needle et al, 1981; Pratt, 1978).

It is generally assumed that life stress and occupational stress research applies in the same way to both men and women. However, there is very little research aimed at examining the specific stressors that are unique to women.

Although the relationship between external stressors (both life stressors and occupational stressors) is consistent, only 10-20% of the variance in illness is associated with stressors. This has prompted a shift in research emphasis towards strengthening the theoretical framework by clarifying, defining and operationalizing the other constructs in the model and including them in empirical studies.

There are many possible potential mediating or moderating variables. Perception and appraisal have been found to be necessary for an event of circumstance to be stressful. (Levine and Scotch, 1979; Kahn et al., 1964; Mason, 1973; Lazarus, 1966; 1980; Chan, 1977).

Various personality traits have been suggested as contributors to the vulnerability of an individual to stressful events (Antonovsky, 1979; Sarason, 1980; Chan, 1977; Pearlin and Schooler, 1978; Seligman, 1975; Lazarus, 1966; Kobasa, 1981, 1982; Haan, 1977; Vaillant, 1977; House, 1974; Jenkins et al., 1976; Rosenman and Chesney, 1980).

Coping strategies, by definition mediating variables between stressful events and consequence for the individual, have been a major focus of a great deal of research (Billing and Moos 1981; Folkman and Lazarus, 1980; Pearlin and Schooler, 1978; Dewe et al., 1978; Ilfield, 1980).

Social support has been investigated in terms of both its direct action on health outcomes and its action as a buffer or mediator between stressful events and health consequences (Cobb, 1976, Henderson, 1978; 1979; Pearlin and Schooler, 1978; Turner, 1981; Lin, et al., 1979; Dean and Lin, 1977; Liem and Lien, 1978; Thoits, 1982).

This study is an attempt to create as complete a model as possible by including mediating variables and particularizing the conceptualization and measurement for women teachers.

METHODPROCEDURE AND SEQUENCE OF EVENTSINSTRUMENT SELECTION OR CREATION

The first step in the pilot study was to develop or select instruments to measure the key concepts included in the general model displayed in Figure 1. Adequate measures were required for each of the following concepts: life stressors, occupational stressors, social support, relevant personality traits, coping strategies and health status. These instruments will be described, in detail, later. However, they were located or created by reviewing the literature to locate instruments used in other studies and by conducting 'focus group' sessions with a group of women teachers.

PRE-PILOT QUESTIONNAIRE

Since new instruments had to be created for two scales, occupational stressors and coping strategies, a pre-pilot questionnaire containing these two scales was given to a small number (35) women teachers in the London, Ontario school system who were friends or colleagues of the executive of the London Women Teacher's Association. The respondents were asked not only to answer the questions but also to give any comments or reactions that occurred to them and to identify any questions that were ambiguous or unclear.

CREATION OF PILOT QUESTIONNAIRE

All of the instruments that were either created or located were organized into a questionnaire format with general instructions for completing the questionnaire and specific instructions preceding each of the instruments. A cover letter was prepared, as was a one-page form asking whether any of the questions was unclear, difficult to answer or objectionable and how long it took to complete the survey. Copies of each of these are included in Appendix A.

SAMPLE SELECTION AND DELIVERY STRATEGY

Two selection methods were used to get a broad sample of women teachers to complete the pilot survey. A total of 30 teachers from four boards of education (rural, large urban, small urban) were approached by the research officer for their district and asked to answer the survey. In addition, 48 teachers were randomly selected from the membership list of the London Women Teacher's Association.

The questionnaires were delivered either by hand or through the internal mail systems of the Boards of Education with a letter of explanation and, for the London sample, a letter of encouragement from the President of the local Federation. All respondents were provided with an addressed return envelope.

DATA PREPARATION

The data were edited, coded and keyed to create an electronic disk file. An S.P.S.S. (Statistical Package for the Social Sciences) file was

then created, including all of the item-level raw data as well as transformed variables and summary scores. A number of different summary scores were created for each scale, based on different theoretical positions, so that they could be compared. These will be described in more detail later.

DATA ANALYSIS

Since the sample size (N= 47) is quite small, the reliability of the results from this survey is questionable. However, the purpose of this pilot study was not to estimate population parameters or even to look at the strength of relationships among variables but rather to establish the utility of the instruments. Consequently, this report will not dwell on the actual data but will concentrate on strategies for assessing it. For the interested reader, percentage frequency distributions of responses to each item are included in Appendix A. Selected results will be included in the report to provide some insight into the nature of the data.

The data analysis consisted of: (1) generating frequency and percentage frequency distributions for all of the variables to assess the potential discrimination power of the items and the variability in the population. (2) calculating means and standard deviations for all summary variables and, where possible, (3) examining the properties of particular instruments.

INTERPRETATION OF RESULTS AND PREPARATION FOR THE MAIN STUDY

Finally, the results from the pilot study were used to make modifications to the final questionnaire, to establish follow-up procedures and to suggest possible data analysis strategies for the main study.

INSTRUMENTS

This section describes in detail, the instruments selected for this study with a rationale for each choice.

LIFE STRESSORS

A number of instruments have been developed and used in research studies as indicators of the amount of life stress that exists in an individual's life (Holmes and Rahe, 1976; Myers et al., 1971; Johnson and Sarason, 1979; Paykel et al, 1971; Dohrenwend et al., 1978; Andrews and Tennant, 1976; Brown, 1974). These instruments measure major life events that engender significant life changes and are almost universally viewed as potentially stressful.

The instrument that was chosen for this study is 'A Scale to Measure the Stress of Life Events' (Tennant and Andrews, 1976). Since this scale included items for both men and women and some items about unemployment, it was modified slightly for use with the current population to be a 51-item scale with items about health, bereavement, family, friends, education, moving and financial or legal problems. This instrument was chosen because it includes a wide range of life events, including both desirable and

undesirable events, and does not include illness symptoms that might confound the relationship between events and illness.

During the creation of this instrument the authors created a parallel interviewer-administered form of the questionnaire. The correlation between the two procedures was found to be good for a general population sample ($r=.91$). The questionnaire version was considered to produce the same information as that produced by the interview version. A one-week test-retest reliability of reporting yielded a correlation of .97.

The scale has considerable face and content validity and because it was constructed from the items used by Paykel et al. (1971) and Holmes and Rahe (1967), it yields Spearman rank-order correlations of .92 and .87 respectively with comparable events in these scales and the items rank in terms of the degrees of change or degree of distress in a similar way to the original scales (Tennant and Andrews, 1976).

The authors developed change scale scores and distress scale scores based on community samples. In the current study the scale was adapted using the strategy for obtaining individualized ratings of impact of the event on the respondent developed by Johnson and Sarason (1979) for the Life Experiences Survey. For each item the respondent indicates the direction and intensity of the impact of that event on her personally. This was done to obtain personal individualized ratings of the respondent's perception and appraisal of each event that occurred.

OCCUPATIONAL STRESSORS

Although a number of indices have been created to measure occupational stressors for teachers (Cichon, 1978; Nash, 1980; Saville, 1981; Kyriacou, 1980; Syrotiuk and D'Arcy, 1983), they are not designed specifically for women. Consequently, a scale was created for this study. To do this, a pool of potential stressors was drawn from existing scales, from a focus group meeting with eleven women teachers who discussed the range of stressful events in their work and personal lives, and from suggestions in the literature about conflicts that might exist for working women. These items were categorized to ensure that there were some items in each of Cooper's (1981) categories of job stressors. The items were then organized into a survey instrument using the same format as was used from the life events scale, allowing the respondent to indicate both the existence of this stressor for her and her perception of its impact. Perception of the impact seemed particularly important for occupational stressors because these conditions are not major events that would necessarily be perceived by a large number of people as inherently stressful.

This instrument was administered as part of the pre-pilot questionnaire to 35 women teachers. As a result of their comments, several items were added, a number of items were reworded and the general instructions were rewritten.

COPING STRATEGIES

Coping strategies are so personal and multi-faceted, that there is still no good instrument for measuring them. In fact, most of the research in this area is currently dedicated to operationalizing and measuring coping. Consequently, no instrument exists to measure coping behaviour specific to teaching or for women. A coping checklist was created for this study by discussing methods for coping with or managing stress with the aforementioned focus group and creating items based on techniques suggested in the self-help literature on managing stress. An attempt was made to include direct and indirect strategies as well as active and passive strategies. The items were organized in a format designed to allow the respondent to indicate whether or not she had used this technique as a coping strategy and how effective it had been. This instrument was also included in the pre-pilot questionnaire. As a result of the respondents' comments several additions were made and several items were changed.

SOCIAL SUPPORT

Social support has been conceptualized and measured in many different ways. For this study, the appropriate scale would be one that is designed for use with a normal population and contains indicators of personal support in every day life and support in the work environment. Two instruments were selected and combined to measure these kinds of social support. The first instrument is The Provision of Social Relations Scale (P.S.R.) (Turner, 1982) and the second is an adaptation of The Work Support Scale (House, 1981).

The P.S.R. is a fifteen item scale measuring a subject's perception in relation to attachment, social integration, reassurance of worth, reliable alliance and guidance. It yields two scales - family support and support from friends. Tests of internal consistency indicate satisfactory reliabilities with alpha coefficients ranging from .74 to .87. (Turner, 1982). It has obvious face and content validity and its construct validity is demonstrated by a correlation of .62 with the revised Kaplum index (Turner, 1982) and .37 to .61 with measures of reflected self-esteem and reflected self-love developed by the Health Care Research Unit at the University of Western Ontario (Turner, 1982).

The Work Support Scale is designed to distinguish between two types of support at work, (emotional and instrumental) from work supervisors, co-workers, spouses and a combined category of friends and relatives. For this study, the format and response categories were changed to make them consistent with the P.S.R. and several slight wording changes were made to make the items appropriate for a population of women teachers.

PERSONALITY

Since personality is both complex and multi-dimensional, it was necessary to select personality characteristics that would be likely to change the potential impact of work stressors on the health of women teachers. For this study, four scales were chosen from the Jackson Personality Inventory (J.P.I.) (Jackson, 1976). The self-esteem scale was selected because self-esteem may be helpful in sustaining people on the job. The anxiety scale was chosen because an underlying anxiety-prone

personality may be vulnerable to stressors. The organization and energy scales were included because these are characteristics that are seen as important for teachers, especially those working in an elementary school setting. Internal consistency of the scales has been established for anxiety at .85 to .95, energy level at .77 to .93, organization at .75 to .92 and self-esteem at .84 to .95 (Jackson, 1976). Since this is an empirically-derived instrument, face validity is less important than construct validity. The correlations of scores on these four scales with an adjective checklist, a self-rating and peer ratings presented in Table 1 indicate that they are all reasonably valid scales (Jackson, 1976).

TABLE 1 Validity Coefficients for J.P.I. Scales (Jackson, 1976)

J.P.I. Scale	Adjective Checklist	Self-rating	Peer-rating
anxiety	.71	.64	.43
energy	.72	.52	.47
organization	.78	.56	.33
self-esteem	.73	.64	.66

HEALTH STATUS

In a general stress model the range of possible health consequences is very broad. Since this study is concerned with a normal population, the measurement of illness will, for the most part, reflect the less severe end of the health - illness continuum. The instruments used to measure health status include (1) a checklist of diagnosed chronic illness (2) a physical illness symptom inventory (3) a mental health index (4) self-report of absenteeism (5) a burnout scale (6) a statement of perceived health (7) perceived job effectiveness and (8) job satisfaction.

Chronic conditions were assessed by a 13 -item checklist from the Physical Health Spectrum (Meltzer and Hochstim, 1970). This instrument has a test-retest reliability of .89 and it correlates with a medical record check .52. (Meltzer and Hochstim, 1970). The symptom inventory was also taken from the Physical Health Spectrum. It has a test-retest reliability of .79 and although the correlation with a medical record check is quite low (.29), symptoms of this kind might not be expected to appear in a physicians records (Meltzer and Hochstim, 1970).

The National Center for Health Statistics General Well-Being Schedule (G.W.B.) was chosen as an indicator of mental health (Fazio, 1977). It includes 22 items that produce scores for anxiety, depression, positive well-being, self-control, general health, vitality, mental health as well as an overall general well-being scale. Test-retest reliability for the

total G.W.B. scale ranges from .70 to .85 and internal consistency coefficients range from .72 to .92 (Brook, 1978; Fazio, 1977). Content validity for most scales was judged to be adequate by a panel of judges because the measures of anxiety, depression, positive well-being and self-control of the G.W.B. are based chiefly on items referring to psychological states and use favourable and unfavourable definitions of both positive and negative mental health. However, the general health and vitality scales were judged to resemble general health perception measures more than mental health (Fazio, 1977). In terms of construct validity, the G.W.B. correlates .52 to .80 with other scales of depression and anxiety (e.g. Psychiatric Symptoms Scale, MMPI, Zung, College Health Questionnaire, Personal Feelings Inventory)(Fazio, 1977). The discriminant validity of G.W.B. is also adequate when individuals were classified as depressed or not using the G.W.B., only 12 of 110 tests misclassified the subject (Fazio, 1977). The G.W.B. also includes 5 items pertaining to episodes of emotional breakdown and treatment for mental health problems.

The burnout scale selected for this study is an 18-item scale called the 'Tedium Scale' and was produced by Pines, Aronson and Kafry (1980). Although a number of the items in this scale are similar to items in both the G.W.B. and the symptom inventory, they were all included to maintain the integrity of the scale. The Tedium Scale has test-retest reliability ranging from .66 to .89 (Pines, Aronson and Kafry, 1980). It also correlates .32 to .70 with a number of theoretically related constructs (work dissatisfaction, life dissatisfaction, sleep problems, life events) (Pines, Aronson and Kafry, 1980).

Two fairly straight forward questions about absence from school were included as an indirect measure of health status.

Perceived health status and perceived job effectiveness were each assessed by single questions and job satisfaction was assessed using a 5-item scale.

SOCIODEMOGRAPHIC AND HEALTH RELATED VARIABLES

Since life-style and sociodemographic variables may be related to stressors, coping strategies, social support and health status, a number of items were included to ascertain alcohol consumption, smoking behaviour, exercise, body image, teaching assignment, marital status, number of children, income and education.

RESULTS

RETURN RATE AND GENERAL REACTION

Forty-seven of the 78 surveys were completed and returned. This was a response rate of 60%. This is only fair but no follow-up reminders were used to encourage responding. The respondents gave many helpful suggestions for wording changes and clarification of items. They also offered some suggestions for changes in the instructions and indicated several places where the response categories were difficult to differentiate.

PILOT STUDY - FEEDBACK QUESTIONNAIRE

About half of the respondents indicated that one or more of the questions were either unclear or difficult to answer and they identified the problematic items and often gave constructive suggestions for improvement. Only 9% found any of the items objectionable. The average time to complete the questionnaire was 45 minutes and, although 44% of the respondents felt that it was too long, 89% indicated that their general reaction to the questionnaire was either favourable or very favourable.

SURVEY RESULTSSOCIODEMOGRAPHIC AND LIFE - STYLE VARIABLES

This sample of women teachers have a mean age of 39 years. Fifty-five percent of them are currently married or cohabiting and 21% have never married, while the remaining 30% are divorced, widowed or separated. They have one child, on average, and children tend to be living with both parents (55%) or with their mother (25%). Eighty percent have at least a general B.A. or B.Sc. and they have been teaching, on average, for about 14 years. Most of them (73%) drink alcohol at least 2 or 3 times a month and the majority (77%) do not smoke cigarettes. Almost none (4%) of them take tranquilizers more than once a month. They feel that they are slightly overweight (6 lb.) and judge themselves to be of average fitness. Their personal income averages between \$30,000 and \$40,000 and family income between \$40,000 and \$50,000.

TEACHING - RELATED EXPERIENCES

Eighteen percent of the respondents indicated that teaching this year was either very stressful or extremely stressful. The remainder (82%) said it was moderately, mildly or not at all stressful.

Most of the items on the teaching events scale were checked by at least a few people and a few were checked by almost all respondents. Twenty-six percent of the items were checked by at least 50% of the respondents. Three items were not checked at all. Two of them 'I was involved in a strike' and 'I was notified of unsatisfactory performance' were considered to be infrequent events that did not occur in this population but would likely be quite stressful when they did occur. The third 'I have had too much time on my hands at school' serves almost as an infrequency item to identify random responding. There was considerable

variation among the respondents about the impact of any particular event on them personally. For example, of the women who indicated that their class contained one or more 'exceptional' students on an 'individual plan', 50% felt it had a negative impact, 32% felt it had no impact and 18% felt it had a positive impact. On the other hand, 'doing something on the job that was in conflict with the expectations of someone to whom I am responsible' was always viewed as having a negative impact when it occurred.

Some other events that are viewed as almost always having a negative impact by the women who checked them are listed in Table 2.

TABLE 2 Events That are Viewed as Stressful When They Occur by 95% or More of the Respondents

-
- inadequate personal facilities at school
 - threatened with a law suit
 - few career development opportunities
 - poorly motivated students
 - too much school work to do and not enough time to do it in a regular working day
 - poor relationship with one or more teachers on staff
 - required to implement curriculum or policy in conflict with what I believe is best for my students
 - refused a promotion or transfer
 - uncertain of what I'm expected to do in class
 - work not challenging
 - extra work not noticed or appreciated by administration
 - teaching in a classroom that is overcrowded
 - distracted at home by work obligations
 - argued with my husband/mate about my work commitments
 - conflicts between work and life outside work
 - no time for myself
-

The theoretical picture of teacher stress is based on not only the impact of various single events or circumstances on the individual but on the cumulative effect of a number of events occurring in the same time frame. Consequently, summary scores generated from these data are of more interest than are particular items. Table 3 gives the mean for each of the summary scores for teaching related experiences. For each event the respondent was asked to indicate whether the event had occurred to her and both the direction and the intensity of the impact of that event on her personally. This allowed for the creation of positive, negative and total summary scores that reflected both the number of events and the number weighted by the preception of impact.

TABLE 3 Means and Standard Deviations for Summary Score of Teaching-Related Experiences

SUMMARY SCORES		Total Possible	X	S.D.
1.	total number of teaching-related experiences checked	62	20.5	7.6
2.	number of teaching-related experiences checked and rated positive	62	4.4	3.4
3.	number of teaching-related experiences checked and rated negative	62	13.0	7.3
4.	teaching-related events checked and rated positive, weighted by impact	124	6.6	5.1
5.	sum of teaching-related events checked and rated negative, weighted by impact	124	17.7	11.7
6.	sum of weighted positive score and weighted negative score	124	24.3	11.9

The distribution of respondents' scores in both of the total summary scores-total number of events and all events weighted by impact, (1 and 6) and the two summaries of negative events, (3 and 5) are fairly normally distributed. The summaries of positive scores (2 and 4) are skewed toward the low end, probably because the scale is generally a problem-oriented scale. All of the distributions are located near the low end of the scale.

A brief job satisfaction scale (5 items) was included within the teaching related experience section of the questionnaire. A mean score of 18.5 (out of a total of 25) with a Standard Deviation of 4.3 indicated that this group was reasonably satisfied with teaching as a profession.

COPING STRATEGIES

Almost all of the items in the coping strategy checklist were checked by some of the respondents. Twenty-three percent of the items were checked by at least 50% of the respondents. Five items, not checked at all, appear to be infrequently used strategies that might well occur in a larger population and should, therefore, be retained. The coping checklist asked the respondent to check the strategies that she had used to deal with stress at work and if she checked one, to indicate how effective it had been. Most of the respondents indicated that, if they used a coping strategy, it either didn't change anything or it helped. Very few felt that the strategies they used made things worse. Table 4 lists the strategies that one or more respondents viewed as making things worse along with the percent of respondents seeing it as either effective or maladaptive.

TABLE 4 Rank-Ordered List of Strategies One or More Respondents Felt Made Things Worse With the Percent Indicating It Made Things Worse and Percent Indicating It Helped

Strategy	% Checked Made Worse	% Checked Helped
I ate	13	14
I yelled or shouted to let off steam	11	14
I took work home	9	53
I drank coffee or tea	6	23
I considered leaving teaching	6	2
I got involved in extra-work related activities	4	20
I tried to increase efficiency	4	46
I took courses to upgrade my skills	4	13
I said 'no' to some activity or responsibility	2	40
I watched T.V.	2	37
I tried to forget about the problem	2	7
I asked the advice of colleagues	2	38
I daydreamed	2	20

It is clear that even among strategies that are sometimes seen as making things worse, all but one of them are viewed by more women as being helpful.

Several summary scores were created from the coping scale. Some theories suggest that the number of available strategies is important. Others stress the effectiveness of the strategies and others are concerned with the match between problem and solution. The summary scores created for this study are displayed in Table 5.

TABLE 5 Mean and Standard Deviation for Summary Scores of Coping Questions

Summary Scores	Total Poss.	X	S.D.
1. total number of coping strategies	64	19.5	9.3
2. number of coping strategies rated effective	64	16.6	8.3
3. number of coping strategies rated maladaptive	64	.8	1.4
4. weighted sum of strategies rated effective	128	24.8	12.6
5. weighted sum of strategies rated maladaptive	128	1.1	2.1

The scores generated from the total number of strategies (1) and the number of strategies rated effective (2) as well as the weighted effectiveness score (4) are fairly normally distributed with reasonable variation among the respondents. However, the two scales based on maladaptive coping (3 and 4) included very few responses and, consequently have little variability.

SOCIAL SUPPORT

Social support, as measured in this study, can be described as either a general feeling of being cared for or a feeling of being supported at work. Consequently, a number of different summary scores were created in each of these domains as well as an overall total score. Principal's support is the sum of 6 items dealing with the principal. Coworkers support includes 4 items. These two scores are added together for work support. Total work-related support includes principals, co-workers and 5 items related to the support of spouse and family and friends at work. Spouse support includes 6 items and the P.S.R. is the 18-item scale developed by Turner (1982). Family and friends support includes the P.S.R. plus 3 work-related items. The total support index is the sum of all the items.

TABLE 6 Means and Standard Deviation for Social Support Summary Scores

Score Description	Possible Score	X	S.D.
Principal support (items A1-A6)	30	20.1	6.3
Co-workers support (items B1-B4)	20	14.3	4.0
Work support (items A1-B4)	50	34.4	8.7
Total work-related support (items A1-B4, C1, C4,C5,D2,D4)	75	56.4	8.7
Spouse support (items C1-C6)	30	24.7	5.2
Provision of Social Relations (P.S.R.) (items D4-D18)	75	65.2	6.7
Family and friends support (items D1-D18)	90	77.4	7.7
Total support index	170	137.1	10.9

All of the social support scale distributions are slightly skewed and located towards the high end of the scale, indicating that this sample, as a group, view themselves as being well supported both generally and at work.

A factor analysis of the social support items yielded 9 factors.

TABLE 7 Factor Solution of Social Support Scale

Description of Factor	Questionnaire Numbers of Items Included
1. Principal support	A1,A3,A4,A5,A6,D18
2. Spousal support	C1,C2,C3,C4,C5,C6
3. General problem solving support	B1,B2,B3,B4,C1,C2,C3,D8,D14
4. Feeling of being seen as worthwhile by others	D7,D10,D11,D14,D17,D18
5. Feeling of closeness and comfort with people	D4,D8,D9,D12,D16,D18
6. Feeling of personal ease	D4,D5,D6,D8,B2,D15,D16
7. Feeling of being seen as competent by others	D1,D6,D11,D13,D14,D15
8. Availability of Friends	D1,D2,D3,D15
9. Principal availability	A1,A2

Although this empirical organization of the items into factors or scales is not exactly the same as the scales selected or created for this study, it produces a spousal support scale (2) and a principal support scale (1) consistent with the original scales. The support of co-workers appears to be embedded in a general problem-focused support scale (3) that includes help from both spouse and family and friends. The support from family and friends scale can be differentiated into different kinds of support - feeling worthwhile, (4) feeling close to people, (5) feeling competent (7) and feeling at ease (6). The last two factors (8 and 9) are related to the availability of family and friends and of the principal for discussion about problems.

PERSONALITY

The summary scores for the four J.P.I. scales are calculated according to the user's manual. The mean score and standard deviations for each of the scales are presented in Table 8, along with the corresponding values from the J.P.I. female normative sample (2000 college students).

TABLE 8 Means and Standard Deviation for Personality Scale Summary Scales From the Pilot study and the Normative Sample

Scale	Possible Score	Pilot Study		Normative Sample	
		X	S.D.	X	S.D.
anxiety	20	9.8	5.1	12.4	4.2
energy level	20	11.7	4.1	11.1	4.0
organization	20	13.0	3.8	10.7	4.2
self-esteem	20	13.0	4.6	10.5	5.1

This sample has a somewhat lower anxiety score and a somewhat higher score on the organization and self-esteem scales than the normative population, possible because of their higher age and more secure position. The distributions of scores for all four scales are fairly normally distributed and organization and self-esteem are located towards the high end of the scale.

LIFE EVENTS

As might be expected, most of the life events had not occurred to many of the teachers in the sample and a number (12) had not occurred to anyone. The most frequently occurring events are 'minor illness or injury' (33%), 'moderate financial difficulties' (26%); 'separation from someone important' (17%), and 'completed a course' (17%).

The summary scores of life events described in Table 9 reflect frequency of occurrence and/or the intensity of the impact on the respondent.

TABLE 9 Means and Standard Deviation for Summary Scores from Life Events Scale

Score Description	Possible Score	X	S.D.
1. total number of life events checked	51	3.2	2.4
2. number of life events checked and rated positive	51	1.2	1.5
3. number of life events checked and rated negative	51	1.7	1.9
4. sum of life events checked and rated positive, weighted by impact	104	1.9	2.5
5. sum of life events checked and rated negative, weighted by impact	104	2.5	2.9
6. weighted sum of all life events (positive + negative)	104	4.5	3.6

Although all of the life event distributions are very highly skewed, there is some variability among the respondents, both for the total number of events and the number of negative events (1 and 3) and for the weighted sum of both negative and total events (5 and 6). There was little variability in the positive summary scores (2 and 4). None of the respondents checked more than 10 (20%) of the events.

HEALTH STATUS:

Both the chronic condition checklist and the symptom checklist yield very low mean scores (chronic conditions $X=1.1$, $S.D.=.31$; symptoms $X=1.5$, $S.D.=1.8$). This might well be expected for the chronic conditions. However, the symptom inventory should have much more variability. Perhaps the yes/no format and the fact that the symptoms in this checklist were selected to represent a broad spectrum of possible symptoms rather than ones that are thought to be stress-related limited the range of possible scores on this instrument.

The General Well Being Scale yields several different scores. They are described in Table 10 and are calculated according to the author's directions (Brook, 1978).

TABLE 10 Mean and Standard Deviation of Subscale Scores of the G.W.B. Index With Comparative Data from a Normative Sample

Score Description	Possible Score	Pilot study		Normative	
		X	S.D.	X	S.D.
Anxiety score (items 2,6,9,12,15)	30	14.1	4.5	12.1	4.7
Depression scores (items 8,13,17)	18	6.4	2.6	5.6	2.5
General health (items 3,10,14)	18	14.6	2.5	15.2	2.5
Positive well-being (items 1,5,9,22)	24	14.0	1.7	17.6	3.6
Self-control (items 7,11,21)	18	14.8	2.5	16.0	2.3
Vitality (items 4,16,18,20)	24	16.0	3.6	17.6	3.5
General well-being (all 22 items)	132	96.8	16.8	104.2	15.7
Mental health index (items 1,2,5,6,8,9,11,12,13,15,17,19,21,22)	90	66.1	11.9	71.4	11.4

The score distribution in the pilot study, as with the normative sample, are fairly normally distributed or slightly skewed to the favourable end and the majority of people score near the favourable end of the score ranges. Despite this tendency for respondents to be mentally healthy, there is substantially score variability within the sample.

The majority of the women in this sample have never had a nervous breakdown, nor felt that they were going to, and they have not been treated for personal, emotional or mental problems. There is, however, reasonable variability in this measure as well.

The scores on the Tedium Scale are normally distributed and located toward the low end of the scale with considerable variability ($X=37.7$, $S.D.=10.9$, possible total = 90). A few respondents indicate that they are feeling very burnt out (22% have scores of over 45).

DISCUSSION

The purpose of this pilot study was to develop or select instruments, organize them in an efficient and effective manner for the major study and explore some possible methods of summarizing and analyzing the data. Consequently, the main emphasis was on ascertaining the adequacy of the instruments, clarifying instructions and establishing a delivery and return strategy and developing possible summary scores.

INSTRUMENTS

Although the instruments were found to be generally satisfactory, respondents' suggestions led to some wording changes, clarification of instructions and the addition of several items. Only one instrument, the symptom index, was changed substantially. Since it yielded such low variability in the scores of respondents, additional symptoms that were suggested as stress-related in the literature were added to the scale and the response categories were changed from yes/no to a 4-point scale.

DELIVERY STRATEGY

The respondents indicated that the questionnaire was quite long and took a good deal of time. At the same time, they generally reacted positively to it and 60% responded without any reminder notices. Although this was a fair response rate, it was obvious that reminder notices should be included in the main study to ensure an adequate response rate. Several teachers also indicated that they would like more information about the research and the researcher. This suggests the need for the inclusion of a letter of explanation and support from F.W.T.A.O.

The timing of the delivery of the questionnaire for the study is also important. Teachers should receive it late in the school year so that they can reflect on a full year of teaching to answer the questions. It should not be so late, however, that the teachers are involved in year-end reports.

CONFIDENTIALITY

Since the questionnaire includes a number of personal questions, the respondents need to be assured that their responses are anonymous. This will be accomplished by asking F.W.T.A.O. to select a stratified (by age and marital status) sample of teachers from their membership and assign a code number to each woman selected this way. The names and code numbers will be retained by F.W.T.A.O.. The author will attach a code number to each questionnaire and F.W.T.A.O. will send the questionnaires to the corresponding teacher. In this way F.W.T.A.O. will know only the respondents' identity and code number and the author will have access to only the code number and anonymous questionnaires.

ANALYSIS PROCEDURES

Although the sample (N=47) in this pilot study was too small to actually perform the statistical analysis to be done in the main study, it

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was possible to calculate a number of summary scores for each instrument and look at the distribution. The data also provided an opportunity to consider the analyses to be done in the main study and gave some insight into the problems and complications that may occur.

This includes such things as: (1) the importance of editing the data for any coding or keying errors that can affect the results of the analyses. (2) avoiding misinterpretation by only calculating summary scores for respondents with complete data on that instrument. (3) recognizing that some scores can only be interpreted appropriately within particular subgroups (e.g. spousal support only relevant for married or cohabiting) and (4) the necessity to examine each instrument to identify its internal properties and isolate the key variables before looking at relationships between variables.

SUMMARY

A pilot study was carried out to create a survey questionnaire to examine stressors, coping techniques, social support, personality and health status and pilot it with a small group of women elementary school teachers. The results were used to refine the questionnaire for a full study as well as establishing delivery and return strategies and to take a preliminary look at analysis procedures.

Anticipated Total Variance (σ_x^2)

$$\sigma_x^2 = \sigma_{wx}^2 + \sigma_{bx}^2$$

$$\sigma_x^2 = 32.16 + .61 = 32.77$$

$$V_x^2 = \frac{\sigma_x^2}{(\bar{x})^2} = \frac{32.77}{22.75^2} = 1.44$$

$$y = \frac{\sigma_{bx}^2}{\sigma_{wx}^2}$$

$$= \frac{.61}{32.16} = .0190$$

$$n = \frac{[Z^2 N / (1-y)] (V_x^2)}{[Z^2 V_x^2 / (1-y)] - NE^2}$$

$$n = \frac{[3.84(26424/(1+.0190))] (1.44)}{[3.84(1.44/(1-.0190))] - 26424(.1)^2}$$

$$n = \frac{1433389.75}{269.67} = 531.7$$

PILOT STUDY - QUESTIONNAIRE

1. Are any of the questions unclear? Yes No

If yes, indicate which one(s) and why:

2. Are any of the questions difficult to answer? Yes No

If yes, indicate which one(s) and why:

3. Did you find any of the questions objectionable? Yes No

If yes, indicate which one(s) and why:

4. How long did it take you to complete the questionnaire?

_____ minutes

5. Did you feel that it was too long? Yes No

6. What is your general reaction to the questionnaire?

- very favourable
 favourable
 unfavourable
 very unfavourable

APPENDIX C

SAMPLE SIZE CALCULATIONS

STRATIFIED RANDOM SAMPLING BY AGE AND MARITAL STATUS
WITH 95% CONFIDENCE INTERVAL WHERE N = 26424 and E = .1

Since the specific instruments to be used in the study had not been selected when the study proposal was created, the sample size was calculated using statistical information from F.W.T.A.O. to establish population strata size and descriptive data from the General Health Questionnaire (Goldberg, 1972) to estimate illness rates.

Specific age by marital status data were not available for either the F.W.T.A.O. membership or the G.H.Q. They were estimated for F.W.T.A.O. by assuming that the marital status distribution reported by F.W.T.A.O. is the same within each age category. In the G.H.Q. - 30, the mean score for married is 3.93 and for all other categories is 4.92, so the mean for each age category was pro-rated for the other than married group by the rates of 4:5 and no change was made to the S. D.

Table C 1

ESTIMATED NUMBERS OF CASES IN EACH AGE BY MARITAL STATUS CATEGORY FOR F.W.T.A.O.

Age	Married	All Other
35	6792	3052
35-44	6693	3007
45-54	3386	1521
55-64	1361	612

TABLE C 2

ESTIMATED AGE SPECIFIC MEANS AND STANDARD DEVIATIONS ON G.H.Q.-30
FOR MARRIED AND ALL OTHER CATEGORIES

Age	Married		All Other	
	\bar{x}	S.D.	\bar{x}	S.D.
34	5.01	6.06	6.26	6.06
35-44	4.15	5.27	5.18	5.27
45-54	4.38	6.06	5.48	6.06
55-64	3.06	4.44	3.83	4.44

CALCULATIONS

Anticipated mean G.H.Q. score (\bar{x})

$$= \frac{6742(5.01) + 6693(4.15) + 3386(4.38) + 1161(3.06) + 3052(6.26) + 3007(5.18) + 1521(5.48) + 612(3.83)}{26424}$$

$$= \frac{34027.9 + 27775.9 + 14830.7 + 4164.7 + 19105.5 + 15576.3 + 8335.1 + 2343.9}{26424}$$

125160

26424

= 4.77

Anticipated variance among stratum means (σ^2_{bx})

$$\begin{aligned} \sigma^2_{bx} &= 6792(5.01-4.77)^2 + 6693(4.15-4.77)^2 + 3386(4.38-4.77)^2 \\ &+ 1361(3.06-4.77)^2 + 3052(6.26-4.77)^2 + 3007(5.18-4.77)^2 \\ &+ 1521(5.48-4.77)^2 + 612(3.83-4.77)^2 \\ &\quad \underline{\hspace{10em}} \\ &26424 \end{aligned}$$

$$\begin{aligned} &= 391.2 + 2572.8 + 515 + 3979.7 + 6867 + 505 + 66.7 + 540.7 \\ &\quad \underline{\hspace{10em}} \\ &26424 \end{aligned}$$

$$\begin{aligned} &\underline{16138.1} \\ &26424 \end{aligned}$$

= .61

Anticipated variance among elements within the strata (σ^2_{wx})

$$\begin{aligned} \sigma^2_{wx} &= 6792(36.7) + 6693(27.8) + 3386(36.7) + 1361(19.7) \\ &+ 3052(36.7) + 3007(27.8) + 1521(36.7) + 612(19.7) \\ &\quad \underline{\hspace{10em}} \\ &26424 \end{aligned}$$

$$\begin{aligned} &= 249266.4 + 186065.4 + 124266.2 + 26811.7 + 112008.4 + 83594.6 + 55820.7 + 12056.4 \\ &\quad \underline{\hspace{10em}} \\ &26424 \end{aligned}$$

$$\begin{aligned} &= \underline{849889.8} \\ &26424 \end{aligned}$$

= 32.16

Anticipated Total Variance (σ_x^2)

$$\sigma_x^2 = \sigma_{wx}^2 + \sigma_{bx}^2$$

$$\sigma_x^2 = 32.16 + .61 = 32.77$$

$$V_x^2 = \frac{\sigma_x^2}{(\bar{x})^2} = \frac{32.77}{22.75} = 1.44$$

$$y = \frac{\sigma_{bx}^2}{\sigma_{wx}^2}$$

$$= \frac{.61}{32.16} = .0190$$

$$n = \frac{[Z^2 N / (1+y)] (V_x^2)}{[Z^2 V_x^2 / (1-y)] - NE^2}$$

$$n = \frac{[3.84(26424/(1+.0190))] (1.44)}{[3.84(1.44/(1-.0190))] + 26424(.1)^2}$$

$$n = \frac{1433389.75}{269.67} = 531.7$$

APPENDIX D
REGRESSION ANALYSIS TABLES

NOTE: Coefficients in these tables are standardized regression coefficients for all variables except the dichotomous ones (TRTMNT and CHR83) that are unstandardized.

TABLE D 1
 REGRESSION OF MENTAL HEALTH VARIABLES ON
 OCCUPATIONAL STRESS AND LIFE STRESS

	MHIND			BURNOUT			TREATMENT	
	BETA Main Effect Only	BETA With Inter- action	ADJ. R ²	BETA Main Effect Only	BETA With Inter- action	ADJ. R ²	BETA Main Effect Only	BETA With Inter- action
0-STRESS	-.32***	-.36***	.200	.41***	.42***	.240	.03**	.03**
L-STRESS	-.32***	-.41***	.285	.19***	.23***	.270	.08**	.12**
0-STR x L-STR		.13	.284		-.04	.269		-.00

ADJ R² = adjusted multiple correlation coefficient

* p .05

** p = .01

*** p .001

TABLE D 2
 REGRESSION OF JOB SPECIFIC VARIABLES ON
 OCCUPATIONAL STRESS AND LIFE STRESS

	SATFAC			EFF		
	BETA Main Effects Only	BETA With Inter- action	ADJ. R ²	BETA Main Effects Only	BETA With Inter- action	ADJ. R ²
O-STRESS	-.49***	-.44***	.212	-.20***	-.11*	.045
L-STRESS	.06	.19*	.214	-.05	.16	.045
O-STR x L-STR		-.17	.217		-.28**	.056

TABLE D 3
 REGRESSION OF PHYSICAL HEALTH VARIABLES ON
 OCCUPATIONAL STRESS AND LIFE STRESS

	HEALTH			ABSCH		
	BETA Main Effects Only	BETA With Inter- action	ADJ. R ²	BETA Main Effects Only	BETA With Inter- action	ADJ. R ²
O-STRESS	.23**	.14*	.044	.09*	.18**	.024
L-STRESS	.22***	.25**	.082	.18***	.38***	.048
O-STR x L-STR		-.05	.080		-.28**	.059

	SYMPTOMS			CHR83	
	BETA Main Effects Only	BETA With Inter- action	ADJ. R ²	BETA Main Effects Only	BETA With Inter- action
O-STRESS	.29**	.30***	.124	.01	.01
L-STRESS	.15***	.18*	.142	.04	.03
OSTR x L-STR		.04	.140		.00

TABLE D 4

REGRESSION OF MENTAL HEALTH VARIABLES ON
OCCUPATIONAL STRESS AND GENERAL SOCIAL SUPPORT

	MHIND			BURNOUT			TREATMENT	
	BETA Main Effect Only	BETA With Inter- action	ADJ. R ²	BETA Main Effect only	BETA With Inter- action	ADJ. R ²	BETA Main Effect only	BETA With Inter- action
O-STRESS	-.39***	-.23	.200	.43***	-.05	.238	.03**	-.01
GSUP	.31***	.36***	.293	-.31***	-.45***	.331	-.01	-.03
O-STR x GS		-.15	.292		.47*	.336		.00

TABLE D 5
 REGRESSION OF JOB SPECIFIC VARIABLES ON OCCUPATIONAL STRESS
 AND GENERAL SOCIAL SUPPORT

	SATFAC			EFF		
	BETA Main Effects Only	BETA With Inter- action	ADJ. R ²	BETA Main Effects	BETA With Inter- action	ADJ. R ²
0-Stress	-.44**	-.15	.212	-.18***	-.06	.045
GSUP	.09	.18*	.219	.18***	.21*	.075
0-STR x GS		-.30	.220		-.11	.073

TABLE D 6

REGRESSION OF PHYSICAL HEALTH VARIABLES
ON OCCUPATIONAL STRESS AND GENERAL SOCIAL SUPPORT

	HEALTH			ABSCH		
	BETA Main Effects Only	BETA With Inter- action	ADJ. R ²	BETA Main Effects Only	BETA With Inter- action	ADJ. R ²
0-STRESS	.19***	-.16	.044	.16***	.03**	.024
GSUP	-.10*	-.20*	.052	-.99	-.04	.022
0-STR x GS		.35	.054		.13	.021
	SYMPTOMS			CHR83		
	BETA Main Effects Only	BETA With Inter- action	ADJ. R ²	BETA Main Effects Only	BETA With Inter- action	
0-STRESS	.33***	.24***	.121	.02*	.05	
GSUP	-.12**	-.14*	.133	.01	.03	
0-STR x GS		.08	.132		-.00	

TABLE D 7
 REGRESSION OF MENTAL HEALTH VARIABLES ON
 OCCUPATIONAL STRESS AND WORK SUPPORT

	MHIND			BURNOUT			TREATMENT	
	BETA Main Effect Only	BETA With Inter- action	ADJ. R ²	BETA Main Effect Only	BETA With Inter- action	ADJ. R ²	BETA Main Effect Only	BETA With Inter- action
O-STRESS	-.41***	-.34*	.200	-.45***	.37**	.240	.04	.03
WSUP	.09*	.13	.206	-.11*	-.15*	.249	.00	-.01
O-STR x WS		-.08	.205		.09	.249		.00

TABLE D 8

REGRESSION OF JOB SPECIFIC VARIABLES ON
OCCUPATIONAL STRESS AND WORK SUPPORT

	SATFAC			EFF		
	BETA Main Effects Only	BETA With Inter- action	ADJ. R ²	BETA Main Effects Only	BETA With Inter- action	ADJ. R ²
O-STRESS	-.41***	-.64***	.212	-.19***	-.36*	.045
WSUP	.14**	.03	.229	.09*	.00	.051
O-STR x WS		.22	.232		.17	.052

TABLE D 9.
REGRESSION OF PHYSICAL HEALTH VARIABLES
ON OCCUPATIONAL STRESS AND WORK SUPPORT.

	HEALTH			ABSCH		
	BETA Main Effects Only	BETA With Inter- action	ADJ. R ²	BETA Main Effects Only	BETA With Inter- action	ADJ. R ²
O-STRESS	.18***	.19	.044	.14**	.21	.025
WSUP	-.11**	-.10	.053	-.06	-.03	.026
O-STR x WS		.00	.051		-.07	.025

	SYMPTOMS			CHR83	
	BETA Main Effects Only	BETA With Inter- action	ADJ. R ²	BETA Main Effects Only	BETA With Inter- action
O-STRESS	.33***	.19	.124	.02*	.01
WSUP	-.06	-.13	.125	.01	-.00
O-STR x WS		.15	.126		.00

TABLE D 10
 REGRESSION OF MENTAL HEALTH VARIABLES
 ON OCCUPATIONAL STRESS AND ANXIETY PRONE PERSONALITY

	MHIND			BURNOUT			TREATMENT	
	BETA Main Effect Only	BETA With Inter- action	ADJ. R ²	BETA Main Effect Only	BETA With Inter- action	ADJ. R ²	BETA Main Effect Only	BETA With Inter- action
O-STRESS	-.33***	-.50***	.200	.38***	.57***	.238	.03**	.03
ANXIETY	-.40***	-.45***	.346	.38***	.51***	.371	.04*	.03
O-STR x ANX		.11	.342		-.17*	.376		-.00

TABLE D 11

REGRESSION OF JOB SPECIFIC VARIABLES ON
OCCUPATIONAL STRESS AND ANXIETY PRONE PERSONALITY

	SATFAC			EFF		
	BETA Main Effects Only	BETA With Inter- action	ADJ. R ²	BETA Main Effects Only	BETA With Inter- action	ADJ. R ²
O-STRESS	-.43***	-.42***	.212	-.18***	-.17	.045
ANXIETY	-.12***	-.12	.225	.35*	.35*	
ANXIETY ²				-.47**	-.47*	.063
O-STR x ANX		.00	.223		-.04	
O-STR x ANX ²					.00	.062

TABLE D 12

REGRESSION OF PHYSICAL HEALTH VARIABLES
ON OCCUPATIONAL STRESS AND ANXIETY PRONE PERSONALITY

	HEALTH			ABSCH		
	BETA Main Effects Only	BETA With Inter- action	ADJ. R ²	BETA Main Effects Only	BETA With Inter- action	ADJ. R ²
O-STRESS	.17***	.21*	.044	.13**	.24*	.024
ANXIETY	.16***	.19**	.067	.12**	.19*	.035
O-STR x ANX		.06	.066		.16	.035
	SYMPTOMS			CHR83		
	BETA Main Effects Only	BETA With Inter- action	ADJ. R ²	BETA Main Effects Only	BETA With Inter- action	
O-STRESS	.27***	.41***	.121	.01*	.01	
ANXIETY	.28***	.37***	.191	.00	.00	
O-STR x ANX		.20	.193		.00	

TABLE D 13

REGRESSION OF MENTAL HEALTH VARIABLES
ON OCCUPATIONAL STRESS AND SELF-ESTEEM

	MHIND			BURNOUT			TREATMENT	
	BETA Main Effect Only	BETA With Inter- action	ADJ. R ²	BETA Main Effect Only	BETA With Inter- action	ADJ. R ²	BETA Main Effect Only	BETA With Inter- action
0-STRESS	-.43***	-.37***	.200	.47***	.38***	.238	.04**	.04**
ESTEEM	.23***	.20***	.251	-.29***	.36***	.323	-.01	.00
0-STR x EST		-.08	.250		.12	.323		-.00

TABLE D 14

REGRESSION OF JOB SPECIFIC VARIABLES
ON OCCUPATIONAL STRESS AND SELF-ESTEEM

	SATFAC			EFF		
	BETA Main Effects Only	BETA With Inter- action	ADJ. R ²	BETA Main Effects Only	BETA With Inter- action	ADJ. R ²
O-STRESS	-.45***	-.37***	.212	-.20***	-.08	.045
ESTEEM	.11**	.18**	.223	.21**	.30***	.090
O-STR x EST		-.11	.223		-.16	.092

TABLE D 15
 REGRESSION OF PHYSICAL HEALTH VARIABLES
 ON OCCUPATIONAL STRESS AND SELF-ESTEEM

	HEALTH			ABSCH		
	BETA Main Effects Only	BETA With Inter- action	ADJ. R ²	BETA Main Effects Only	BETA With Inter- action	ADJ. R ²
O-STRESS	-.21***	.21*	.044	.21**	.21**	.024
ESTEEM	-.07	-.07	.048	-.01	.03	.022
O-STR x EST		.00	.045		-.07	.021
	SYMPTOMS			CHR83		
	BETA Main Effects Only	BETA With Inter- action	ADJ. R ²	BETA Main Effects Only	BETA With Inter- action	
O-STRESS	.34***	.38***	.121	.02**	.02	
ESTEEM	-.15***	-.12	.142	.04**	.05	
O-STR x EST		.04	.140		-.00	

TABLE D 16

REGRESSION OF MENTAL HEALTH VARIABLES
ON OCCUPATIONAL STRESS AND ENERGY LEVEL

	MHIND			BURNOUT			TREATMENT	
	BETA Main Effect Only	BETA With Inter- action	ADJ. R ²	BETA Main Effect Only	BETA With Inter- action	ADJ. R ²	BETA Main Effect Only	BETA With Inter- action
O-STRESS	-.39***	-.25***	.200	.41***	.22*	.238	.04**	.02
ENERGY	.25***	.84***	.261	.40***	-.51***	.393	-.02	-.06
O-STR x ENR		.17	.262		.21*	.395		.00

TABLE D 17

REGRESSION OF JOB SPECIFIC VARIABLES
ON OCCUPATIONAL STRESS AND ENERGY LEVEL

	SATFAC			EFF		
	BETA Main Effects Only	BETA With Inter- action	ADJ. R ²	BETA Main Effects Only	BETA With Inter- action	ADJ. R ²
D-STRESS	-.41***	-.40***	.212	-.18***	.07	.045
ENERGY	.25***	.25***	.169	.77***	1.08***	
ENERGY ²				-.58**	-.73***	.095
O-STR x ENR		.00	.268		-.30*	
O-STR x ENR ²					-.00	.101

TABLE D 18

REGRESSION OF PHYSICAL HEALTH VARIABLES
ON OCCUPATIONAL STRESS AND ENERGY LEVEL

	HEALTH			ABSCH.		
	BETA Main Effects Only	BETA With Inter- action	ADJ. R ²	BETA Main Effects Only	BETA With Inter- action	ADJ. R ²
0-STRESS	.17***	.11	.044	.13**	.38**	.024
ENERGY	-.22***	-.27**	.092	-.14***	.01	.046
0-STR x ENR		.07	.091		-.28*	.049

	SYMPTOMS			CHR83	
	BETA Main Effects Only	BETA With Inter- action	ADJ. R ²	BETA Main Effects Only	BETA With Inter- action
0-STRESS	.31***	.41***	.121	.02**	.01
ENERGY	-.23***	-.16*	.170	.02	.01
0-STR x ENR		-.12	.170		.00

TABLE D 19

REGRESSION OF MENTAL HEALTH VARIABLES
 OCCUPATIONAL STRESS AND LEVEL OF ORGANIZATION

	MHIND			BURNOUT			TREATMENT	
	BETA Main Effect Only	BETA With Inter- action	ADJ. R ²	BETA Main Effect Only	BETA With Inter- action	ADJ. R ²	BETA Main Effect Only	BETA With Inter- action
O-STRESS	-.44***	-.41***	.200	.48***	.47***	.238	.04**	.01
ORGANZ	.46*	.47*		-.50*	-.49*		-.01	-.07
ORGANZ ²	-.46*	-.46*	.205	.43*	.42*	.247	-	-
O-STR x ORG		-.04			.01			.00
O-STR x ORG ²		.00	.203		.00	.245		-

TABLE D 20

REGRESSION OF JOB SPECIFIC VARIABLES
ON OCCUPATIONAL STRESS AND LEVEL OF ORGANIZATION

	SATFAC			EFF		
	BETA Main Effects Only	BETA With Inter- action	ADJ. R ²	BETA Main Effects Only	BETA With Inter- action	ADJ. R ²
O-STRESS	-.46****	-.39**	.212	-.20***	-.33*	.045
ORGANZ	-.03	.01	.216	.14***	.08	.068
O-STR x ORG		-.08	.215		.15	.068

TABLE D 21
 REGRESSION OF PHYSICAL HEALTH VARIABLES
 ON OCCUPATIONAL STRESS AND LEVEL OF ORGANIZATION

	HEALTH			ABSCH		
	BETA Main Effects Only	BETA With Inter- action	ADJ. R ²	BETA Main Effects Only	BETA With Inter- action	ADJ. R ²
O-STRESS	.21***	.31*	.044	.16***	.34*	.024
ORGANZ	-.04	.01	.044	.03	.12	.023
O-STR x ORG		.11	.043		.20	.025

	SYMPTOMS			CHR83	
	BETA Main Effects Only	BETA With Inter- action	ADJ. R ²	BETA Main Effects Only	BETA With Inter- action
O-STRESS	.35***	.59***	.121	.01*	.03
ORGANZ	-.02	.11	.120	-.22**	-.17
ORGANZ ²				.01*	.01*
O-STR x ORG		.27*	.125		-.00*
O-STR x ORG ²					-.00

TABLE D 22

REGRESSION OF MENTAL HEALTH VARIABLES ON
OCCUPATIONAL STRESS AND COPING EFFECTIVENESS

	MHIND			BURNOUT			TREATMENT	
	BETA Main Effect Only	BETA With Inter- action	ADJ. R ²	BETA Main Effect Only	BETA With Inter- action	ADJ. R ²	BETA Main Effect Only	BETA With Inter- action
O-STRESS	-.31***	-.46	.200	.34***	.19	.238	.03**	-.04
COPEFF	.33***	.31***	.290	-.35***	-.37***	.338	-.30	-.83
O-STR x COP		.14	.289		.14	.337		.02

TABLE D 23

REGRESSION OF JOB SPECIFIC VARIABLES
ON OCCUPATIONAL STRESS AND COPING EFFECTIVENESS

	SATFAC			EFF		
	BETA Main Effects Only	BETA With Inter- action	ADJ. R ²	BETA Main Effects Only	BETA With Inter- action	ADJ. R ²
Q-STRESS	-.32***	-.84***	.212	-.54**	.41	.045
COPEFF	.22***	.14	.251	.19***	.29***	.074
Q-STR x COP		.45	.253		-.54	.076

TABLE D 24

REGRESSION OF PHYSICAL HEALTH VARIABLES
ON OCCUPATIONAL STRESS AND COPING EFFECTIVENESS

	HEALTH			ABSCH		
	BETA Main Effects Only	BETA With Inter- action	ADJ. R ²	BETA Main Effects Only	BETA With Inter- action	ADJ. R ²
0-STRESS	.16***	-.17	.044	.14**	.33	.024
COPEFF	-.12**	-.18	.055	-.05	-.02	.024
0-STR x COP		.32	.055		-.18	.023
	SYMPTOMS			CHR83		
	BETA Main Effects Only	BETA With Inter- action	ADJ. R ²	BETA Main Effects Only	BETA With Inter- action	
0-STRESS	.28***	-.25	.121	.01*	-.04	
COPEFF	-.17***	-.24***	.144	.00	-.30	
0-STR x COP		.40	.144		.01	

TABLE D 25

REGRESSION OF THE MENTAL HEALTH VARIABLES
ON OCCUPATIONAL STRESS AND SPOUSAL SUPPORT
FOR MARRIED WOMEN

	MHIND			BURNOUT			TREATMENT	
	BETA Main Effect Only	BETA With Inter- action	ADJ. R ²	BETA Main Effect Only	BETA With Inter- action	ADJ. R ²	BETA Main Effect Only	BETA With Inter- action
0-STRESS	-.43***	-.42*	.22	.45***	.51**	.24	.04**	.01
SPSUP	.28***	.28**	.29	-.22***	-.19*	.28	-.04**	-.07*
0-STR x SP		.00	.29		-.06	.28		.00

TABLE D 26

REGRESSION OF THE JOB SPECIFIC VARIABLES ON
OCCUPATIONAL STRESS AND SPOUSAL SUPPORT
FOR MARRIED WOMEN

	SATFAC			EFF		
	BETA Main Effects Only	BETA With Inter- action	ADJ. R ²	BETA Main Effects Only	BETA With Inter- action	ADJ. R ²
O-STRESS	-.48***	-.60***	.24	-.24***	.16	.06
SPSUP	.09*	.04	.25	.09	.17**	.07
O-STR x SP		.13	.25		-.42*	.07

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MICROCOPY RESOLUTION TEST CHART
NBS 1010a
ANSI and ISO TEST CHART No. 2

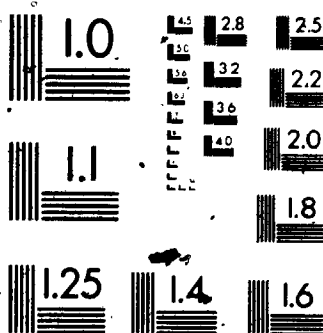


TABLE D 27

REGRESSION OF THE PHYSICAL HEALTH VARIABLES ON
OCCUPATIONAL STRESS AND SPOUSAL SUPPORT FOR MARRIED WOMEN

	HEALTH			ABSCH		
	BETA Main Effects Only	BETA With Inter- action	ADJ. R ²	BETA Main Effects Only	BETA With Inter- action	ADJ. R ²
O-STRESS	.21***	.32	.04	.15**	.22	.02
SPSUP	-.01	.04	.04	.03	.07	.02
O-STR x SP		.11	.04		-.08	.01
	SYMPTOMS			CHR83		
	BETA Main Effects Only	BETA With Inter- action	ADJ. R ²	BETA Main Effects Only	BETA With Inter- action	
O-STRESS	.36***	.50***	.13	.01*	-.02	
SPSUP	.04	.10	.13	-.00	-.04	
O-STR x SP		-.15	.13		.00	

BIBLIOGRAPHY

BIBLIOGRAPHY

Aakster, C. Psycho-social stress and health disturbances. Social Science and Medicine 1974, 8, 77-90.

Abdel-Halim, A. Social support and managerial affective responses to job stress. Journal of Occupational Behaviour, 1982, 3, 281-295.

Abrams, D. and Caplan, R. Career Change: The Effect of Anticipated Stress on Current Mental Health. Paper presented at American Public Health Association Meeting, Montreal, Nov. 1982.

Abramson, J. The Cornell Medical Index as an epidemiological tool. American Journal of Public Health, 1966, 56, 287-298.

Agassi, J. Comparing The Work Attitudes of Women and Men. Lexington Books, D.C. Heath Co., 1982.

Albee, G. Preventing psychopathology and promoting human potential. American Psychologist, 1982, 37, 1043-1050.

Alfredsson, L., Karasek, R., and Theorell, T. Myocardial infarction risk and psychosocial work environment: an analysis of the male Swedish work force. Social Science and Medicine, 1982, 16, 463-467.

Alschuler, A. (ed) Teacher Burnout. National Education Association, Washington, D.C., 1980.

Andrews, G., Schonell, M. and Tennant, C. The relation between physical, psychological and social morbidity in a suburban community. American Journal of Epidemiology 1977, 105, 324-329.

Andrews, G., Tennant, C., Hewson, J. and Schonell, M. The relation of social factors to physical and psychiatric illness. American Journal of Epidemiology, 1978, 108, 27-35.

Andrews, G., Tennant, C., Hewson, J., and Vaillant, G. Life event stress, social support, coping style and risk of psychological impairment. Journal of Nervous and Mental Diseases, May, 1978, 166.

Andrews, G. A prospective study of life events and psychological well-being. Psychological Medicine, 1981, 11, 795-801.

Aneshensel, G. and Frerichs, R. Stress, support and depression: a longitudinal causal model. Journal of Community Psychology, 1982, 10, 363-376.

- Antonovsky, A. and Kats, R. The life crisis history as a tool in epidemiology research. Journal of Health and Social Behaviour, 1967, 8.
- Antonovsky, A. Twenty-five years later a limited study of the sequelae of the concentration camp experience. Social Psychiatry, 1971, 6, 185-193.
- Antonovsky, A. Conceptual and methodological problems in the study of resistance resources and stressful life events. In Dohrenwend, B. and Dohrenwend, B. Stressful Life Events, Wiley, New York, 1974.
- Antonovsky, A. Health Stress and Coping. Jossey-Bass Publishers, San Francisco, 1979.
- Applebaum, E. Back to Work: Determinants of Women's Successful Re-entry. Auburn House Publishing, Boston, Massachusetts, 1981.
- Appley, M. and Trumbell, R. Psychological Stress. Appleton Century Crofts, New York, 1967.
- Arsenault, A. and Dolan, S. The role of personality, occupation and organization in understanding the relationship between job stress, performance and absenteeism. Journal of Occupational Psychology, 1983, 56, 227-240.
- Austin, D. The teacher burnout issue. Journal of Physical Education Research and Development, Nov./Dec. 1981.
- Backus, F. and Dudley, D. Observations of psychosocial factors and their relationship to organic disease. International Journal of Psychiatry in Medicine, 1974, 5, 499-515.
- Bahnsen, C. Epistemological perspectives of physical disease from the psychodynamic point of view. American Journal of Public Health, 1974, 64, 1034-1039.
- Baker, D. The Study of stress at work. American Review of Public Health, 1985, 6, 367-381.
- Balbie, S. Work stress as perceived by pediatric ICU nurses. Unpublished masters thesis, 1977.
- Bandura, A. Self-efficacy: toward a unifying theory of behavioral change. Psychological Review, 1977, 84, 191-215.
- Bardo, Pamela. Kappan. December, 1979.
- Bardwick, J., Douvan, E., Horner, M. and Gutmann, D. Feminine Personality and Conflict. Wadsworth Publishing, Belmont, California, 1970.

- Barrett, J. (ed.) Stress and Mental Disorder. Raven Press, 1979.
- Bartz, D. and Neuyien, J. Stress: how do principals perceive it and how can they prevent or cope with it? Illinois School Research and Development 1984, 20, 29-35.
- Baum, A., Singer, J. and Baum, C. Stress and the environment. Journal of Social Issues, 1981, 37, 4-35.
- Beehr, T. and Newman, J. Job stress, employee health and organizational effectiveness: a facet analysis, model and literature review. Personnel Psychology 1978; 31, 665-698.
- Beehr, T. Stress coping research: methodological issues. In Sethi, A. and Schuler, R. Handbook of Organizational Stress Coping Strategies. Bollinger Publishing, Cambridge, Massachusetts, 1984.
- Bell, R., Leroy, J. and Stephenson, J. Evaluating the mediating effects of social support upon life events and depressive symptoms. Journal of Community Psychology, 1982, 10, 325-340.
- Belle, D. (ed.) Lives in Stress: Women and Depression, Sage, Beverly Hills, California, 1982.
- Belle, D. Social ties and social support. In Belle, D. (ed.) Lives in Stress, Sage, Beverly Hills, California, 1982.
- Belloc, N., Breslow, L. and Hochstim, J. Measurement of physical health in a general population survey. American Journal of Epidemiology, 1971, 65, 328-336.
- Bensky, J., Shaw, S., Gouse, A., Bates, H., Dixon, B., and Beane W. Public Law 94-142: and stress: a problem for educators. Exceptional Children, 1980, 47.
- Bentz, W.K., Hollister, W., and Edgerton, J. An assessment of the mental health of teachers: a comparative analysis. Psychology in the Schools, 1971, 8, 72-76.
- Bergey, E. and Tracy, S. Teacher Stress Survey - mimeo.
- Bergner, M. and Bobbitt, R. The sickness impact profile: development and final revision of a health status measure. Medical Care, 1981, 19, 787-805.
- Berkman, L. and Syme, S. Social networks, host resistance and mortality: a nine year follow-up study of Alameda County residents. American Journal of Epidemiology, 1979, 109.
- Bernikow, L. We're dancing as fast as we can, Savvy, April, 1984.

- Betkowski, M. On making stress work for you: strategies for coping. Science Teacher, March, 1981.
- Bieliauskas, L. Stress and its Relationship To Health and Illness. Westview Press, Boulder, Colorado, 1982.
- Billings, A. and Moos R. The role of coping responses and social resources in alleviating the stress in life events. Journal of Behavioural Medicine, 1981, 4.
- Billings, A. and Moos, R. Work stress and the stress-buffering roles of work and family resources. Journal of Occupational Behaviour, 1982, 3, 215-232.
- Billings, A. and Moos, R. Coping, stress and social resources among adults with unipolar depression. Journal of Personality and Social Psychology, 1984, 46, 877-891.
- Birley, J. Stress and disease. Journal of Psychosomatic Research, 1972, 16, 235-240.
- Birnbaum, J. Life patterns and self-esteem in gifted family-oriented and career-oriented women. In Mednick M., Tangri, S. and Hoffman, L. (eds.) Women and Achievement, Hemisphere Publishing, New York, 1975.
- Bloiland, P. and Selby, T. Factors associated with career change among secondary school teachers: a review of the literature. Educational Research Quarterly, 1980, 5.
- Bloom, B; Asher, S. and White, S. Marital disruption as a stressor: a review and analysis. Psychological Bulletin, 1978, 85, 867-894.
- Blumenthal, J., Williams, R., King, Y., Schanberg, S., and Thompson, L. Type A behaviour and angiographically documented coronary disease. Circulation, 1978, 58, 634-639.
- Brecher, J. Sex, stress and health. International Journal of Health Services, 1977, 7, 89-101.
- Brenner, S., Sorbom, D. and Wollius, E. The stress chain: a longitudinal confirmatory study of teacher stress, coping and social support. Journal of Occupational Psychology, 1985, 58, 1-13.
- Breslow, L. A quantitative approach to the World Health Organization definition of health: physical, mental and social wellbeing. International Journal of Epidemiology, 1972, 1, 347-355.
- Breznitz, S. and Goldberger, L. Stress research at a crossroads. In Goldberger L. and Breznitz, S. (eds) Handbook of Stress, The Free Press, Collier MacMillan Publishers, London, 1982, 3-6.

- Briscoe, M. Sex differences in psychological well-being. Psychological Medicine, 1982, monograph 1, 1-46.
- Broadhead, W., Kaplun, B., James, S., Wagner, E., Schoenbach, V., Grimson, R., Heyden, S., Tibblin, G., and Gehlbach, S. The epidemiologic evidence for a relationship between social support and health. American Journal of Epidemiology, 1983, 117, 521-537.
- Brook, R., Ware, J., Davies-Avery, A., Stewart, A., Donald C., Rogers, W., Williams, K., and Johnston, S. Conceptualization and Measurement of Health for Adults in the Health Insurance Study - Overview. Rand Publications, 1979.
- Brown, G. and Birley, J. Crises and life changes and the onset of schizophrenia. Journal of Health and Social Behaviour, 1968, 9, 203-214.
- Brown, G. Life-events and psychiatric illness: some thoughts on methodology and causality. Journal of Psychosomatic Research, 1972, 16.
- Brown, G. Meaning, measurement and stress of life events in Dohrenwend, B. and Dohrenwend, B. (eds.) Stressful Life Events, Wiley, 1974.
- Brown, G., Bhrolchain, M. And Harris, T. Social class and psychiatric disturbance among women in an urban population. Sociology, 1975, 9, 225-254.
- Brown, G. and Harris, T. Social Origins of Depression. The Free Press, New York, 1978.
- Brown, G. Life events, psychiatric disorder and physical illness. Journal of Psychosomatic Research, 1981, 25, 461-473.
- Buck, C. and Donner, A. Blood pressure control in hypertensives - a model for the study of life events. Journal of Chronic Diseases, 1984, 37, 247-53.
- Burke, R. and Weir, T. Coping with the stress of managerial occupations. In Cooper C., and Payne, E. (eds.) Current Concerns in Occupational Stress, John Wiley & Sons, Chichester, England, 1980.
- Burke, R. and Bradshaw, P. Occupational and life stress and the family. Small Group Behaviour, 1981, 12, 329-375.
- Burks, N. and Martin, B. Everyday problems and life change events: ongoing versus acute sources of stress. Journal of Human Stress, 1985, Spring, 27-35.
- Burgoyne, S. Stress, motivation and learning. In Gowler, D. and Legge, K. Managerial Stress, Gower Press, 1975.

- Campbell, A. Subjective measures of well-being. American Psychologist, February, 1976, 117-124.
- Campbell, D. and Fiske D. Convergent and discriminant validation by the multitrait-multimethod matrix. In Jackson, D. and Messick, S. Problems in Human Assessment. McGraw-Hill Inc., New York, 1967.
- Campbell, D. and Stanley, J. Experimental and Quasi-experimental Design For Research. Rand McNally Publishing Co., Chicago, Illinois, 1963.
- Caplan, G. Support Systems and Community Mental Health: Lectures on Concept Development, Behavioral Publications, New York, 1975.
- Caplan, R. and Jones K. Effects of work load, role ambiguity and type A personality on anxiety, depression and heart rate, Journal of Applied Psychology, 1975, 60, 713-719.
- Caplan, R., Cobb, S. and French, J. Job Demands and Worker Health, U.S. Government Printing Office, 1975.
- Caplan, R., Cobb, S., French, S. Harrison, R. and Pinneau, S. Job Demands and Worker Health: Main Effects and Occupational Differences. Institute for Social Research, Michigan 1980.
- Caplan, R., Naidu, R. and Tripathi, R. Coping and Defense: constellations vs. components. Journal of Health and Social Behaviour, 1984, 25, 303-320
- Carranza, E. A study of the impact of life changes on high school teacher performance. Dissertation Abstracts, 1973, 33.
- Carrington, C., Collings, G., Bensen, H., Robinson, H., Wood, L., Lehrer, P., Woolfolk, R. and Cole, J. The use of meditation - relaxation techniques for the management of stress in a working population. Journal of Occupational Medicine 1980, 22, 221-231.
- Carlton, P. and Brown, C. The stress game: administration roulette. Thrust for Education Leadership, 1981, 10.
- Cassel, J. An epidemiological perspective of psychosocial factors in disease etiology. American Journal of Public Health, 1974, 64, 1040-1042.
- Cassie, J. and Lewandowski, H. Stress in the Teaching Profession, Ontario Institute for Studies in Education, Niagara Centre, 1983.

- Chan, K. Individual differences in reactions to stress and their personality and situational determinants: some implications for community mental health. Social Science and Medicine, 1977, 11.
- Cherry, N. Stress, anxiety and work: a longitudinal study. Journal of Occupational Psychology 1978, 51.
- Chesney, M. and Rosenman, R. 'Type A behaviour in the work setting.' In Cooper, C. and Payne, R. Current Concerns In Occupational Stress, John Wiley & Sons, Chichester, England, 1980.
- Chiriboga, D. and Dean, H. Dimensions of stress: perspectives from a longitudinal study. Journal of Psychosomatic Research, 1978, 22, 47-55.
- Cichon, D. and Koff, R. The teaching events stress inventory, Paper presented at American Education Research Association meeting, 1978.
- Clayton, P. Mortality and morbidity in the first year of widowhood. Archives of General Psychiatry, 1974, 30, 747-750.
- Clayton, P. The effects of living alone on bereavement symptoms. American Journal of Psychiatry, 1975, 132, 133-137.
- Cleary, P. and Kessler, R. The estimation and interpretation of modifier effects. Journal of Health and Social Behaviour, 1982, 23, 159-169.
- Cline, D. and Chosy, J. A prospective study of life changes and subsequent health changes. Archives of General Psychiatry, 1972, 27.
- Coates, V. and Thoreson, C. Teacher anxiety: a review with recommendations. Review of Educational Research, 1976, 46, 159-184.
- Cobb, S. A model for life events and their consequences. In Dohrenwend, B. and Dohrenwend, B. (eds.), Stressful Life Events, John Wiley and Sons, New York, 1974.
- Cobb, S. Social support as a moderator of life stress. Psychosomatic Medicine, 1976, 38.
- Cobb, S. and Kasl, S. Termination: The Consequence of Job Loss, National Institute for Occupational Safety and Health, 1977.
- Coelho, G. (ed.) Coping and Adaptation: A Behavioural Science Bibliography. National Institute of Mental Health, U.S. Department of H.E.W. Public Health Service Publication, #2087, 1970.

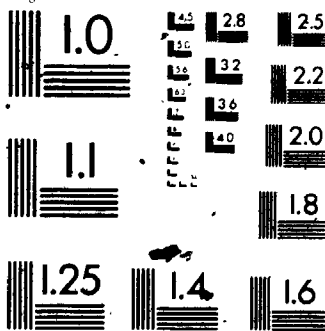
- Cohen, F. Personality, stress and the development of physical disease. In Stone et al., Health Psychology: A Handbook. Jossey-Boss, San Francisco, 1979.
- Cohen, P., Struening, E., Mulin, G., Genevie, L., Kaplan, S., and Pick, H. Community stressors, mediating conditions and well being in urban neighbourhoods. Journal of Community Psychology, 1982, 10, 377-391.
- Conway, T., Vickers, R., Ward, H. and Rahe, R. Occupational stress and variation in cigarette, coffee and alcohol consumption. Journal of Health and Social Behaviour, 1981, 22, 155-165.
- Cook, T. and Campbell D. Quasi-experimentation: Design and Analysis Issues for Field Settings. Rand McNally Publishing Co., 1979.
- Cooke, D. Conceptual and methodological considerations of the problems inherent in the specification of the simple event - syndrome link. In Sarason, I. and Spielberger, C., Stress and Anxiety, Hemisphere Publishing, 1980, 7.
- Cooke, R. and Rousseau, D. Stress and strain from family roles and work-role expectations. Journal of Applied Psychology, 1984, 69, 252-260.
- Cooper, C. and Marshall, J. Occupational sources of stress: a review of the literature relating to coronary heart disease and mental ill-health. Journal of Occupational Psychology, 1976, 49.
- Cooper, C. and Marshall, J. Understanding Executive Stress. MacMillan Press, London, 1978.
- Cooper, C. and Payne, R. (eds) Stress At Work, Wiley, 1978.
- Cooper, C. and Marshall, J. White Collar and Professional Stress. John Wiley & Sons, Chichester, England, 1980.
- Cooper, C. Executive Families Under Stress. Prentice Hall, Englewood Cliffs, New Jersey, 1981.
- Cooper, C. The Stress Check. Prentice Hall, Englewood Cliffs, New Jersey, 1981.
- Cooper, C. Stress Research - Issues for the Eighties. John Wiley and Sons, Chichester, England, 1983.
- Costello, C. Social factors associated with depression: a retrospective community study. Psychological Medicine, 1982, 12, 329-339.
- Cox, T. Stress. MacMillan, London, 1978.
- Coyne, J. and Lazarus, R. Cognitive style, stress perception and coping. In Kutash, I. and Schlesinger, L (eds.) Handbook on Stress and Anxiety. Jossey Bass, San Francisco, 1980.

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- Denney, D. and Frisch, M. The role of neuroticism in relation to life stress and illness. Journal of Psychosomatic Research, 1981, 25, 303-307.
- Depue, R. (ed.) The Psychobiology of Depressive Disorders: Implications for the Effects of Illness, Academic Press, New York; New York, 1981.
- Derogatis, L. A Brief Description of the SCL - 90, Mimeo, 1975.
- Jewe, P., Guest, D. and Williams, R. Methods of coping with work-related stress. In Mackay, G. and Cox, T. Response to Stress: Occupational Aspects University of Nottingham, IPC Science and Technology Press, 1978.
- Dill, J. and Feld, E. The challenge of coping. In Belle, D. (ed) Lives in Stress: Women and Depression, Sage, New York, 1982, 179-196.
- Dixon, B., Shaw, S. and Bensky, J. Administrator's role in fostering the mental health of special services personnel. Exceptional Children, 1980, 47.
- Dodge, J. and Martin, W. Social Stress and Chronic Illness. University of Notre Dame Press, 1970.
- Dohrenwend, B. Life events as stressors: a methodological inquiry. Journal of Health and Social Behaviour, 1973, 14.
- Dohrenwend, B. and Dohrenwend, B. (eds.) Stressful Life Events: Their Nature and Effects, John Wiley & Sons, New York, 1974.
- Dohrenwend, B. and Dohrenwend, B. Some issues in research on stressful life events. The Journal of Nervous and Mental Disease, 1978, 166.
- Dohrenwend, B. and Dohrenwend, B. Sex differences and psychiatric disorders in Miller, J. (ed.) Psychology of Women, W.W. Norton Co., New York, 1979.
- Dohrenwend, B. and Dohrenwend, B. What is a stressful life event? In Selye, H. (ed.) Selye's guide to Stress Research, Van Nostrand, Cincinnati, Ohio, 1980.
- Dohrenwend, B. and Dohrenwend, B. The conceptualization and measurement of stressful life events: an overview of the issues. In Depue, R. (ed), The Psychobiology of Depressive Disorders, Academic Press, New York, 1981.
- Duke, D. Teaching: The Imperiled Profession. State University of New York Press, 1984.

- Dunette, M. (ed.) Handbook of Organizational Psychology, Rand McNally, Skokie, Illinois, 1970.
- Dunham, J. Recommendations for the reduction of the stress of teaching disruptive pupils. The Head Teacher's Review, Aug., 1979.
- Dunham, J. An exploratory comparative study of staff stress in English and German comprehensive schools. Educational Review 1980, 32.
- Earls, N. How teachers avoid burnout. Journal of Physical Education Research and Development, Nov/Dec., 1981.
- Eaton, W. Life events, social supports and psychiatric symptoms: a re-analysis of the New Haven data. Journal of Health and Social Behaviour, 1978, 19.
- Eaton, W. and Kessler L. Rates of symptoms of depression in a national sample. American Journal of Epidemiology, 1981, 114, 528-538.
- Eatenger, L. A follow-up of the Norwegian concentration camp survivors' mortality and morbidity. Israel Annals of Psychiatry and Related Disciplines, 1973, 11, 199-209.
- Elliott, P. and Manlove, D. The cost of sky rocketing teacher absenteeism. Kappan, 1977, 59, 269-271.
- Endler, N. and Edwards, J. Stress and personality. In Goldberger, L. and Breznitz, S. (eds) Handbook of Stress, Collier-Macmillan Publishers, London, 1982, 36-48.
- Eysenck, H. Stress, disease and personality: the inoculation effect. In Cooper, C. Stress Research: Issues for the Eighties, John Wiley and Sons, New York, 1983.
- Fairbank, D. and Hough, R. Life event classifications and the event-illness relationship. Journal of Human Stress, Sept., 1979.
- Fanshel, S. and Bush, J. A health-status index and its application to health services outcomes. Operations Research, 1970, 18, 1021-1066.
- Fanshel, S. A meaningful measure of health for epidemiology. International Journal of Epidemiology, 1972, 1.
- Fazio, A. A Concurrent Validation Study of the NCHS General Well-Being Schedule DHEW publication No. 78-1347 U.S. Department of Health, Education and Welfare. 1977.
- Federation of Women Teachers' Associations of Ontario. Statistical Information of F.W.T.A.O. Membership, Toronto, 1983-84.

- Folkman, S. and Lazarus, R. An analysis of coping in a middle-aged community sample. Journal of Health and Social Behaviour, 1980, 21, 219-239.
- Folkman, S. Rationale And Instructions for the Ways of Coping Checklist, mimeo, 1980.
- Folkman, S. An approach to the measurement of coping. Journal of Occupational Behaviour, 1982, 3, 95-107.
- Fontana, A., Marcus, J., Hughes, L., and Dowds, B. Subjective evaluation of life events. Journal of Consulting and Clinical Psychology, 1979, 17, 906-911.
- Forsman, L. Habitual catecholamine excretion and its relation to habitual distress. Biological Psychology, 1980, 2, 83-97.
- Fleishman, J. Personality characteristics and coping patterns. Journal of Health and Social Behaviour, 1984, 25, 229-244.
- French, J. and Caplan R. Organizational stress and individual strain. In Marrow, A. (ed.) The Failure of Success, AMACOM 1972.
- French, J. Person Role Fit. Occupational Mental Health, 1973, 3, 15-20.
- Friedman, M. and Rosenman, R. Type A Behaviour and Your Heart. Knopf, 1974.
- Friesen, D. and Williams, M. Organizational stress among teachers. Canadian Journal of Education, 1985, 10, 13-32.
- Frogatt, M. and Hunter, L. Pricetag: Canadian Women and the Price of Success. Nelson, Scarborough, Ontario, 1980.
- Garrity, T., Somes, G. and Marx, M. The relationship of personality, life change, psychophysiological strain and health status in a college population. Social Science and Medicine, 1977, 11.
- Gersten, J., Langner, T., Eisenberg, J., and Orzele, L. Child behaviour and life events: undesirable change or change per se? In Dohrenwend, B. and Dohrenwend, B. (eds.) Stressful Life Events, Wiley, New York, 1974.
- Gersten, J., Langner, T., Eisenberg, J., and Simcha-Fagan, O. An evaluation of the etiological role of stressful life change events in psychological disorders. Journal of Health and Social Behaviour, 1977, 18, 228-244.
- Glass, D. Stress, behaviour patterns and coronary disease. American Scientist, 1977, 65.

- Gmelch, W. Stress, health and coping strategies of public school administrators. Kappan, March, 1983.
- Goldband, S., Katkin, E. and Morell, M. Personality and cardiovascular disorder. In Sarason, I. and Spielberger, C. (eds.) Stress and Anxiety, 1979, 6.
- Goldberg, D. The Detection of Psychiatric Illness By Questionnaire. Oxford University Press, 1972.
- Goldberg, D. and Hillier, V. A scaled version of the general health questionnaire. Psychological Medicine, 1979, 9, 139-145.
- Goldberg, E. and Comstock G. Life events and subsequent illness. American Journal of Epidemiology, 1976, 104.
- Goldberg, E. and Comstock, G. Epidemiology of life events: frequency in general populations. American Journal of Epidemiology, 1980, 3.
- Goldberg, P. Executive Health, McGraw Hill, 1978.
- Goldberger, L. and Breznitz, S. (eds.) Handbook of Stress. The Free Press, Collier MacMillan Publishers, 1982.
- Gore, S. The effect of social support in moderating the health consequences of unemployment. Journal of Health and Social Behaviour. 1978, 19, 157-165.
- Gorsuch, R. and Key, M. Abnormalities of pregnancy as a function of anxiety and life stress. Psychosomatic Medicine, 1974, 36, 352-361.
- Gosnell, J. The relationship between work experience and occupational aspiration and attrition from teaching. The Clearing House, 1977, 51.
- Gove, W. Sex differences in illness among men and women: an evaluation of four questions raised regarding the evidence on the higher rates of women. Social Science and Medicine, 1978, 12B, 187-198.
- Gove, W. and Geerken, M. The effect of children and employment on the mental health of married men and women. Social Forces, 1977, 56, 66-76.
- Gove, W. and Hughes, M. Possible causes of the apparent sex differences in physical health: an empirical investigation. American Sociological Review, 1979, 44, 126-146.

- Gove, W. and Tudor, J. Adult sex roles and mental illness. In Huber, J. (ed) Changing Women in a Changing Society. University of Chicago Press, Chicago, 1973, 50-73.
- Gowler, D. and Legge, K. Managerial Stress. Gower Press, 1975.
- Grace, G. Role Conflict and the Teacher. Routledge and Kegan Paul Ltd., Boston, Massachusetts, 1972.
- Graham, S. The sociological approach to epidemiology. American Journal of Public Health, 1974, 64, 1046-1049.
- Greenburg, S. and Valletutti, P. Stress and the Helping Professions. Paul H. Brookes, 1980.
- Greenfield, R. Stress and accidental injury. Unpublished master's thesis, 1979.
- Greenglass, E. Type A behaviour and Role Conflict in Employed Women. Paper presented at the Third Annual Conference on Women and Organizations, Boston, 1984.
- Greenglass, E. Psychological consequences of the job/family interface for women. Paper presented at 20th Interamerican Congress of Psychology, Caracas, 1985.
- Greenglass, E. Anger in Type A women: Implications for CHU. Paper presented at 20th Interamerican Congress of Psychology, Caracas, 1985.
- Gross, E. Work, organization and stress. In Levine, S. and Scotch, N. (eds.) Social Stress, Aldine Publishing, Chicago, Illinois, 1970.
- Grossnickle, D. Teacher burnout. The Clearing House, 1980, 54.
- Guertin, W. and Bailey J. Introduction to Modern Factor Analysis, Edwards Brothers Inc., 1970.
- Gullahorn, J. (ed). Psychology and Women in Transition V.H. Winston and Sons, Washington, D.C., 1979.
- Gunderson, E., Rahe, R. and Arthur, R. The epidemiology of illness in naval environments: demographic, social background and occupational factors. Military Medicine, June, 1973.
- Gunderson, E. and Rahe, R. (ed.) Life Stress and Illness, Charles C. Thomas, Springfield, Massachusetts, 1974.
- Gunst, R. and Mason, R. Advantages of examining multicollinearities in regression analysis. Biometrics, 1977, 33, 249-260.

- Juttentag, M.; Salasin, S. and Belle, D. The Mental Health of Women, Academic Press, New York, 1980.
- Haan, N. Coping and Defending: Processes of Self-Environment Organization, Academic Press, New York, 1977.
- Haan, N. The assessment of coping, defense and stress. In Goldberger, L. and Breznitz, S. (eds) Handbook of Stress, Collier MacMillan Publishers, 1982.
- Habif, V. and Labey, B. Assessment of the life stress-depression relationship: the use of social support as a moderator variable. Journal of Behavioural Assessment, 1980, 2, 167-173.
- Hall, D. and Hall, F. Stress and the two-career couple. In Cooper, C. and Payne, R. (eds.), Current Concerns in Occupational Stress, John Wiley and Sons, New York, 1980.
- Hamilton, V. and Warburton, D. (eds.), Human Stress and Cognition. Wiley, New York, 1979.
- Harrison, R. Person-environment fit and job stress. In Cooper, C. and Payne, R. (eds.), Stress at Work, Wiley, New York, 1978.
- Hart, E. and Sechrist, W. (eds.) Dynamics of Wellness, Wadsworth, Belmont, California, 1970.
- Hartmann, D., Roper, B. and Bradford, D. Some relationships between behavioural and traditional assessment. Journal of Behavioural Assessment, 1979, 1, 3-21.
- Haynes, S. and Feinleib, M. Women, work and coronary heart disease: prospective findings from the Framingham Heart Study. American Journal of Public Health, 1980, 70, 133-141.
- Henderson, S., Byrne, D., Duncan-Jones, P., Scott, R. and Adcock, S. Social relationships, adversity and neurosis: a study of associations in a general population sample. British Journal of Psychiatry, 1980, 136, 574-583.
- Henderson, S., Duncan-Jones, P., Byrne, D. and Scott, R. Measuring social relationships: the Interview Schedule for Social Interaction, Psychological Medicine, 1980, 10, 723-734.
- Henderson, S. Social relationships, adversity and neurosis: an analysis of prospective observations. British Journal of Psychiatry, 1981, 138, 391-398.
- Hiebert, B. and Farber, I., Teacher stress: a literature survey with a few surprises. Canadian Journal of Education, 1984, 9, 14-27.

- Hiebert, B. Stress and Teachers: The Canadian Scene. Canadian Education Association, 1985.
- Hinkle, L., Christenson, W., Kane, F., Ostfeld, A., Thetford, W. and Wolff, H. An investigation of the relation between life experience, personality characteristics and general susceptibility to illness. Psychosomatic Medicine, 1958, 70, 2/8.
- Hinkle, L., Whitney, L., Lehman, E., Dunn, J., Benjamin, B., King, R., Plakun, A. and Flehnyer, B. Occupation, education and coronary heart disease. In Lipowski, Z. (ed.) Psychosocial Aspects of Physical Disease, Karger, 1972.
- Hinkle, L. The effect of exposure to culture change, social change and change in interpersonal relationships on health. In Dohrenwend, B. and Dohrenwend, B. (eds.), Stressful Life Events, Wiley, New York, New York, 1974.
- Hochschild, A. A Review of Sex Role Research. In Huber, J. (ed.) Changing Women in a Changing Society, University of Chicago Press, Chicago, Illinois, 1973.
- Holahan, C. and Gilbert, L. Conflict between major life roles: women and men in dual career couples. Human Relations, 1979, 32, 451-467.
- Holahan, C. and Moos, R. Social support and psychological distress: a longitudinal analysis. Journal of Abnormal Psychology, 1981, 90, 365-370.
- Holdaway, E. Teacher Satisfaction: An Alberta Report. University of Alberta, 1978.
- Hollander, R., McQueen, D. and Celentano, D. Women and Work-Related Stress: A Research Agenda. Paper presented at American Public Health Association, Montreal, 1982.
- Holmes, T. and Masuda, M. Life change and illness susceptibility. In Dohrenwend, B. and Dohrenwend, B. (eds.), Stressful Life Events, Wiley, New York, 1974.
- Holmes, T. and Rahe, R. The social readjustment rating scale. Journal of Psychosomatic Research, 1976, 2, 213-218.
- Holroyd, K. and Lazarus, R. Stress, coping and somatic adaptation. In Goldberger, L. and Breznitz, S (eds.), Handbook of Stress, Collier MacMillan Publishers, London, 1982, 21-35.
- Hong, K., Wirt, R., Yellin, A., and Hopwood, J. Psychological attributes, patterns of life change, and illness susceptibility. The Journal of Nervous and Mental Disease, 1979, 167, 275-281.

- Horn, S. Validity, reliability and implications of an index of inpatient severity of illness, Medical Care, 1981, 19, 354-362.
- Horne, R. and Picard, R. Psychosocial risk factors for lung cancer. Psychosomatic Medicine, 197, 40, 503-514.
- Horner, W. Femininity and successful achievement: a basic inconsistency. In Bradwick, J., Douvan, E., Horner, M., and Gutman, D. Feminine Personality, and Conflicts. Wadsworth Publishing, Belmont, California, 1970.
- Horowitz, M. and Becker, S. Cognitive response to stressful stimuli, Archives of General Psychiatry, 1971, 25.
- Hough, R., Fairbank, D., and Garcia, A. Problems in the ratio measurement of life stress, Journal of Health and Social Behaviour, 1976, 17.
- House, J. Occupational stress and coronary heart disease: a review and theoretical integration. Journal of Health and Social Behaviour, 1974, 15, 12-27.
- House, J. and Wells, J. Occupational stress and health. In McLean, A., Black, G., and Colligan, M. (eds.) Reducing Occupational Stress HEW (NIOSH) publication #78-140, 1978.
- House, J., Wells, J., McMichael, A., Kaplan, B. and Landerman, L. Occupation stress and health among factory workers. Journal of Health and Social Behaviour, 1979, 20, 139-160.
- House, J. Work Stress and Social Support: Addison-Wesley Publishing Company, Reading, Massachusetts, 1981.
- Howard, J. What is our capacity to cope with stress? The Business Quarterly, Winter, 1973.
- Howard, J., Rechnittzer, P. and Cunningham, D. Stress inoculation for managers and organizations. The Business Quarterly, Winter, 1975.
- Howard, J. Management productivity: rusting out or burning out? The Business Quarterly, 1978.
- Howard, J., Rechnittzer, P. and Cunningham, D. The type A manager. The Business Quarterly, 1978.
- Howard, J., Cunningham, D. and Rechnittzer, P. Rusting Out, Burning Out, Bowing Out. Financial Post/Gage Books, Agincourt, Ontario, 1978.
- Howze, D. and Kotch, J. The role of stress and social support in the occurrence of child abuse and neglect. Paper presented at American Public Health Association, Montreal, 1982.

- Hoyman, H. Rethinking an ecologic system model of man's health, disease, aging and death. The Journal of School Health, 1975, 16.
- Huber, J. (ed) Changing Women in a Changing Society, University of Chicago Press, Chicago, Illinois, 1973.
- Hunt, S., McKenna, S., McEwen, J., Backett, E., Williams, J. and Papp, E. A quantitative approach to perceived health status: a validation study. Journal of Epidemiology and Community Health, 1980, 37, 281-286.
- Hunters College Women's Studies Collective Women's Realities, Women's Choices. Oxford University Press, 1983.
- Hurst, M., Life changes and psychiatric symptoms development: issues of content, scoring and clustering. In Barrett, J. et al., Stress and Mental Disorder, Rowen, 1979.
- Husaini, B. Stress and psychiatric symptoms: personality and social support as buffers. Journal of Community Psychology, 1982, 10, 291-292.
- Husaini, B., Neff, J., Newbrough J. and Moore, M. The stress-buffering role of social support and personal competence among the rural married. Journal of Community Psychology, 1982, 10, 409-425.
- Ibrahim, M. The changing health status of women. American Journal of Public Health, 1980, 70, 120-121.
- Ilfeld, F. Understanding marital stressors. The Journal of Nervous and Mental Diseases, 1980, 168, 375-381.
- Ilfeld, F. Coping styles of Chicago adults: a description. Journal of Human Stress, June, 1980.
- Insel, P. and Moos, R. (eds.) Health and the Social Environment, Heath and Co., Lexington, Massachusetts, 1974.
- Iwanevich, J., Matteson, M. and Prestin, C. Occupational stress, type-A behaviour and physical well-being. Academy of Management Journal, 1982, 25, 373-391.
- Jackson, D., Jackson Personality Inventory. Research Psychologists Press, London, Ontario, 1976.
- Jacobs, T. and Charles, E. Life events and the occurrence of cancer in children. Psychosomatic Medicine, 1980, 42, 11-24.

- Janoda, U. The impact of unemployment in the 1930's and the 1970's. Bulletin of the British Psychological Society, 1979, 32, 309-314.
- Jenkins, C., Zyzanski, S. and Rosenman, R. Risk of new myocardial infarction in middle-aged men with manifest coronary heart disease. Circulation, 1976, 53, 342-347.
- Jenkins, C. Psychosocial modifiers of response to stress. Journal of Human Stress, December, 1979.
- Jenkins, C. Social and epidemiological factors in psychosomatic disease. In Insel, P. and Moos, P. (eds) Health and the Social Environment, Heath and Co., Lexington, Massachusetts, 1974.
- Jenkins, R. Minor psychiatric morbidity in employed men and women and its contribution to sickness absence. Psychological Medicine, 1980, 10, 751-757.
- Johnson, J. and McCutcheon, S. Assessing life stress in older children and adolescents: preliminary findings with the Life Events Checklist. In Sarason, I. and Spielberger, D. Stress and Anxiety, Vol. 7, Hemisphere Publishing, Franklinville, New York, 1980.
- Johnson, J. and Sarason, I. Recent developments in research in life stress. In Hamilton, V. and Warburton, D. (eds.) Human Stress and Cognition, Wiley, New York, 1979.
- Jones, M. and Emanuel, J. There is life after burnout. The High School Journal, 1981, 64.
- Kagan, A. and Levi, L. Health and environment - psychosocial stimuli: a review. Social Science and Medicine, 1974, 8, 225-241.
- Kagan, A. Psychosocial factors in disease: hypotheses and future research. In Gunderson, E. and Rahe, R. (eds.) Life Stress and Illness, Charles C. Thomas, Springfield, Illinois, 1974.
- Kahn, C. Women's choice of a dual role: brief notes on a developmental determinant. In Roland, A. and Harris, B. (eds) Career and Motherhood: Struggles for a New Identity. Human Sciences Press, New York, 1979.
- Kahn, R. Some propositions towards a researchable conceptualization of stress. In McGrath, J. (ed.) Social and Psychological Factors In Stress, Holt Rhinehart and Winston, New York, 1970.
- Kahn, R. and French, J. Status and conflict: two themes in the study of stress. In McGrath, J. (ed.) Social and Psychological Factors In Stress, Holt Rhinehart and Winston, New York, 1970.

- Kandel, D., Davies, M. and Raveis, V. The stressfulness of daily social roles for women: marital, occupational and household roles. Journal of Health and Social Behaviour, 1985, 26, 64-78.
- Kanner, A., Coyne, J., Schaefer, C. and Lazarus, R. Comparison of two modes of stress measurement: daily hassles and uplifts vs. major life events. Journal of Behavioural Medicine, 1981, 4, 1 - 39.
- Kaplun, A. Social support: the construct and its measurement. B.A. thesis, Department of Psychology, Brown University, 1977.
- Kaplan, B., Cassel, J. and Gore S. Social support and health. Medical Care, 15 supplement, 1977.
- Kaplun, H. Sociological theories. In Kutash, I. and Schlesinger, L. (eds.) Handbook on Stress and Anxiety, Jossey Bass, 1980.
- Kaplan, R., Bush, J. and Berry, C. Health status: types of validity and the index of well-being, Health Services Research, 1976, 2, 478-507.
- Kaplan, R., Bush, J. and Berry, C. The reliability, stability and general suitability of a health status index. Paper presented at American Statistical Association, 1978.
- Karasek, R. Job demands, job decision latitude and mental strain: implications for job redesign. Administrative Science Quarterly, 1979, 24, 285-308.
- Karasek, R., Theorell, T., Schwartz, J., Pieper, C. and Alfredsson, L. Job, psychological factors and coronary heart disease. Advanced Cardiology, 1982, 29, 62-67.
- Karasek, R., Baker, D., Marxer, F., Ahlbom, A. and Theorell, T. Job decision latitude, job demands and cardiovascular disease. American Journal of Public Health, 1981, 72, 694-705.
- Kasl, S., Gore, S. and Cobb, S. The experience of losing a job: reported changes in health symptoms and illness behaviour. Psychomatic Medicine, 1975, 37, 106-122.
- Kasl, S., Epidemiological contributions to the study of work stress. In Cooper, C. and Payne, R. Stress at Work. John Wiley and Co., New York, 1978.
- Keenan, A. and McBain, G. Effects of Type A behaviour, intolerance of ambiguity, and locus of control in the relationship between role stress and work-related outcomes. Journal of Occupational Psychology, 1979, 52, 277-285.

- Kellam, S. Stressful life events and illness: A research area in need of conceptual developments. In Dohrenwend, B. and Dohrenwend, B. (eds.) Stressful Life Events, Wiley, New York, 1974.
- Kessler, R. A strategy for studying differential vulnerability to the psychological consequences of stress. Journal of Health and Social Behaviour, 1979, 20, 100-108.
- Kessler, R. Stress, social status and psychological distress. Journal of Health and Social Behaviour, 1979, 20, 259-272.
- Kleinbaum, D., Kupper, L. and Morgenstein, H. Epidemiologic Methods, Wadsworth, Belmont, California, 1982.
- Knight, R., Wool-Manning, H., and Godfrey, H. The relationship between state anxiety and depressed mood: a validity study. Journal of Behavioural Assessment, 1983, 5, 191-201.
- Kobasa, S. Stressful life events, personality and health: an inquiry into hardiness. Journal of Personality and Social Psychology, 1979, 37, 1-11.
- Kobasa, S., Maddi, S. and Courington, S. Personality and constitution as mediators in the stress-illness relationship. Journal of Health and Social Behaviour, 1981, 22, 368-378.
- Kobasa, S. The hardy personality: toward a social psychology of stress and health. In Sanders, G. and Suls, J. (eds.) Social Psychology of Health and Illness, Lawrence Erlbaum Associates, 1982.
- Koff, R., Olson, G. and Cichon, D. Stress and the school administration. Administrator's Notebook, 1979-80, 28.
- Komarovsky, M. Dilemmas of masculinity in a changing world. In Gullahorn, J. (ed) Psychology and Women in Transition, V.H. Winston and Sons, Washington, D.C., 1979.
- Krohne, H. and Laux, L. Achievement, Stress and Anxiety. Hemisphere Publishing, 1982.
- Kutash, I. and Schlesinger, L. Handbook on Stress and Anxiety, Jossey-Bass, San Francisco, 1980.
- Kyriacou, C. and Sutcliffe, J. Teacher stress: prevalence, sources and symptoms. British Journal of Educational Psychology, 1978, 48, 159-167.
- Kyriacou, C. and Sutcliffe, J. A model of teacher stress. Educational Studies, 1978, 4, 1-6.

- Kyriacou, C. Coping actions and occupational stress among school teachers. Research in Education, 1980, 24, 57-61.
- Kyriacou, C. Stress, health and school teachers: a comparison with other professions. Cambridge Journal of Education, 1980, 10, 154-159.
- Kyriacou, C. Sources of stress among British teachers: the contribution of job factors and personality factors. In Cooper, C. and Marshall, J. (eds.) White collar and Professional Stress, Wiley, New York, 1980.
- Kyriacou, C. Social support and occupational stress among school teachers. Educational Studies, 1981, 7, 55-60.
- Laffey, J., Cichon, D., Koff, R. and Olson, G. Stress and teaching: a comparative study. Stress, 1981, 2, 13-17.
- Lamm, G. Problems in the definition of ill health. International Journal of Epidemiology, 1972, 4, 357-359.
- LaRocco, J., House, J. and French, J. Social support, occupational stress and health. Journal of Health and Social Behaviour, 1980, 21, 202-218.
- Larwood, L. and Wood, M. Women In Management. Lexington Books, D.C. Heath and Company, Lexington, Massachusetts, 1977.
- Laux, L. and Vossel, G. Paradigms in stress research. In Goldberger, L. and Breznitz, S. (eds.) Handbook of Stress, Collier MacMillan Publishers, London, 1982, 203-211.
- Laws, J. The Second X: Sex Roles and Social Roles. Elsevier, New York, 1979.
- Lazarus, R. Psychological Stress and the Coping Process. McGraw-Hill, Montreal, Quebec, 1966.
- Lazarus, R. Psychological stress and coping in adaptation and illness. International Journal of Psychiatry in Medicine, 1974, 5, 321-333.
- Lazarus, R. Patterns of Adjustment. McGraw-Hill Book Co., Montreal, Quebec, 1976.
- Lazarus, R. and Launier, R. Stress related transactions between person and environment. In Pervin, L. and Lewis, M. Perspectives in Interactional Psychology, Plenum, New York, 1978.

- Lazarus, R., Cohen, J., Folkman, S., Kanner, A. and Schaefer, C. Psychological stress and adaptations: some unresolved issues. In Selye, H. (ed.) Selye's Guide to Stress Research, Van Nostrand, Cincinnati, Ohio, 1980.
- Lazarus, R. and DeLongis, A. Psychological stress and coping in aging. American Psychologist, March, 1983, 245-254.
- Lerner, M. Conceptualization of health and social well-being. In Berg, R. (ed.) Health Status Indexes, 1973.
- Levi, L. Stress, distress and psychosocial stimuli. In McLean, A. (ed.) Occupational Stress, Thomas, New York, 1974.
- Levi, L. and Kagan, A. Psychosocially-induced stress and disease: problems, research strategies and results. In Selye, H. (ed.) Selye's Guide to Stress Research. Van Nostrand, Cincinnati, Ohio, 1980.
- Levi, L. Society Stress and Disease Vol. 4 Working Life. Oxford University Press, 1981.
- Levine, S. and Scotch, N. Social Stress. Aldine Publishing Co.; Chicago, Illinois, 1970.
- Levkoff, S. Transition, Stress and Adaptation in Late Adulthood. Paper presented at American Public Health Association, Montreal, 1982.
- Lewinsohn, P. and Talkington, J. Studies on the measurement of unpleasant events and relations with depression. Applied Psychological Measurement, 1979, 3, 83-101.
- Lieberman, M. The effects of social supports in response to stress. In Goldberg, L. and Breznitz, S. (eds.) Handbook of Stress, Collier Macmillan Publishers, London, 1982.
- Liem, R. and Liem, J. Social class and mental illness reconsidered; the role of economic stress and social stress. Journal of Health and Social Behaviour, 1978, 19, 139-156.
- Liem, R. and Rayman, P. Health and social costs of unemployment. American Psychologist, 1982, 37, 1116-1123.
- Lin, N., Simeone, R., Ensel, W. and Kuo, W. Social support, stressful life events and illness: a model and empirical test. Journal of Health and Social Behaviour, 1979, 20, 108-119.
- Lin, N., Dean, A. and Ensel, W. Social support scales: a methodological note. Schizophrenia Bulletin, 1981, 7, 73-89.
- Lin, N., Light, S. and Woelfel, M. The Buffering Effects of Social Support: a Theoretical Framework and an Empirical Investigation. Paper presented at National Conference on Social Stress Research, University of New Hampshire, 1982.

- Lin, N. and Ensel, W. Depressed Mobility and its Social Etiology. Paper presented at American Public Health Association, Montreal, 1982.
- Lipovenko, D. Burnout: When the joy of job is gone. The Globe and Mail, Toronto, June 4, 1981.
- Lipowski, A. (ed) Psychosocial Aspects of Physical Illness. S. Karger Press, 1972.
- Loring, R. and Otto, H. New Life Options, McGraw-Hill, Montreal, Quebec, 1976.
- Lortie, D. School Teacher. University of Chicago Press, Chicago, Illinois 1975.
- Luce, R. and Galanter, E. Psychophysical Scaling. In Bush, R. and Galanter, E. Handbook of Mathematical Psychology, John Wiley, New York, 1963.
- Lynch, J. The Broken Heart. Basic Books, New York, 1977.
- MacBride, A. Burnout: possible? probable? preventable? Canada's Mental Health, March, 1983, 2-8.
- Mackay, S. and Cox, T. Response to Stress: Occupational Aspects. Paper presented at Ergonomics Societies Conference, University of Nottingham. IPC Science & Technology Press, 1978.
- Magnusson, D. Situational determinants of stress: an interactional perspective. In Goldberger, L. and Breznitz, S. (eds.) Handbook of Stress, Collier MacMillan Publishers, London, 1982, 231-253.
- Makosky, V. Stress and the mental health of women: a discussion of research and issues. In Guttentag, M., Salasin, S. and Belle, S. The Mental Health of Women, Academic Press, New York, 1980, 111-127.
- Makosky, V. Sources of stress: events or conditions. In Belle, D. (ed.) Lives in Stress: Women and Depression, Sage, New York, 1982, 35-53.
- Manera, E. and Wright, R. Can you identify your source of stress. Clearing House, 1981, 55, 53-58.
- Marrow, A. (ed.) The Failure of Success, AMACOM, 1973.
- Marcus, A. and Seeman, T. Sex differences in reports of illness and disability; a preliminary test of the 'fixed role obligations' hypotheses. Journal of Health and Social Behaviour, 1981, 22, 174-182.
- Margolis, B. and Kroes, W. Occupational stress and strain. In McLean, A. (ed.) Occupational Stress, Thomas, New York, 1974.

- Maslach, C. and Jackson, S. The measurement of experienced burnout. Journal of Occupational Behaviour, 1981, 1, 99-113.
- Masuda, M. and Holmes, T. Life events: Perceptions and frequencies. Psychosomatic Medicine, 1978, 40, 236-261.
- Matney, D. Stress management. Counselling and Human Development, 1983, 15.
- Maxim, P. and Plecas, D. Correctional Work Environment Assessment Questionnaire, Mimeo, 1983.
- McCorkle, R. and Young, K. Development of a symptom distress scale. Cancer Nursing, 1978, 373-378.
- McFarlane, A., Norman, G., Streiner, D., Roy, R. and Scott, C. A longitudinal study of the influence of the psychosocial environment on health status: a preliminary report. Journal of Health and Social Behaviour, 1980, 21, 124-133.
- McFarlane, A., Neale, D., Norman, G., Roy, R. and Streiner, D. Methodological issues in developing a scale to measure social support. Schizophrenia Bulletin, 1981, 7, 90-100.
- McFarlane, A., Norman, G. and Streiner, D. The process of social stress: stable, reciprocal and mediating relationships. Journal of Health and Social Behaviour, 1983, 24, 160-173.
- McGrath, J. Social And Psychological Factors in Stress. Holt, Rinehart and Winston, New York, 1970.
- McGrath, J., Methodological problems in research on stress. In Krohne, H. and Laux, L. Achievement Stress and Anxiety. Hemisphere Publishing, Franklin, New York, 1982.
- McLean, A. Occupational Stress. Charles Thomas, Springfield, Illinois, 1974.
- McLean, A. Work Stress. Addison-Wesley Publishing Company, New York, 1979.
- McMahon, B. and Pugh, T. Epidemiology: Principles and Methods. Little Brown Co. Boston, Massachusetts, 1970.
- McMurray, J. Mainstreaming and Teacher Burnout: a Study of Stress. Paper presented at Ontario Educational Research Council, 1981.
- McMurray, J. Elementary Teacher Stress in Canada: the Question of 'Burnout'. Paper presented at the First National Conference on Human Burnout, Philadelphia, 1981.
- McRae, R. Age differences in the use of coping mechanisms. Journal of Gerontology, 1982, 37, 454-460.
- Mechanic, D. Students Under Stress. Free Press, New York, 1962.

- Mechanic, D. Some problems in developing a social psychology of adaptation to stress. In McGrath, J. (ed.) Social Psychological Factors in Stress, Holt Rhinehart and Winston, New York, 1970.
- Mechanic, D. Discussion of research progress on relations between stressful life events and episodes of physical illness. In Dohrenwend, B. and Dohrenwend, B. (eds.) Stressful Life Events, Wiley, New York, 1974.
- Mechanic, D. Stress, illness and illness behaviour. Journal of Human Stress, June, 1976, 2-6.
- Mechanic, D. Illness behaviour, social adaptation and the management of illness. The Journal of Nervous and Mental Disease, August, 1977, 165, 79-87.
- Medalie, J. and Goldbourt, U. Angina pectoris among 10,000 men. The American Journal of Medicine, 1976, 60, 910-921.
- Mednick, M., Tangri, S. and Hoffman, L. (eds) Women and Achievement. Hemisphere Publishing, Franklinville, New York, 1975.
- Meier, S., The construct validity of burnout, Journal of Occupational Psychology, 1984, 57, 211-219.
- Meltzer, J. and Hochstim, J. Reliability and validity of survey data on physical health. Public Health Reports, 1970, 85, 1075-1086.
- Menaghan, E. and Merves, E. Coping with occupational problems: the limits of individual efforts. Journal of Health and Social Behaviour, 1984, 25, 406-423.
- Menaker, E. Some inner conflicts of women in a changing society. In Roland, A. and Harris, B. (eds) Career and Motherhood: Struggles For A New Identity. Human Sciences Press, New York, 1979.
- Miller, R. Bentz, W., Aponte, S. and Brogan, D. Perception of life crisis events: a comparative study of rural-urban samples. In Dohrenwend, B. and Dohrenwend B. (eds.) Stressful Life Events, Wiley, New York, 1974.
- Miller, P., Ingham, J. and Davidson, S. Life events, symptoms and social support. Journal of Psychosomatic Research, 1976, 20, 515-522.
- Miller, P. and Ingham, J. Reflections on the life-events-to-illness link with some preliminary findings. In Sarason I. and Spielberger, C. (eds.) Stress and Anxiety, Vol.6, Hemisphere Publishing, Franklinville, New York, 1979.

- Miller, W. Dealing with stress: a challenge for educators. Phi Delta Kappa Educational Foundation, 1979.
- Millman, M. and Kanter, R. Another Voice, Anchor Books, 1975.
- Minter, R. and Kimball, C. Life events, personality traits and illness. In Kutash, I. and Schlesinger, L. (eds.) Handbook on Stress and Anxiety, Jossey Bass, San Francisco, 1980.
- Mirowsky, J. and Ross, C. Paranoia and the structure of powerlessness. American Sociological Review, 1983, 48, 228-239.
- Monat, A. and Lazarus, R. Stress and Coping. Columbia University Press, New York, 1977.
- Moos, R. Psychological techniques in the assessment of adaptive behaviour. In Coehlo, G., Hamburg, A. and Adams, J. Coping and Adaptation. Public Health Services Publication, 1974.
- Moos, R. (ed.) Human Adaptation: Coping With Life Crises. D.C. Heath and Co., Lexington, Massachusetts, 1976.
- Moos, R. and Billings, A. Conceptualizing and measuring coping resources and processes. In Goldberger, L. and Breznitz, S. (eds.) Handbook of Stress, Collier MacMillan Publishers, London, 1982, 212-230.
- Moos, R., Cronkite, R., Billings, A., and Finney, J. Health and Daily Living Form Manual. (mimeo) Stanford University, 1983.
- Moracco, J. and McFadden, H. Principals and counsellors: collaborative roles in reducing teacher stress. National Association of Secondary School Principals Bulletin, 65, 41-46.
- Mordkoff, A. The relationship between psychological and physiological response to stress. Psychosomatic Medicine, 1964, 26, 135-150.
- Morgan, W. Psychological benefits of physical exercise. In Lipowski, A. (ed.) Psychosocial Aspects of Physical Illness, S. Karger Basel, 1972.
- Morosan, E. and Pearson, R. Upon whom do you depend - mapping personal support systems. Canada's Mental Health, March, 1981.
- Morrow, L. The Burnout of almost everyone. Time, September 21, 1981.
- Moss, G. Biosocial resonance: conceptual model of the links between social behaviour and physical illness. International Journal of Psychiatry in Medicine, 1974, 5, 401-406.

- Moss, P. and Fonda, W. Work and the Family. Temple Smith, 1980.
- Mueller, D., Edwards, D., and Yarvis, R. Stressful life events and psychiatric symptomatology: change or undesirability? Journal of Health and Social Behaviour, 1977, 18, 307-317.
- Mueller, D. Social networks: a promising direction for research on the relationship of the social environment to psychiatric disorder. Social Science and Medicine, 1980, 14A, 147-161.
- Murdoch, S. Relax and do better. The Graduate, 1981, 6-10.
- Myers, J., Lindenthal, J., Pepper, M., and Ostrander, D. Life events and mental status: a longitudinal study. Journal of Health and Social Behaviour, 1972, 13, 398-405.
- Myers, J., Lindenthal, J. and Pepper, M. Social class, life events and psychiatric symptoms: a longitudinal study. In Dohrenwend, B. and Dohrenwend, B. (eds.) Stressful Life Events, Wiley, New York, 1974.
- Myers, M. The professional woman as patient: a review and appeal. Canadian Journal of Psychiatry, 1982, 27, 236-240.
- Nadelson, C. Bound by conception. In Stallman, J. Women's Work, Women's Health, Random House, New York, 1977.
- Nash, C. and Allyn, M., Teacher stress: measurement and implications. Paper presented at 22nd Annual Meeting of the Ontario Educational Research Council, November 1980, Toronto.
- Nathanson, C. Illness and the feminine role: a theoretical review. Social Science and Medicine, 1975, 9, 57-62.
- Needle, R., Griffin, T. and Svenden, R. Occupational stress: coping and health problems of teachers. Journal of School Health, 1981, 51, 175-181.
- Needle, R.H., Griffin, T., Svenden, R. and Berney, D. Teacher stress: sources and consequences. The Journal of School Health, 1980, 50, 96-99.
- Neff, W. Work and Human Behaviour, Aldine Publishing Co. 1977.
- Neville, S. Job stress and burnout: occupational hazards for service staff. College And Research Libraries, May, 1981.
- Newcomb, M., Huga, G. and Bentler, P. A multidimensional assessment of life stress events among adolescents. Journal of Health and Social Behaviour, 1981, 22, 400-415.

- Newman, J. and Beehr, T. Personal and organizational strategies for handling job stress: a review of research and opinion. Personnel Psychology, 32, 1979.
- Norbeck, J., Lindsey, A. and Carrieri, V. The development of an instrument to measure social support. Nursing Research, 1981, 3, 264-269.
- Norbeck, J. and Tilden, V. Life stress, social support and emotional disequilibrium in complications of pregnancy: a prospective multivariate study. Journal of Health and Social Behaviour, 1983, 24, 30-46.
- Nuckolls, K., Cassel, J. and Kaplan, B. Psychosocial assets, life crisis and the prognosis of pregnancy. American Journal of Epidemiology, 1972, 95, 431-441.
- Nunnally, J. Tests and Measurements. McGraw-Hill, Montreal, Quebec, 1959.
- Nunnally, J. Psychometric Theory. McGraw Hill, Montreal, Quebec, 1967.
- O'Brien, D. Coping with occupational stress, Journal of Physical Education Research and Development, Nov/Dec., 1981.
- O'Leary, V. Toward Understanding Women. Brooks/Cole Publishing Co., Belmont, California, 1977.
- Oliver, J. and Pomicter, C. Depression in automobile assembly-line workers as a function of unemployment variables. American Journal of Community Psychology, 1981, 9, 507-512.
- Pancheri, P., DeMartins, V., Spiombi, G., Biondi, E. and Mosticoni, S. Life stress events and state-trait anxiety in psychiatric and psychosomatic patients. In Sarason, I. and Spielberger, C. (eds.) Stress and Anxiety, Vol. 6, Hemisphere Publishing, Franklinville, New York, 1979.
- Parkerson, G., Gehlback, S., Wagner, E., James, S., Clapp, N., and Muhlbarer, L. The Duke-UNC Health Profile: an adult health status instrument for primary care. Medical Care, 1981, 19, 806-823.
- Parkes, C., and Brown R. Health after bereavement. Psychosomatic Medicine, 1972, 34, 449-461.
- Patrick, D., Bush, J., and Chen, M. Toward an operational definition of health. Journal Of Health and Social Behaviour, 1973, 14.
- Patrick, D., Bush, J. And Chen, M. Methods for measuring levels of well-being for a health status index. Health Services Research, 1973, 8, 228-245.

- Patrick, D. Psychosocial support and the course of disability. Paper presented at American Public Health Association, Montreal, 1982.
- Paykel, E., Myers, J., Dienes, M., Klerman, G., Lindenthal, J., Pepper, M. Life events and depression, Archives of General Psychiatry, 1969, 21.
- Paykel, E. Contribution of life events to causation of psychiatric illness. Psychological Medicine, 1978, 8, 245-253.
- Payne, J. Demands, supports, constraints and psychological health. In Mackay, C. and Cox, T. (eds.) Response to Stress-Occupational Aspects, IPC Science and Technology Press, 1978.
- Payne, R. Organizational stress and social support. In Cooper, C. and Payne, R. Current Concerns In Occupational Stress, John Wiley and Sons, New York, 1980.
- Payne, R. Jick, T. and Burke, R. Whither stress research?: an agenda for the 1980's. Journal of Occupational Behaviour, 1982, 3, 131-145.
- Pearlin, L. Sex roles and depression. In Dana, N. and Ginsberg, L. (eds.) Normative Life Crises, Academic Press, New York, 1975.
- Pearlin, L. Status inequality and stress in marriage. American Sociological Review, 1975, 40, 344-357.
- Pearlin, L. and Schooler, C. The structure of coping. Journal of Health and Social Behaviour, 1978, 19.
- Pearlin, L. The life cycle and life strains. In Blalock, H. (ed.) Sociological Theory and Research, The Free Press, New York, 1980.
- Pedhazur, E. Multiple Regression in Behavioral Research, Holt Rinehart and Winston, 1982.
- Pepitone, J. Self, social environment and stress. In Appley, M. and Trumbell, R. (eds.) Psychological Stress, Appletton Century Crofts, New York, 1967.
- Perkins, D. The assessment of stress using life events scales. In Goldberger, L. and Breznitz, S. (eds.) Handbook of Stress, Collier MacMillan Publishers, 1982.
- Perlmutter, L. and Monty, R. The importance of perceived control: fact or fantasy? American Scientist, 1977, 65.
- Pervin, L. and Lewis, M. Perspectives in Interactional Psychology. Plenum, New York, 1976.
- Phillips, B. and Lee, M. The changing role of the American teacher: current and future sources of stress. In Cooper, C. and Marshall, J. (eds.) White Collar and Professional Stress, Wiley and Sons, New York, 1980.

- Pines, A., Aronson, E. and Kafry, D., Burnout: From Tedium To Personal Growth, Free Press, New York, 1981.
- Porter-Gump, J. Sex-role attitudes and psychological wellbeing. In Mednick, M., Tangri, S. and Hoffman, L. (eds) Women and Achievement. Hemisphere Publishing, Franklinville, New York, 1975.
- Pratt, J. Psychological evidence of stress among teachers. In Mackay, C. and Cox, T. Response to Stress: Occupational Aspects, IPC and Technology Press, 1978.
- Pugh, W., Erickson, J., Rubin, R., Gunderson, E., Rahe R., Cluster analysis of life changes, Archives of General Psychiatry, 1971, 25.
- Rabkin, J. and Struening, E. Life events, stress and illness. Science, 1976, 194, 1013-1020.
- Rabkin, J. Stressful Life events and schizophrenia: A review of the research literature. Psychological Bulletin, 1980, 87, 408-425.
- Radloff, L. Sex differences in depression: the effects of occupation and marital status. Sex Roles, 1975, 1, 249-265.
- Radloff, L. The CES-D scale: a self-report depression scale for research in the general population. Applied Psychological Measurement, 1977, 1.
- Rahe, R. and Arthur, R. Life change patterns surrounding illness experience. Journal of Psychosomatic Research, 1968, 2, 341-345.
- Rahe, R. Multi-cultural correlations of life change scaling: America, Japan, Denmark, Sweden. Journal of Psychosomatic Research. 1969, 13, 191-195.
- Rahe, R., Mahan, J., Arthur, R. and Gunderson, E. The epidemiology of illness in naval environments: illness types, distribution, severities, and relationship to life change. Military Medicine, June 1970.
- Rahe, R. and Paasikivi, J. Psychosocial factors and myocardial infarction Journal of Psychosomatic Research, 1971, 15, 33-39.
- Rahe, R. The pathway between subjects' recent life changes and their near-future illness reports. In Dohrenwend, B. and Dohrenwend, B. (eds.) Stressful Life Events, Wiley, New York, 1974.
- Rahe, R. Epidemiological studies of life change and illness. International Journal of Psychiatry in Medicine, 1975, 6.

- Rane, R. and Arthur, R. Life change and illness studies: past history and future directions. Journal of Human Stress, March, 1978.
- Rahe, R. Life change events and mental illness: an overview. Journal of Human Stress, September, 1979.
- Rapaport, R. and Rapaport, R. Dual-Career Families Re-Examined. Martin Robertson and Co. Ltd., London, 1976.
- Ray, C., Lindop, J. and Gibson, S. The concept of coping. Psychological Medicine, 1982, 12, 385-395.
- Redfield, J. and Stone, A. Individual viewpoints of stressful life events. Journal of Consulting and Clinical Psychology, 1979, 47, 147-154.
- Reed, D., McGee, D. and Yans, K. Psychosocial processes and general susceptibility to chronic disease. American Journal of Epidemiology, 1984, 119, 356-370.
- Riccio, A. On coping with the stress of teaching. Theory Into Practice, 1983, 22, 43-47.
- Roberts, R. and O'Keefe, S. Sex differences in depression reexamined. Journal of Health and Social Behaviour, 1981, 22, 394-400.
- Rockwell, R., Sommer, B., Sassenrath, E., Koker, P. and Moore, D. Job stress and health in working women. Journal of Human Stress, 1981, 19-25.
- Roghman, D. and Haggerty, R. Family stress and the use of health services. International Journal of Epidemiology, 1972, 1.
- Roland, A. and Harris, B. (eds) Career and Motherhood: Struggles for a New Identity, Human Sciences Press, New York, 1979.
- Rosenman, R., Brand, R., Sholtz, R. and Friedman, M. Multivariate prediction of coronary heart disease during 8.5 year follow-up in the Western Collaborative Group Study, American Journal of Cardiology, 1976, 37, 903-910.
- Rosenman, R. and Chesney, M. The relationship of Type A behaviour to coronary heart disease, Activitas Nervosa Superior, 1980, 22, 1-45.
- Ross, C. and Mirowsky, J. A comparison of life events - weighting schemes: change, undesirability and effect proportional indices. Journal of Health and Social Behaviour, 1979, 20.
- Ross, C., Mirowsky, J. and Ulbrich, P. Distress and the traditional female role: a comparison of Mexicans and Anglos. American Journal of Sociology. 1983, 89, 670-682.

- Roy, A. Vulnerability factors and depression in women. British Journal of Psychiatry, 1978, 133, 106-110.
- Rubin, R.T., Gunderson, E. and Arthur, R. Life stress and illness patterns in the U.S. Navy: environmental and demographic variables in relation to illness onset in a battleship's crew. Journal of Psychosomatic Research, 1971, 15, 277-288.
- Rubin, R., Gunderson, E. and Arthur, R. Life stress and illness patterns in the U.S. Navy: prior life changes and illness onset in a battleship crew. Journal of Psychosomatic Research, 1971, 15, 89-94.
- Ruch, L. and Holmes, T. Scaling of life change: comparison of direct and indirect methods. Journal of Psychosomatic Research, 1971, 15, 221-227.
- Ruch, L. A multidimensional analysis of the concept of life change. Journal of Health and Social Behaviour, 1977, 18.
- Rutter, M. Psychosocial factors in the short-term prognosis of physical disease: peptic ulcer. Journal of Psychosomatic Research, 1963, 7.
- Sanders, G. and Suls, J. (eds.) Social Psychology of Health and Illness. Lawrence Erlbaum Associates, Hillsdale, New York, 1982.
- Sarason, I. and Johnson, J. Life stress, organizational stress and job satisfaction. Psychological Reports, 1979, 44.
- Sarason, I., Johnson, J. and Siegel, T. Assessing the impact of life changes. In Sarason, I. and Spielberger, C. (eds.), Stress and Anxiety, Vol. 6, Hemisphere Publishing, Franklinville, New York, 1979.
- Sarason, I. and Spielberger, C. Stress and Anxiety, Vol. 6, Hemisphere Publishing, Franklinville, New York, 1979.
- Sarason, I. and Spielberger, C. (eds.) Stress and Anxiety, Vol. 7, Hemisphere Publishing, Franklinville, New York, 1980.
- Sarason, I. Life stress, self-preoccupation and social supports. In Sarason, I. and Spielberger, C. Stress and Anxiety, Vol. 7, Hemisphere Publishing, Franklinville, New York, 1980.
- Sarason, I., Sarason, B., Potter, E. and Antoni, M. Life events, social support and illness. Psychosomatic Medicine, 1985, 47, 156-163.
- Saville, A. Reading, writing and stress metric. Unpublished manuscript, University of Nevada, 1981.
- Schaefer, C., Coyne, J., and Lazarus, R. The health-related function of social support. Journal of Behavioural Medicine, 1981, 4, 381-406.

- Schafer, W. Stress, distress and growth, Responsible Action, 1978.
- Schlesselman, J. Case-control Studies. Oxford University Press, 1982.
- Schuler, R. An integrative transactional process model of stress in organizations. Journal of Occupational Behaviour, 1982, 3, 5-19.
- Schwab, R. Teacher burnout; moving beyond 'psycho-babble'. Theory Into Practice, 1982, 22.
- Schwab, R. and Iwanicki, E. Who are our burned out teachers? Educational Research Quarterly, 1982, 7, 5-16.
- Scrivens, R. The big click. Today's Education, 1979, 68, 34-39.
- Seers, A., McGee, G., Serey, T., and Graen, G. The interaction of job stress and social support: a strong inference investigation. Academy of Management Journal, 1983, 26, 273-284.
- Sekaran, U. The paths to mental health: an exploratory study of husbands and wives in dual-career families. Journal of Occupational Psychology, 1985, 58, 129-137.
- Selye, H. Stress Without Distress, J.B. Lippincott Co., New York, 1975.
- Selye, H. The Stress of Life (revised) McGraw Hill Book Company, Montreal, Quebec, 1976.
- Selye, H. The stress concept today. In Kutash, E. and Schlesinger, L. Handbook of Stress and Anxiety, Jossey Bass, San Francisco, 1980.
- Selye, H. (ed.) Selye's Guide to Stress Research, Van Nostrand; Cincinatti, Ohio, 1980.
- Selzer, M. and Vinokur, A. Life events, subjective stress and traffic accidents. American Journal of Psychiatry, 1974, 131, 903-906.
- Sethi, A. and Schuler, R. Handbook of Organizational Stress Coping Strategies. Ballinger Publishing, Cambridge, Massachusetts, 1984.
- Sexton, P. Women in Education. Phi Delta Kappa, 1976.
- Shaffer, M. Life After Stress, Plenum Press, 1982.
- Shaw, S., Bensky, J. and Dixon, B. Stress and Burnout. Council for Exceptional Children, ERIC Clearinghouse, 1981.
- Shuto, L. The stress connection, The B.C. Teacher, 1981.
- Sidle, A., Moos, R., Adams, J. and Cady, P. A development of a coping scale. Archives of General Psychiatry, 1969, 20, 226-232.

- Snedecor, G. and Cochran, W. Statistical Methods, Iowa State University Press, 1980.
- Solomon, A. and Bromet, E. The role of social factors in affective disorder: an assessment of the vulnerability model of Brown and his colleagues. Psychological Medicine, 1982, 12, 123-130.
- Sommers, D. and Lasry, J. Personality and reactions to stressful life events. Canada's Mental Health, 1984, 32, 19-20.
- Sparks, D. Practical solutions for teacher stress. Theory Into Practice, 1982, 22.
- Spence, J. Traits, roles and the concept of androgyny. In Gullahorn, J. (ed.) Psychology and Women in transition, V.H. Winston and Sons, Washington, D.C., 1979.
- Spilken, A. and Jacobs, M. Prediction of illness behaviour from measures of life crisis, manifest distress and maladaptive coping. Psychosomatic Medicine, 1971, 33.
- Spitzer, R., Endicott, J., Fleiss, J. and Cohen, J. The psychiatric status schedule: a technique for evaluating psychopathology and impairment in role functioning. Archives of General Psychiatry, 1970, 23, 41-55.
- Statistics Canada, Women In Canada: A Statistical Report, Ottawa, 1985.
- Stellman, J.M. Women's Work, Women's Health, Random House, New York, 1971.
- Stern, R. and Higgins, J. Perceived somatic reactions to stress: sex, age and familial occurrence. Journal of Psychosomatic Research, 1969, 13, 77-82.
- Stevens, A. Stress stops teachers having babies. London Observer, September 18, 1983.
- Stone, G., Cohen, F. and Adler, N. Health Psychology: A Handbook. Jossey Bass, San Francisco, 1979.
- Stone, A. and Neale, J. New measure of daily coping: development and preliminary results. Journal of Personality and Social Psychology, 1984, 46, 892-906.
- Sulls, J. Social support, interpersonal relations and health: benefits and liabilities. In Sanders, G. and Sulls, J. Social Psychology of Health and Illness, Lawrence Erlbaum Associates, 1982.
- Susser, M. Epidemiological models. In Struening, E. and Guttentag, M. (eds.) Handbook of Evaluation Research, Sage Publications, New York, 1975.
- Sutton, R. Job stress among primary and secondary school teachers. Work and Occupations, 1984, 11, 7-28.

- Susser, M. Widowhood: a situational life stress or a stressful life event? American Journal of Public Health, 1981, 71, 793-795.
- Susser, M. The epidemiology of life stress. Psychological Medicine, 1981, 11, 1-8.
- Sweeney, J. Responsibilities and fulfillment of needs - burnout remedies. Kaplan, 1981.
- Swick, K. and Hanley, P. Stress and the classroom teacher. National Education Association, 1980.
- Swogger, G. Towards understanding stress: a map of the territory. Journal of School Health, January, 1981.
- Syme, S. Behavioural factors associated with the etiology of physical disease: a social epidemiological approach. American Journal of Public Health, 1974, 64, 1043-1045.
- Syrotuik, J. and D'Arcy, C. Saskatchewan Teacher Stress Study. Applied Research Unit, University Hospital, Saskatoon, 1983.
- Tausig, M. Measuring life events. Journal of Health and Social Behaviour 1982; 23, 52-64.
- Tebbets, R. Work: its meaning for women's lives. In Belle, D. (ed.) Lives on Stress: Women and Depression, Sage, New York, 1982.
- Tellenback, S., Brenner, S. and Lofgren, H. Teacher Stress: exploratory model building. Journal of Occupational Psychology, 1983, 56, 19-33.
- Tennant, C. and Andrews, G. A scale to measure the stress of life events. Australian and New Zealand Journal of Psychiatry, 1976, 10, 27-32.
- Tessler, R. and Mechanic, D. Psychological distress and perceived health status. Journal of Health and Social Behaviour, 1978, 19, 254-262.
- Theorell, T. Life events before and after the onset of a premature myocardial infarction. In Dohrenwend, B. and Dohrenwend, B. (eds.) Stressful Life Events. Wiley, New York, 1974.
- Theorell, T. Selected illnesses and somatic factors in relation to two psychosocial stress indices - a prospective study of middle-aged construction building workers. Journal of Psychosomatic Research, 1976, 20, 7-20.
- Thoits, P. Conceptual, methodological and theoretical problems in studying social support as a buffer against life stress. Journal of Health and Social Behaviour, 1982, 23.

- Tnoits, P. Life stress, social support and psychological vulnerability: epidemiological considerations. Journal of Community Psychology, 1982, 10, 341-362.
- Tnoits, P. Multiple identities and psychological well-being. American Sociological Review, 1984, 48, 174-187.
- Thompson, D. Every Woman's Health: The Complete Guide to Body and Mind, Doubleday, New York, 1980.
- Thurlow, H.J. Illness in relation to life situation and sick-role tendency. Journal of Psychosomatic Research, 1971, 15, 73-88.
- Torrance, E.P. Constructive Behaviour: Stress, Personality and Mental Health, Wadsworth Publishing Co., Belmont, California, 1965.
- Truch, S. Teacher Burnout and What To Do About It, Academic Therapy Publications, New York, 1980.
- Truman, R. When stress 'breaks' a school teacher. The Globe and Mail, September 8, 1983.
- Tung, R. and Koch, J. School administrators sources of stress and ways of coping with it. In Cooper, C. and Marshall, J. White Collar and Professional Stress, Wiley and Sons, New York, 1980.
- Turner J. Social support as a contingency in psychological well-being. Journal of Health and Social Behaviour, 1981, 22.
- Turner, J., Frankel, G. and Levin, D. Social support: conceptualization, measurement and implications for mental health. In Greenley, J. (ed.) Research In Community and Mental Health, JAI Press, Greenwich, Connecticut, 1984.
- Twaddle, A. The concepts of sick role and illness behaviour. Advanced Psychosomatic Medicine, 1972, 8.
- Ursin, H. and Marison, R. Biological and Psychological Basis of Psychosomatic Disease. Pergamon Press, Elmsford, New York, 1983.
- Vaillant, G. Adaptation to Life. Little Brown and Co., New York, 1977.
- Vanfossen, B. Sex differences in the mental health effects of spousal support and equity. Journal of Health and Social Behaviour, 1981, 22, 130-143.
- Verbrugge, L. Multiple roles and physical health of women and men. Journal of Health and Social Behaviour, 1983, 24, 16-30.

- Vossel, G. and Froehlich, W. Life stress, job tension and subjective reports of task performance effectiveness. In Sarason, I. and Spielberger, C. (eds.) Stress and Anxiety, Vol. 6, Hemisphere, Franklinville, New York, 1979.
- Waldron, I. The coronary-prone behaviour pattern, blood pressure, employment and socio-economic status in women. Journal of Psychosomatic Research, 1978, 22, 79-87.
- Walker, K., MacBride, A., and Vachon, M. Social support networks and the crisis of bereavement. Social Science and Medicine, 1971, 11, 35-41.
- Wan, T., and Lievieratos, B. Interpreting a general index of subjective well-being. Health and Society, 1978, 56, 531-556.
- Wardell, W. A study of stress and coronary heart disease in an urban population, Bulletin of the New York Academy of Medicine, 1973, 49, 521-531.
- Ware, J., Brook, R., Davies, A. and Lohr, K. Choosing measures of health status for individuals in general populations. American Journal of Public Health, 1981, 71, 620-625.
- Ware, J. Methodological considerations in the selection of health status assessment procedures. In Wenger, N., Mattson, M; Furberg, C. and Elinin, J. Assessment of Quality of Life in Clinical Trials of Cardiovascular Therapies, Le Jacq Publishing, 1984.
- Warheit, G. Life events, coping, stress and depressive symptomatology. American Journal of Psychiatry, 1976, 136, 502-507.
- Warheit, G., Veya, W., Shimizu, D. and Meinhurdt, K. Interpersonal coping networks and mental health problems among four race-ethnic groups. Journal of Community Psychology, 1982, 10, 312-324.
- Wallis, C. Stress: can we cope? Time, June 6, 1983, 54-62.
- Weick, K. The ESS in stress some conceptual and methodological problems. In McGrath (ed.) Social and Psychological Factors In Stress, Holt Rhinehart and Winston, 1970.
- Weiskopf, P.E. Burnout among teachers of exceptional children. Exceptional Children, 1980, 47, 18-23.
- Weyer, C. and Hodapp, V. Job stress and essential hypertension. In Sarason, I. and Spielberger, C. (eds.) Stress and Anxiety, Vol. 6, Hemisphere Publishing, Franklinville, New York, 1979.
- Wheaton, B. A comparison of the moderating effects of personal coping resources on the impact of exposure to stress in two groups. Journal of Community Psychology, 1982, 10, 293-310.

Wheeler, A., Lee, E., Hardy, D. Employment, sense of well-being and use of professional services among women. American Journal of Public Health, 1983, 73, 908-911.

White, R.W. Strategies of adaptation: an attempt at systematic description. In Coehlo, G. (ed.) Coping and Adaptation, 1974.

Wildman, R. and Johnson, D. Life change and Langner's 22 item mental health index: a study and partial replication. Journal of Health and Social Behaviour, 1977, 18, 179-188.

Williams, M. Organizational Stress Experienced by Teachers. Unpublished doctoral thesis, Edmonton: University of Alberta, 1981.

Williams, J., Ware, J. and Donald, C. A model of mental health, life events and social supports applicable to general populations. Journal of Health and Social Behaviour, 1981, 22, 324-336.

Williams, J. (ed.) Psychology of Women, W. W. Norton, New York, 1979.

Wolinsky, F. The Sociology of Health. Little Brown and Co., New York, 1980.

Wood, C. The Man Who Believes in Stress, New Scientist, March, 1981.

Wylor, A., Masuda, M. and Holmes, T. Magnitude of life events and seriousness of illness. Psychosomatic Medicine, 1971, 33, 115-122.

Wylor, A., Masuda, M. and Holmes T. Seriousness of illness rating scale. Journal of Psychosomatic Research, 1968, 11, 363-374.

Yolahem, A. The Careers of Professional Women, Universe Books, New York, 1979.

Youngs, B. B. Anxiety and stress - how they affect teachers teaching, NASSP Bulletin, November 1978.

Zalenznik, A., Kets de Vries, M., and Howard J. Stress reactions in organizations: syndromes, causes and consequences. Behavioural Science, 1977, 22, 151-162.

Ziegler, H. Male and Female: differing perceptions of the teaching experience. In Theodore, A. (ed) The Professional Woman, Schenkman Publishing Co., Morristown, New York, 1971.

Zur-Szpiro, S. and Longfellow, C. Father's support to mothers and children. In Belle, D. (ed.) Lives in Stress: Women and Depression. Sage, New York, 1982.

The Health of Canadians: Report of the Canada Health Survey, Ministry of Supply and Service Canada, Ottawa, 1981.

Social Concepts Directory, Ministry of Supply and Service Canada, Ottawa, 1980.

Stress in Schools. National Association of School Masters and Union of Women Teachers, Kings Norton Press Group, 1976.

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- Hiebert, B. Stress and Teachers: The Canadian Scene. Canadian Education Association, 1985.
- Hinkle, L., Christenson, W., Kane, F., Ostfeld, A., Thetford, W. and Wolff, H. An investigation of the relation between life experience, personality characteristics and general susceptibility to illness. Psychosomatic Medicine, 1958, 70, 278.
- Hinkle, L., Whitney, L., Lehman, E., Dunn, J., Benjamin, B., King, R., Plakun, A. and Flehnyer, B. Occupation, education and coronary heart disease. In Lipowski, Z. (ed.) Psychosocial Aspects of Physical Disease, Karger, 1972.
- Hinkle, L. The effect of exposure to culture change, social change and change in interpersonal relationships on health. In Dohrenwend, B. and Dohrenwend, B. (eds.), Stressful Life Events, Wiley, New York, New York, 1974.
- Hocnschild, A. A Review of Sex Role Research. In Huber, J. (ed.) Changing Women in a Changing Society, University of Chicago Press, Chicago, Illinois, 1973.
- Holahan, C. and Gilbert, L. Conflict between major life roles: women and men in dual career couples. Human Relations, 1979, 32, 451-467.
- Holahan, C. and Moos, R. Social support and psychological distress: a longitudinal analysis. Journal of Abnormal Psychology, 1981, 90, 365-370.
- Holdaway, E. Teacher Satisfaction: An Alberta Report. University of Alberta, 1978.
- Hollander, R., McQueen, D. and Celentano, D. Women and Work-Related Stress: A Research Agenda. Paper presented at American Public Health Association, Montreal, 1982.
- Holmes, T. and Masuda, M. Life change and illness susceptibility. In Dohrenwend, B. and Dohrenwend, B. (eds.), Stressful Life Events, Wiley, New York, 1974.
- Holmes, T. and Rahe, R. The social readjustment rating scale. Journal of Psychosomatic Research, 1976, 2, 213-218.
- Holroyd, K. and Lazarus, R. Stress, coping and somatic adaptation. In Goldberger, L. and Breznitz, S (eds.), Handbook of Stress, Collier MacMillan Publishers, London, 1982, 21-35.
- Hong, K., Wirt, R., Yellin, A., and Hopwood, J. Psychological attributes, patterns of life change, and illness susceptibility. The Journal of Nervous and Mental Disease, 1979, 167, 275-281.