BELCASTRO, PHILIP ANTHONY

THE RELATIONSHIP BETWEEN SOMATIC COMPLAINTS AND ILLNESSES OF BURNED OUT AND NON BURNED OUT TEACHERS IN SECONDARY CATHOLIC SCHOOLS

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THE RELATIONSHIP BETWEEN SOMATIC COMPLAINTS AND ILLNESSES OF BURNED OUT AND NON BURNED OUT TEACHERS IN SECONDARY CATHOLIC SCHOOLS

DISSERTATION

Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy in the Graduate School of The Ohio State University

By

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The Ohio State University
1980

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This dissertation is dedicated to a few special people in my life who have loved and nurtured me. This dissertation is dedicated to; my parents Frank and Frances, my brothers Vincent and Frank, and my wife Claudia, all of whom I love very much.
ACKNOWLEDGMENTS

Few of man's accomplishments are truly a result of one man's novel thought and engineering. This dissertation is evidence of that belief.

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Finally, I would like to express my never ending gratitude and love for my wife, Claudia. She was and is my cheering section. She inspired my self-confidence and at times was my self-confidence. She willingly endured my frustration and delighted in my accomplishment. She gave me so much that this degree would mean so little without her love.
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CHAPTER I
INTRODUCTION

Throughout history American educators have been concerned with the many variables which impact upon their student's health. Indeed the school health program is one example of a complex network of professionals and services laboring to maintain and improve the health of students. Over the past few years there has been growing concern over the teachers' health. A review of the literature has indicated teachers are experiencing stress, anxiety, job dissatisfaction, physical illness, mental illness, and emotional exhaustion. Based on these reports the question arises, Does the act of teaching in some way represent a health risk to teachers?

A Chicago teachers' union found 56 percent of the 5,500 respondents claimed their job had resulted in physical and/or mental illness (Walsh, 1979). Seventy-eight percent of the teachers in a National Education Association survey reported they experienced moderate or considerable levels of stress (Coates and Thoresen, 1976). Hicks (1933) surveyed 600 teachers and reported 17 percent were usually nervous and another 11 percent had suffered nervous breakdowns. Various authors have suggested these somatic complaints and illnesses
are actually results of a condition called burnout (Sparks, 1979; Servivens, 1979; Needle, et al., 1980).

Freudenberger (1974) states burnout is a verb which describes a professional who is worn out or exhausted as a result of his job making excessive demands on his energy, strength, or resources. He suggests burnout results in several somatic complaints such as headaches and sleeplessness. Spaniol and Caputo (1979) believe burnout disproportionately strikes those in the helping professions such as teachers, counselors and social workers. Maslach and Pines (1977) suggest health and social science professionals are not prepared to cope with the unique emotional stresses of their work. Furthermore, many of them are unable to maintain the caring and the commitment they initially brought to the job, and as a consequence, the process of burnout begins. They go on to state burnout involves a loss of concern for the people with whom one is working. The professional who burns out is unable to deal with the stresses of his job and can experience physical exhaustion, illness, impaired performance, absenteeism, chemical dependencies, marital conflict and mental illness.

Amidst the speculation concerning the etiology of burnout, there are three commonalities which help to explain burnout. First, one major causal factor of burnout is the inherent stresses of one's job. Second, burnout decreases the capacity of a professional to perform his job. Finally,
burnout is thought to produce various somatic complaints, physical illnesses and mental or emotional problems in professionals.

Burnout has been researched on a limited scale in professions such as counseling, law enforcement, social service and child care work (Maslach and Jackson, 1979). However, educators have adopted the term burnout and in doing so assume that burnout in other professions is identical or similar in the teaching profession. Case studies have been published in which teachers report somatic complaints and illnesses similar to those reported by other professionals. To date scores of somatic complaints have been suggested as resultants of burnout. They include: exhaustion, insomnia, migraine headaches, fatigue, gastrointestinal disturbances, shortness of breath, dizziness, nausea, nightmares, loss of weight, heart beating fast, increased blood pressure, cold sweat, tearful, blurred vision and tinnitus (Kyriacou and Sutcliffe, 1978; Bloch, 1978; Maslach, 1976; Freudenberger, 1974). Certain kinds of illnesses have been associated with burnout. These include: drug addition, colitis, kidney problems, coronary heart disease, mental illness, respiratory infections and gastrointestinal problems (Caplan et al., 1975; Needle, et al., 1980; Walsh, 1979; Hunter, 1977). Clearly a teacher's health is in jeopardy if he is experiencing several or all of these somatic complaints and illnesses. Furthermore, if there is
a link between teacher burnout and one or more of these somatic complaints and illnesses, it would seem that additional research into the etiology, early detection, prevention and treatment of teacher burnout is warranted. Willard McGuire, President of the National Educational Association agrees. He estimates teacher burnout has affected the physical and mental health of thousands of teachers with the potential to strike thousands more.

Thus this study investigates whether or not there are somatic complaints and illnesses which are typical of teacher burnout.

**Statement of the Problem**

The purpose of this study was to determine the relationship if any between Central Ohio Secondary Catholic School teachers' somatic complaints and illnesses and their scores on the Maslach Burnout Inventory.

**Subproblems**

1. To identify the somatic complaints and illnesses of central Ohio secondary Catholic school teachers.

2. To identify the scores of central Ohio teachers on the Maslach Burnout Inventory.

3. To determine the relationship, if any, between the somatic complaints and illnesses of central Ohio secondary Catholic school teachers and their scores on the Maslach Burnout Inventory.
Significance of the Study

This study will generate primordial data concerning the prevalence of burnout in a teacher population. Health educators and related professionals can utilize these data to determine whether or not burnout represents a health hazard to teachers.

Instruments which will measure burnout, somatic complaints and illnesses in teachers will be developed and refined. Future researchers will be able to replicate this study and determine if burnout manifests itself in the same physiological ways (vis-a-vis somatic complaints and illnesses) within different teacher populations. Research in this area will determine if there are clinical signs, symptoms and illnesses related to teacher burnout. If such clinical signs and symptoms of teacher burnout do exist, then health educators and related professionals can use this information to develop early detection and prevention programs for teacher burnout victims.

Efforts in this area would be a direct response to the National Education Association Resolution E79-81, entitled "Stress on Teachers and Other School Personnel," which urges programs that will facilitate the recognition, prevention and treatment of stress-related problems.
Limitations

The following limitations are acknowledged in this investigation:

1. The subjects in this study are limited to religious and lay secondary Catholic school teachers in central Ohio.
2. The data collected will be self-reported.
3. The analysis of data can account for only a proportion of the differences if any, between burned out and non burned out teachers and their somatic complaints and illnesses.
4. Since the sample in this study was relatively small, illnesses which may be prevalent among the general population may fail to be reported with significant frequency to be analyzed.
5. The instruments in this study were administered once during the school year and therefore it was not possible to determine if teachers' responses might vary during the school year.

Definition of Terms

The intent and use of terms used in this study are defined in the following manner:

1. Burnout - refers to a professional's physical, emotional and social problems that result from the stresses of his job. These problems decrease the capability of the professional to perform his job and adversely affect his
health. The term burnout is sometimes associated with those people in the helping professions (Maslach and Jackson, 1979).

2. Helping Professions - refers to those professions in which the job description requires professionals to experience close, human interaction with one person or groups of people, i.e. child care workers, social service workers (Maslach and Jackson, 1979).

3. Maslach Burnout Inventory (MBI) - is a scale designed to assess several psychological aspects of burnout. Specifically the MBI addresses three factors of burnout: emotional exhaustion; depersonalization; and personal accomplishment.

4. Illness - refers to any particular destructive process which interrupts or impairs any or all the natural and regular functions of any organ or system of the human body, e.g. coronary heart disease and respiratory infection.

5. Somatic complaints - refers to physical signs and symptoms of the body which are distressing enough for an individual to take notice of them, e.g. headache, blurred vision, heart beating fast.

6. Teacher Somatic Complaint and Illness Inventory (TSCII) - is a scale designed to measure the frequency and intensity of somatic complaints and the presence of illnesses in teachers.
Hypothesis

The null hypothesis states that for the variable scores on the MBI, there are no differences between the mean scores on the TSCII of the two groups (teachers who are not burned out and teachers who are burned out) of secondary Catholic school teachers. The null hypothesis was symbolically expressed for each dependent variable as follows:

\[ H_0: U_1 = U_2 \]

Each of the 39 somatic complaints in the TSCII on both the frequency and intensity scales will be tested for a significant difference. Each of the 12 illnesses in the TSCII will also be tested for a significant difference between the two groups of teachers. The null hypothesis for each dependent variable was as follows:

\[ H_{01}: \text{There will be no significant difference between the two groups of teachers (teachers who are not burned out and burned out teachers) on the frequency of their self-reported somatic complaints (39 separate items).} \]

\[ H_{02}: \text{There will be no significant difference between the two groups of teachers (teachers who are not burned out and burned out teachers) on the intensity of their self-reported somatic complaints (39 separate items).} \]

\[ H_{03}: \text{There will be no significant difference between the two groups of teachers (teachers who are not burned out and burned out teachers) on their self-reported illnesses (12 separate items).} \]
Selye (1974) has theorized that the body's psychological response to a stimulus is specific to that stimulus. However, there is a constant physiological response by the body which remains the same to all stimuli. This constant physiological response to varied stimuli is called stress. Stress can have positive and negative effects. Stress that provides positive effects such as accomplishment and goal attainment is termed eustress. Stress which is associated with negative effects such as depression and illness is termed distress.

Thus a stimulus that produces stress is known as a stressor and an individual's negative psychological and physiological response is known as distress. The focal point of this investigation examines teaching as a stressor and teachers' somatic complaints and illnesses as indicators of distress.

There is an ever-growing body of literature which suggests that stress produces psychological and physiological disorders in man (Rahe, et al., 1974; Selye, 1974; Holmes and Rahe, 1967; McQuade and Aikman, 1974; Paykel, et al., 1976;
Vinokur and Selzer, 1975). There is also a growing body of literature which suggests teachers are experiencing greater and more potent doses of stress (Dunham, 1976; Kyriacou and Sutcliffe, 1979; Sylwester, 1977).

**Psychological Characteristics of Burnout**

The term burnout is not reserved for the teaching profession. Nor is it reserved only for white or blue collar workers. Members of drug cultures describe their peers as being "burnt" or burned out when they demonstrate certain signs and symptoms of drug abuse, especially with the use of marijuana. College students describe their peers as "burnt" or "fried" when they have studied all night (or for long periods) for examinations. In order to facilitate this discussion, the focal point here will be to present certain generic psychological characteristics of the term burnout which readily apply to workers and their occupations.

Freudenberger (1977) defines burnout in the helping professions as follows: burnout means to fail or wear out, or become exhausted by making excessive demands on energy, strength or resources. Burnout involves such characteristics as cynicism and negativism and a tendency to be inflexible and almost rigid in thinking, which leads to a closed mind about change or innovation. Burnout can cause the worker to discuss the client in intellectual and jargon terms. The worker can also develop a paranoia in which he feels his peers
and administration are out to get him. Freudenberger sug-
gests the burnout victim may take the "know-it-all" attitude
or may hardly do any work and become bored. Finally, he
purports that the symptoms of burnout manifest themselves in
every area of the worker's life-functioning with clients;
relationship to agency; life outside the agency including
his emotional attitude; and bodily complaints.

Mattingly (1977) defines burnout as a painful and
personally destructive response to excessive stress. She
states one cannot be identified as burned out by simply
checking off a list of symptoms or behaviors and tabulating
a burnout score. Burnout is a subtle pattern of symptoms,
behaviors, and attitudes that are unique for each person.
She writes:

The person who is burning out is usually
aware of only a vague and inarticulated
personal distress for which he has no name.
These feelings manifest themselves in a
variety of ways, for example, in a
reluctance to go to work, a nonspecific
dissatisfaction with one's level of
practice reflected in feelings that one
should be achieving more or handling
crisis situations with greater skill and
success. Along with these vague feelings
of personal-professional dissatisfaction
comes a growing fatigue. Perhaps at
first the worker just feels the need for
a nap after work, but gradually the fatigue
becomes more serious, and the worker begins
to make changes in his behavior and social
pattern. (p. 131)

Mattingly (1977) agrees with the widely accepted belief
that excessive stresses like that experienced in burnout is
likely to produce physical symptoms. She also agrees that
presently there are no particular health problems which are closely associated with the burnout process.

Spaniol and Caputo (1979) have identified three stages of burnout—first, second, and third degrees. In first degree burnout, the signs and symptoms are short-lived and go away with a minimum of effort. In the second degree burnout, the signs and symptoms last longer and are more difficult to control. An evenings rest might not be enough to cure the signs and symptoms of burnout. In third degree burnout, the signs and symptoms are continuous. Physical and psychological problems develop. Medical and or psychological assistance may not bring quick relief. Existential and philosophical concerns may arise. One may question the value of his work or even life itself.

Spaniol and Caputo (1979) describe nine personal and eight organizational signs and symptoms of burnout. The personal signs and symptoms include: worry, fatigue, inability to make decisions, guilt, physical symptoms, alienation, cynicism/gripping, anger/resentment and accident proneness. The organizational signs and symptoms are: increased absenteeism, low level of enthusiasm, quality of service declines, lack of focus, high level of complaints, lack of communication, lack of acknowledgement or "strokes" and lack of openness to new ideas.

In Freudenberg's, Mattingly's and Spaniol and Caputo's description of burnout, some common psychological profiles
of the burnout victim arise. Maslach and Jackson research this very point and synthesized the burnout syndrome into three factors. Their analysis revealed three general factors of burnout—emotional exhaustion, depersonalization, and personal accomplishment.

Maslach and Jackson (1979) hypothesized that the initial phase of the burnout syndrome is increased feelings of emotional exhaustion. Secondly, a subsequent phase is the development of negative, cynical attitudes and feelings about one's clients. Finally, the third phase of the burnout syndrome is the tendency to evaluate oneself negatively, particularly with regard to one's work with clients. They define burnout as a syndrome of emotional exhaustion and cynicism that occurs frequently among individuals who do "people work" of some kind. With this premise of burnout, Maslach and Jackson constructed the MBI, a scale to measure the burnout syndrome in professionals.

**Prevalence of Teacher Stress**

Dunham (1976) in his study of 658 teachers suggested that teachers are experiencing stress and that severe stress is becoming more and more common among them.

Kyriacou and Sutcliffe (1979) investigated the association between self-reported teacher stress and three response correlates of teacher stress—job satisfaction, absenteeism and intention to leave teaching. This analysis indicated
that self-reported teacher stress was negatively associated with job satisfaction and positively associated with intention to leave teaching. The association between self-reported teacher stress and frequency of absences was not significant.

Twenty-three percent of the school teachers in Kyriacou and Sutcliffe's (1979) study reported teaching as either very stressful or extremely stressful. The teachers identified 14 sources of stress: noisy pupils, too much work to do, lack of concensus on minimum standards, trying to uphold/maintain values and standards, lack of time for marking, administrative work, difficult classes, pupil's poor attitudes to work, covering lessons for absent teachers, poor career structure, individual pupils who continually misbehave, lack of time to spend with individual pupils, inadequate disciplinary policy of school and inadequate salary.

Kyriacou and Sutcliffe (1979) also reported that 59 percent of the respondents had been absent due to ill-health at least once over two school terms. Twenty-three percent of the school teachers indicated that it was fairly or very unlikely that they would still be a teacher in ten years' time.

Kyriacou and Sutcliffe's (1979) definition of teacher stress was stated as follows:

...response syndrome of negative affects (such as anger or depression) usually
accompanied by potentially pathogenic psychological changes (such as increased heart rate) resulting from aspects of the teacher's job and mediated by the perception that the demands made upon the teacher constitute a threat to his self-esteem or well being and by coping mechanisms activated to reduce the perceived threat (p. 89).

Several authors and researchers share Kyriacou and Sutcliffes' views. Teaching is a source of stress and this stress seems to be associated with potentially pathogenic physiological changes in teachers.

Coates and Thoresen (1976) cite several studies in which teachers report nervousness, being worried, somatic complaints, strain, tension, and anxiety. For example, Hicks (1933) found that 17 percent of the teachers he surveyed reported they were unusually nervous. Peck (1933) reported that 33 percent of the teachers he studied suffered from nervous symptoms. In a 1967 National Education Association Survey (1967), 16 percent of the 2,290 teachers reported they were working under considerable strain.

Coates and Thoresen (1976) conclude that the problem of stress and tension experienced by teachers are real, prevalent and potentially deleterious to teachers and students. Furthermore, anxiety appears to occur with considerable frequency and is an important concern among beginning and experienced teachers.

Sylwester (1977) reported that stress was the worst health problem among teachers. This was based upon a teacher
health survey conducted by Instructor Magazine. Styles and Cavanagh (1977) stated that with such a fantastic array of pressures teachers face daily, it is a wonder that nervous collapse and exhaustion are not more rampant.

Sparks (1979) reported that teacher stress or burnout has reached epidemic proportions in some school districts.

Willard McGuire (1979), President of the National Education Association, recently stated in an editorial,

A major new malady has afflicted the teaching profession and threatens to reach epidemic proportions if it isn't checked soon. It has already stricken thousands of sensitive thoughtful, and dedicated teachers--teachers who are abandoning the profession. Additional thousands may join their peers, for they fear for their physical and mental health.

What is the malady? It is teacher burnout a condition that results from stress, tension and anxiety in its victims. (p. 5).

The concern of McGuire and others over the impact of teaching on the teacher's health has prompted the adoption of the National Education Association Resolution E79-81 (Scrivens, 1979). The resolution urges the development of stress-management programs that will facilitate the recognition, prevention and treatment of stress-related problems. Furthermore, the resolution urges that: the harmful effects of stress on teachers and other school personnel be recognized and that procedures be developed that will ensure confidentiality and treatment without personal jeopardy.
Effects of Teacher Stress

To date research into the effects of teacher stress on teacher health are scanty (Walsh, 1979). Kearney and Sinclair (1978) state that research on teacher anxiety is still at a beginning state. Needle (1980) suggests colleges and universities should continue to encourage to support research into the causes and consequences of teacher stress. Cooper and Marshall (1976) indicate that there is very little empirical work on the medical side on how job stress may contribute to physical and mental ill health. Cichon and Koff (1978) raise the research question, "What types of physical and or mental illness are teachers experiencing as a result of teaching?"

Cichon and Koff (1980) surveyed 22,448 certified teachers in Chicago utilizing The Teacher Stress Events Inventory. Twenty-two percent of the teachers said they experienced physical illness while 25 percent of the teachers said they experienced mental illness related to their work. Fifteen percent indicated that they missed 6 or more days of work a year due to illness. The teachers indicated that violence, student discipline, management tension, involuntary transfer, doing a good job, maintaining self control and pedagogical functions were sources of stress for them. Cichon and Koff question these sources of stress as to their relative importance as stressors. They suggest, in the following statement, that studying different school systems might
yield results which show that the pedagogial issues are the dominant avenues of stress.

Replication of this study in a school system where violence, disruption, and teacher transfers are uncommon events might result in the increase in importance of pedagogical issues. (p. 102).

In a survey of 140 teachers, (of a population of 1,600) who attended workshops on teacher stress in Michigan, Sparks (1979) reported that 46 percent of the teachers were dissatisfied with their job. The same percentage of teachers said that if they had to do it over again they would not choose teaching as a career. Twenty-five percent of the teachers indicated they would not stay in teaching until retirement. Fifty-four percent stated that they will change occupations in the next five years. Seventy percent of the teachers reported they frequently or always left school physically or emotionally exhausted. Seventy-five percent of the teachers indicated that their jobs were physically or emotionally stressful. Sparks concluded that there is a need for more controlled, systematic examination of teachers' current attitudes and feelings regarding their work.

Kyriacou and Sutcliffe (1978) conducted a survey of 257 school teachers in England. The purpose of the investigation was to study the prevalence, sources, and symptoms of stress among school teachers. Twenty percent of the school teachers rated teaching as either very stressful or
extremely stressful. All 17 symptoms of stress Kyriacou and Sutcliffe studied correlated positively with self-reported teacher stress. These were: exhausted, frustrated, under stress, very angry, very tense, anxious, depressed, nervous, headaches, heart beating fast, unable to cope, loss of voice, increased blood pressure, panicky, acid in stomach, tearful, and cold sweat. The researchers found that there was very little association between self-reported teacher stress and the biological characteristics of sex qualification, age, length of teaching experience and position held in school. Kyriacou and Sutcliffe question whether personality characteristics rather than the biological characteristics of the individual may be more important determinant of individual differences in teacher stress. The four principal stressors in Kyriacou and Sutcliffe's study were pupil misbehavior, poor working conditions, time pressures, and poor school ethos.

Needle (1980) reports that the following somatic complaints and illnesses have been related to job stress: headaches, dizziness, abdominal pain, sleeplessness, fatigue, job dissatisfaction, anxiety, tension, irritability, depression, coronary heart disease, mental illness and alcoholism.

Hunter (1977) suggests there are two types of stress for teachers. The first is benign or growth producing and the second is malignant and destructive to the body systems.
She suggests the body's responses to malignant stress include difficulty in breathing, chronic insomnia, bowel abnormalities, nausea, ulcers, personality change, depression, and addiction to drugs.

Kyriacou and Sutcliffe have identified 17 symptoms of teacher stress as noted earlier. Of these, the most frequent were exhaustion and frustration.

Bloch (1978) studied 253 classroom teachers who were referred for psychiatric evaluation because of psychological stress and physical trauma. He reported these teachers suffered from changes in their autonomic nervous system affecting their respiration, blood pressure and catecholamine secretions. Additional symptoms included emotional tension, anxiety, insecurity, nightmares, excessive startle response, phobias, cognitive impairment, conversion symptoms, fatigue, weakness, blurred vision, tinnitus, irritability, sensitivity to weather, dizziness, malaise and a variety of depressive equivalents.

Walsh (1979) reports the list of physical ailments ascribed to school stress by Chicago teachers ranges from colitis to ulcers, along with high blood pressure, depression, eye problems, headaches, heart disease, kidney problems and stomach problems.

Although these reported complaints cover a wide scope of areas and presently provide more clues than characteristics of teacher stress, there is some similarity to these teacher complaints and those job related stress complaints.
of other professionals. Indeed those workers in the helping professions report similar complaints as a result of their job stresses (Mattingly, 1977; Freudenberger, 1975; Maslach, 1976).

Mattingly (1977) in her description of burnout in child care work professionals reports complaints such as personal dissatisfaction, fatigue, increase in workers medical contacts, increase in accidents and injuries.

Freudenberger (1975) speaking about staff-burnout in alternative institutions suggests the following are resultants of burnout: feeling of exhaustion, fatigue, unable to shake a cold, feeling physically run down, frequent headaches, gastrointestinal disturbances, loss of weight, sleeplessness, depression and shortness of breath.

Maslach (1976, 1978) who has studied several groups of helping professions including policemen, counselors, nurses, social workers, psychiatrists, psychologists, attorneys and physicians purports the following complaints as being resultants of burnout: emotional exhaustion, use of alcohol and drugs, mental illness, insomnia, ulcers and migraine headaches.

Further similarities of teacher's job related complaints can be found in occupations other than the helping professions. In a four year cross sectional study of job stress and its impact on worker health, Caplan, et al. (1974) studied 23 occupational groups from 67 different sites.
involving 2,010 workers. The following somatic complaints were found in workers: trembling hands, shortness of breath, heart beating fast, sweaty hands, dizziness, upset stomach or stomach ache, heart beating fast, loss of appetite and trouble sleeping at night. Four illnesses showed some relation to psychological stress and they were: cardiovascular disease, respiratory infection, gastrointestinal problems, and peptic ulcers.

Teacher Stress and Its Effects Upon Students

There are numerous scenarios on the economical and social costs of teacher stress to society. Estimating these costs are difficult because of the multivariate nature of stress. However, one cost of teacher stress is worth examining due to its intrinsic relation to teaching, and that is the effect of teacher stress on the student.

Washbourne and Heil suggested that high anxious teachers will have students whose achievement is not as high as students of low anxious teachers (Washbourne and Heil, 1960). Clark found that high anxious teachers gave lower grades to their students than low anxious teachers (Clark, 1972). Kearney and Sinclair in their review article cite these and other studies, and conclude that both theoretical and empirical research is required to clarify the relationship between teacher anxiety and teacher effectiveness (Kearney and Sinclair, 1978). Coates and Thoresen (1976) suggest
that the incidence of anxiety among teachers may have negative effects on students.

Kearney and Sinclair (1978) state that there is some supportive research that indicates teachers may reduce their anxiety by becoming more dogmatic. Campbell and Williamson (1973) found that student teachers under the supervision of teachers with six or more years of experience, become substantially more dogmatic, whereas those student teachers with less experience become somewhat less dogmatic.

Students have to make psychological and social adjustments to teachers who exhibit a low morale, absenteeism, and who leave the profession. Teacher stress has been suggested to be related to these teacher behaviors (Maslach, 1976; Kearney and Sinclair, 1978; Bardo, 1979). Bardo (1979) believes teaching is a job people can handle for only a limited number of years before burning out. She also states that she has never known a burned out teacher who returned to teaching after leaving the profession.

Prescott et al. (1967) suggested that child care teachers in large centers (where teacher to child ratio was 1:12) were more likely to use control and restraint with children than child care teachers in small centers (where teacher to child ratio was 1:6). Maslach and Pines (1977) in their study of 83 staff members in four child care centers purported that staff from high ratio centers (1:12) were more approving of compulsory naps and the use of tranquilizers
for hyperactive children. Also these same staff personnel liked their jobs less and gave a lower evaluation of their centers. Maslach and Pines (1977) state:

> Basically, staff members who worked longer hours with children developed more negative attitudes toward children. They were more approving of compulsory naps, and when they took vacations, they wanted to get as far away as possible from children and child related activities. After a day's work they reported feeling less tolerent, less satisfied, less creative and more moody. They felt less free to express themselves on the job and they did not feel they could take time off when under pressure (p. 107).

Freudenberger (1977) would agree with Maslach and Pines' findings. He views burnout in child care workers as a multiple threat which incapacitates the teacher and robs the child.

The literature in this area is at best speculative and one can only find clues as to the impact of teacher stress and anxiety on students. However, these clues suggest that teacher stress and burnout may adversely affect students in the areas of grading, achievement, methodology, classroom management and relationships with teachers. Following in this line of thought it would seem that the resultants of teacher stress could directly or indirectly take its toll not only on the teacher but on the students as well.
Chapter II has presented a review of related literature in four subsections. The first subsection addressed itself to the psychological profile of burnout in professionals. The second subsection presented research concerned with the prevalence of teacher stress. This was followed by the third subsection which provided data on the effects of teacher stress on the health of teachers. Finally, the fourth subsection examined the possible effects of teacher stress on students.

This review suggested that there are certain generic psychological characteristics of the burnout victim, teachers are experiencing stress in their jobs, teachers are experiencing physiologically and psychologically adverse effects as a result of their jobs, and teacher stress may adversely effect students. Researchers and authors have expressed the need for further investigation into the effects of teachers' stress and its relationship, if any, to the health of teachers.
CHAPTER III

PROCEDURES

The primary purpose of this study was to determine if there was a significant difference between the self-reported somatic complaints and illnesses of secondary Catholic school teachers classified as burned out by the Maslach Burnout Inventory and secondary Catholic school teachers classified as not being burned out. Secondary Catholic school teachers were chosen for this study because of the relatively minimum amount of extraneous factors present in their jobs (such as desegregation, mandatory transfers, violence, and parent apathy) which might contribute to their stress and negative job attitudes. In May, 1980, teachers were surveyed to determine their status on the MBI and their somatic complaints and illnesses.

Population and Sample

The population is composed of secondary Catholic school teachers in the Diocese of Columbus. Their schools are located in the following cities: Columbus, Lancaster, Newark, and Zanesville. The list of schools was obtained from the department of Education of the Catholic Diocese of Columbus. There are 15 secondary schools in the Catholic Diocese of
Columbus. Nine schools are located in the Central Ohio geographical area and these became the population for this study.

A letter of permission to study the teachers was obtained from the Assistant Superintendent of Schools for the Diocese of Columbus (Appendix A). A request for permission to study the teachers was sent to each of the nine school principals (Appendix A). Eight school principals granted permission to the researcher to conduct a survey in their respective schools. These eight schools included 80 percent of the secondary Catholic school teachers in central Ohio and made up the population for this study.

Subjects

Permission to study the teachers was also obtained from The Ohio State University Behavioral and Social Sciences Human Subjects Review Committee (Appendix B). Participation by the teachers was voluntary. The teachers in this study had a teaching load of 75 percent or greater. Put another way, 75 percent of the teachers' assigned duties involved classroom instruction of students. Out of the 204 teachers in the eight school who were eligible to participate in the study, 184 responded. Three teachers' questionnaires were disqualified due to missing data. Thus the sample consisted of 181 teachers or 89 percent of the accessible population.
Instrumentation

The researcher constructed an instrument (TSCII) to measure the frequency and intensity of somatic complaints and also the presence or absence of illness in teachers. The review of the literature was used to identify several somatic complaints and illnesses associated with burnout and teacher stress. Subsequently all of those somatic complaints and illnesses believed to be associated with burnout were incorporated into the TSCII.

The review yielded the following somatic complaints as being associated with burnout: difficulty in breathing, insomnia, bowel abnormalities, nausea, headaches, tinnitus, dizziness, abdominal pain, fatigue, loss of appetite, nightmares, heart beating fast, loss of voice, acid in the stomach, tearful, tightening of the muscles, cold sweat, sensitivity to weather, gastrointestinal disturbances, loss of weight, hands trembling and blurred vision (Bloch, 1978; Needle, 1980; Hunter, 1977; Freudenberger, 1974; Maslach, 1978; Kyriacou and Sutcliffe, 1978; Caplan et al., 1975; Cooper and Marshall, 1976; Walsh, 1979). Several illnesses were associated with burnout and teacher stress. These are hypochondriasis, increased injuries, coronary heart disease, mental illnesses, alcoholism, drug addition, respiratory infections, ulcers, hypertension, colitis, kidney disease and gastrointestinal problems (Walsh, 1979; Freudenberger, 1974; Maslach, 1978; Hunter, 1977; Needle, 1980;
In their study of occupational stress, found significant relationships between occupational stress and only four illnesses. They were cardiovascular disease, gastrointestinal problems, respiratory infections and peptic ulcers. However since the Caplan et al. study did not include secondary school teachers and since there is insufficient data as to precisely which illnesses are and are not associated with burnout, the researcher incorporated into the instrument illnesses which did not yield significant correlations but were assumed to be related to occupational stress by Caplan et al. (Caplan et al., 1974).

Likert type scales identical to the MBI were employed so that respondents could indicate the frequency and intensity of their somatic complaints. A yes/no choice option was first utilized in the instrument to measure the presence or absence of an illness in subjects. However, in a field test this choice option proved to be non-discriminatory. It was revised to a three option format which included never, before I became a teacher, and after I became a teacher. The instrument titled, The Teacher Somatic Complaint and Illness Inventory (TSCII) measures 39 somatic complaints and 12 illnesses (Appendix C, questions 26 through 76).

Test for Reliability: Of the eight schools which participated in the study, one school was randomly selected
to test the reliability of the TSCII. The school chosen consisted of 38 teachers. The researcher utilized the reliability subprogram in the Statistical Package for the Social Sciences to obtain a Cronbach's Alpha for the TSCII (Hull and Nie, 1979). The Cronbach's Alpha yielded a reliability coefficient of .89.

**Maslach Burnout Inventory**

The MBI was the criterion for the classification of teachers into the two levels of the independent variable; burned out teachers and teachers who are not burned out (Appendix C, questions 1 through 25). Written permission to utilize the MBI in this study was obtained in February, 1980 (Appendix D).

The original form of the MBI consisted of 47 items utilizing a two scale format for intensity and frequency. The instrument was administered to a sample of 605 people from a variety of health service occupations including police, counselors, teachers, nurses, social workers, psychiatrists, psychologists, attorneys, physicians, and agency administrators (Maslach and Jackson, 1979). A set of selection criteria was utilized which reduced the items in the MBI from 47 to 25. The revised 25-item MBI was administered to another sample (n=420) of the subjects in the following occupations: nurses, teachers, social workers, probation officers, counselors, mental health workers, and agency administrators.
The MBI in its final format contains four subscales: emotional exhaustion (9 items), depersonalization (5 items), personal accomplishment (8 items), and personal involvement (3 items) (Appendix E). Classification of teachers into the burned out group was determined by calculating individual mean scores for each teacher on three subscales of the MBI. These scores were then compared to the MBI mean scores described in Appendix F. Teachers who scored above the mean on the emotional exhaustion and depersonalization MBI subscales and below the mean on the personal accomplishment MBI subscale were placed into the burned out teachers group (hereafter BOT). Teachers who failed to score above the mean on either or both of the emotional exhaustion and depersonalization MBI subscales and or below the mean on the personal accomplishment MBI subscale were placed into the teachers who are not burned out group (hereafter NBOT).

The MBI was revised so that the word recipient was replaced with the word student. This is consistent with the original directions and intentions of the instrument.

**Reliability of MBI**

The internal consistency was estimated for the MBI by Cronbach's Alpha, which yielded reliability coefficients of .76 (frequency) and .81 (intensity) for the 22-item scale (deleting the subscale for personal involvement) (Maslach, 1979). For subscales, the reliability coefficients are .89 (frequency) and .87 (intensity) for emotional exhaustion,
.77 (frequency) and .77 (intensity) for personal accomplishment, and .76 (frequency) and .75 (intensity) for depersonalization. The split half reliability coefficients for the entire scale is .74 (frequency) and .81 (intensity) (Maslach, 1979).

**Construct Validity:** Maslach states the validity of the MBI was demonstrated by several studies she conducted with several population subgroups including police, counselors, teachers, nurses, social workers, psychiatrists, psychologists, attorneys, physicians, and agency administrators (1979). Furthermore, Maslach states her data confirm hypotheses about the relationships between experienced burnout and various behavioral responses and feeling states. In all cases, the correlations between MBI scores and those other variables were in line with predictions (Maslach, 1979).

**Data Analysis**

To analyze the data, the researcher constructed a data definition deck and the appropriate task definition cards. This was accomplished with the cooperation of the Computer Consultation Service at The Ohio State University. The analysis is based upon the information which follows.

**Levels of Measurement:** The independent variable (teacher burnout status) represents a nominal level of measurement.
The dependent variable (frequency scores on the TSCII) for somatic complaints represents an ordinal level of measurement.

The dependent variable (intensity scores on TSCII) for somatic complaints represents an ordinal level of measurement.

The dependent variable (presence of illness on TSCII) represents a nominal level of measurement.

Selection of Test Statistics

The researcher was interested primarily in discovering significant inter-group differences in the dependent variables among the two groups which represent levels of the independent variable. The test statistics for this study were the t-distribution, discriminative analysis and the chi-square test of independence.

Data Collection Procedures

The researcher personally administered the MBI and TSCII to teachers at their monthly faculty meeting, in seven of the eight schools. In all cases the administration of the instrument was the first item of business at these faculty meetings. A stamped self-addressed envelope, a copy of the MBI and TSCII and directions (Appendix C) were placed in the mailboxes of teachers who were not present at their respective faculty meetings.
In the one school in which it was not possible to administer the instruments at a faculty meeting, copies of the MBI and TSCII and directions were placed in the mailboxes of those teachers eligible for this study. Teachers were asked to place the instruments in a slotted box in the school's central office.

The researcher visually scanned the instruments for stray marks and removed those instruments which were incomplete. The cleaned instruments were submitted to the Office of Testing and Evaluation for the purpose of transferring teacher responses to IBM punch cards for subsequent processing. The punched cards were then used for the statistical analysis.

At the conclusion of the study, a thank you letter was sent to those chief school administrators and the Assistant Superintendent who participated in this study (Appendix G).
ILLUSTRATION OF PROCEDURES

Figure 1
ILLUSTRATION OF DATA ANALYSIS
Figure 2
CHAPTER IV
PRESENTATION OF DATA

This chapter presents the data of the study. These data are presented and analyzed in the following order: (1) characteristics of the subjects; (2) relationships of descriptive data to teacher burnout; (3) data pertaining to the three hypotheses under investigation; and (4) a discussion of the data pertaining to the hypotheses.

Characteristics of Groups Revealed By The Maslach Burnout Inventory

Classification of the 181 teachers into one of the two groups (NBOT and BOT) was determined by calculating mean scores for each teacher on three subscales of the MBI and comparing them to the MBI mean scores in Appendix F. Teachers who scored above the mean on the emotional, exhaustion and depersonalization MBI subscales and below the mean on the personal accomplishment MBI subscales were placed in the BOT group. Teachers who failed to score above the mean on either or both of the emotional exhaustion and depersonalization MBI subscales and or below the mean on the personal accomplishment MBI subscale were placed in the NBOT group.
The mean scores for the emotional exhaustion, depersonalization, and personal accomplishment MBI subscales are 3.33, 2.13, and 5.02 respectively. Based upon the foregoing criterion for classification of teachers, 154 teachers were placed in the NBOT group and 27 teachers in the BOT group.

The mean scores for the 181 teachers on the emotional exhaustion, depersonalization, and personal accomplishment MBI subscales were 2.53, 1.59, and 4.36 respectively. In general, teachers in this study had lower mean scores on the three MBI subscales than those established through the research of Maslach (Appendix F). Thus the 27 teachers in the BOT group seem to be a conservative representation of the burned out teachers in the sample.

The 181 respondents who completed the MBI and the TSCII were asked to respond to a number of descriptive items. The purpose of these questions was to obtain additional information about the teachers which could be used to describe similarities and dissimilarities between the BOT group and the NBOT group.

The following descriptive data were included in the questionnaire:

1. Age.
2. Years Married to Current Spouse.
3. Number of Children.
4. Years Working at Present School: How many years have subjects been teaching at their present school?
5. **Years Teaching:** How many years have subjects been employed as a teacher?

6. **Hours Per Week Spent in Direct Contact With Students:** How many hours per week do subjects spend in direct contact with students?

7. **Marital Status.**

8. **Degree:** What is the highest degree the subjects have earned?

9. **Teacher Status:** Are they a lay or clerical teacher?

10. **Hours Worked Per Week:** How many hours do they work per week as a teacher?

11. **Sex.**

12. **Race.**

13. **Religion.**

14. **Percentage of Time Spent in Teaching Duties:** What percentage of teachers' time is spent in direct contact with students? What percentage of teachers' time is spent in direct contact with other staff? What percentage of teachers' time is spent in their professional preparation? What percentage of teachers' time is spent in administrative duties? What percentage of teachers' time is spent in other tasks related to their teaching jobs.

Table 1 indicates that for the item *Age*, the BOT group and the NBOT group were similar in both their mean ages and their range of ages. It would seem that the BOT group was
<table>
<thead>
<tr>
<th></th>
<th><strong>AGE</strong></th>
<th></th>
<th><strong>YEARS MARRIED TO CURRENT SPOUSE</strong></th>
<th></th>
<th><strong>NUMBER OF CHILDREN</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>X</td>
<td>SD</td>
<td>MIN.</td>
<td>MAX.</td>
</tr>
<tr>
<td>NBOT**</td>
<td>151*</td>
<td>34.8</td>
<td>11.2</td>
<td>22</td>
<td>67</td>
</tr>
<tr>
<td>BOT**</td>
<td>27</td>
<td>31.7</td>
<td>9.5</td>
<td>23</td>
<td>60</td>
</tr>
</tbody>
</table>

*Data missing (NBOT N=154, BOT N=27).

**Tables throughout the text will list the groups according to the following abbreviations: NBOT (teachers who are not burned out) and BOT (teachers who are burned out).
slightly younger than the NBOT group. For the items "years married to current spouse," the groups were similar in both their mean years and their range of years. The "number of children" item demonstrated that both groups were quite similar. The groups differed slightly on the item "years working at present school." The NBOT group tended to have more longevity at their present school (a mean of 5.0 years, and a range of one to thirty years) than did the BOT group (a mean of 3.9 and a range of one to fourteen). The groups differed on the number of years they had been teaching. The BCT group had slightly less teaching experience (mean of 8.0 years) than did the NBOT group (mean of 10.6 years). The last item in Table I indicated that the number of hours spent in direct contact with students by the NBOT group (38.8 hours) and the BOT group (39.2 hours) were quite similar. However, the difference on the range for the groups on this item is worth noting (NBOT group 20 to 44, BOT group 20 to 70).

The data presented in Table I indicates that the groups were basically similar in age, years married to their spouse, number of children, and hours worked in direct contact with students. The data also suggest that the groups slightly differed in the number of years they were at their present school and the number of years they had been teaching.

Table 2 indicates that for the item "marital status," slightly more subjects in the NBOT group (52 percent) were single than those in the BOT group (44 percent). Relatively, the same percentages of subjects in both groups were divorced
TABLE 2
Summary of Group Descriptive Data By Teacher Group

<table>
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<tr>
<th></th>
<th>NBOT N=154</th>
<th>BOT N=27</th>
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<tr>
<td><strong>Marital Status</strong></td>
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<td></td>
</tr>
<tr>
<td>single</td>
<td>52.0</td>
<td>44.4</td>
</tr>
<tr>
<td>married</td>
<td>43.5</td>
<td>51.9</td>
</tr>
<tr>
<td>divorced</td>
<td>3.3</td>
<td>3.7</td>
</tr>
<tr>
<td>widowed</td>
<td>.6</td>
<td>00.0</td>
</tr>
<tr>
<td>missing</td>
<td>.6</td>
<td>00.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

| **Number of Children**   |          |          |
| none                     | 68.2      | 63.0     |
| one                      | 11.7      | 18.5     |
| two                      | 13.6      | 11.1     |
| three                    | 4.6       | 7.4      |
| four                     | 1.3       | 00.0     |
| missing                  | .6        | 00.0     |
| **Total**                | 100.0     | 100.0    |

<p>| <strong>Degree</strong>               |            |          |
| BA/BS                    | 61.0       | 66.7     |
| MA/MS                    | 34.4       | 33.3     |
| other                    | 2.6        | 00.0     |
| missing                  | 2.0        | 00.0     |
| <strong>Total</strong>                | 100.0      | 100.0    |</p>
<table>
<thead>
<tr>
<th>Teacher Status</th>
<th>NBOT N=154</th>
<th>BOT N=27</th>
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<tr>
<td>lay</td>
<td>79.2</td>
<td>88.9</td>
</tr>
<tr>
<td>clergy</td>
<td>20.8</td>
<td>11.1</td>
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<table>
<thead>
<tr>
<th>Hours Worked Per Week</th>
<th>NBOT N=154</th>
<th>BOT N=27</th>
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<tr>
<td>70 or more</td>
<td>22.9</td>
<td>7.4</td>
</tr>
<tr>
<td>60-69</td>
<td>26.1</td>
<td>22.2</td>
</tr>
<tr>
<td>50-59</td>
<td>33.3</td>
<td>40.7</td>
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<td>40-49</td>
<td>14.4</td>
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<td>30-39</td>
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<td>3.7</td>
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<td>00.0</td>
</tr>
<tr>
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</tr>
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<table>
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<tr>
<th>Sex</th>
<th>NBOT N=154</th>
<th>BOT N=27</th>
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<tbody>
<tr>
<td>male</td>
<td>46.1</td>
<td>44.4</td>
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<tr>
<td>female</td>
<td>53.9</td>
<td>55.6</td>
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<tr>
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TABLE 2 (continued)

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<tr>
<th>Race</th>
<th>NBOT N=154</th>
<th>BOT N=27</th>
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<tbody>
<tr>
<td>Asian</td>
<td>0.6</td>
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<tr>
<td>Black</td>
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<td>0.0</td>
</tr>
<tr>
<td>Latino/American</td>
<td>1.3</td>
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</tr>
<tr>
<td>Native American</td>
<td>2.0</td>
<td>0.0</td>
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<tr>
<td>White</td>
<td>93.6</td>
<td>96.3</td>
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<tr>
<td>other</td>
<td>1.3</td>
<td>3.7</td>
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<tr>
<td>missing</td>
<td>0.6</td>
<td>0.0</td>
</tr>
<tr>
<td>Total</td>
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<td>100.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Religion</th>
<th>NBOT N=154</th>
<th>BOT N=27</th>
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</thead>
<tbody>
<tr>
<td>Protestant</td>
<td>11.1</td>
<td>7.4</td>
</tr>
<tr>
<td>Roman Catholic</td>
<td>81.2</td>
<td>70.4</td>
</tr>
<tr>
<td>Jewish</td>
<td>1.3</td>
<td>0.0</td>
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<tr>
<td>other</td>
<td>3.2</td>
<td>3.7</td>
</tr>
<tr>
<td>no religion</td>
<td>3.2</td>
<td>14.8</td>
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<tr>
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<td>0.0</td>
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TABLE 2 (continued)

<table>
<thead>
<tr>
<th>Percent of Teachers' Time Spent</th>
<th>NBOT N=154</th>
<th>BOT N=27</th>
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<tbody>
<tr>
<td>in direct contact with students</td>
<td>69.8</td>
<td>71.4</td>
</tr>
<tr>
<td>in direct contact with staff</td>
<td>11.2</td>
<td>9.4</td>
</tr>
<tr>
<td>in professional training</td>
<td>4.1</td>
<td>2.6</td>
</tr>
<tr>
<td>in administrative duties</td>
<td>6.7</td>
<td>4.2</td>
</tr>
<tr>
<td>other</td>
<td>8.2</td>
<td>11.7</td>
</tr>
<tr>
<td>missing</td>
<td>0.0</td>
<td>0.7</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>
(NBOT 3 percent, BOT 4 percent). The one subject that was
widowed was in the NBOT group.

Taking another look at the item "number of children,"
Table 2 indicates that both groups were similar in this item
once again. Sixty-eight percent of the NBOT group had no
children while 63 percent of the BOT's group had no children.
Twelve percent of the NBOT group had one child while 19 per­
cent of the BOT's group had one child. Eleven percent of
the BOT group had two children while 14 percent of the NBOT
group had two children. Five percent of the NBOT group had
three children while 7 percent of the BOT's group had three
children. Only one subject had four children and he was in
the NBOT group.

For the item "degree," both groups were quite similar.
In the NBOT group 61 percent of the subjects had a BA or BS
and 34 percent of the subjects had a MA or MS. Three percent
of the subjects in the NBOT group had another type of degree
and the data was missing for 2 percent of the subjects in the
NBOT group. Sixty-seven percent of the BOT group had a BA
or BS while 33 percent had a MA or MS.

Table 2 indicates that for the item "teacher status,"
there were more lay teachers in the BOT group than in the
NBOT group. Seventy-nine percent of the subjects were lay
teachers in the NBOT group while 21 percent of them were
clerical teachers. Eighty-nine percent of the subjects
were lay teachers in the BOT group while 11 percent of them
were clerical teachers.
There were some group differences for the item "hours worked per week." Twenty-three percent of the NBOT group reported working 70 or more hours per week while only 7 percent of the BOT group reported working 70 or more hours. Twenty-six percent of the NBOT group reported working between 60 and 69 hours per week while 22 percent of the BOT group reported the same. Thirty-three percent of the NBOT group and 41 percent of the BOT group reported working 50-59 hours per week. Fourteen percent of the NBOT group and 26 percent of the BOT group reported working 40-49 hours per week. Three percent of the NBOT and 4 percent of the BOT group reported working 30-39 hours per week.

For the item "sex," both groups were similar. The NBOT group was made up of 46 percent males and 54 percent females. The BOT group was made up of 44 percent males and 56 percent females.

For the item "race," both groups were basically similar. Ninety-four percent of the NBOT group and 96 percent of the BOT group were white.

There were some differences between the groups for the item "religion." Eleven percent of the NBOT group and 7 percent of the BOT group were protestant. Eighty-one percent of the NBOT group and 70 percent of the BOT group were Roman Catholic. One percent of the NBOT group were Jewish. Three percent of the NBOT group and 4 percent of the BOT group reported being of other religions. Fifteen percent of the BOT group reported no religion while 3 percent of the NBOT
group reported no religion. There was missing data for 4 percent of the BOT group.

Table 2 indicates that for the item "percentage of time spent," the NBOT group spent 70 percent of their time in direct contact with students while the BOT group spent 71 percent of their time in direct contact with students. The NBOT group spent 11 percent of their time in direct contact with other staff members while the BOT group spent 9 percent of their time in direct contact with other staff. Four percent of the NBOT group's time was spent in professional training while 3 percent of the BOT group's time was spent in professional training. The NBOT group reported spending 7 percent of their time in administrative duties while the BOT group reported spending 4 percent of their time in administrative duties. For the sub-heading other, the NBOT group and BOT group reported 8 percent and 12 percent respectively. One percent of the BOT group had missing data.

Overall, 15 percent of the subjects were in the BOT group and 85 percent of the subjects were in the NBOT group.

Table 3 compared the two groups on descriptive data. One serious limitation to Table 3, however, is that there were only three clerical subjects in the BOT group. With this in mind, Table 3 indicates that for "age," "sex," "years married," "how religious," "years teaching," "years at present school" and "hours in direct contact with students," lay subjects were similar in both the BOT and NBOT groups.
### TABLE 3
Summary of Group Descriptive Data by Teacher Status

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>AGE</th>
<th>SEX</th>
<th>YEARS MARRIED</th>
<th>YEARS TEACHING</th>
<th>YEARS AT PRESENT SCHOOL</th>
<th>HOURS IN DIRECT CONTACT WITH STUDENTS</th>
<th>HOW RELIGIOUS*</th>
</tr>
</thead>
<tbody>
<tr>
<td>NBOT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LAY</td>
<td>122</td>
<td>32.0</td>
<td>53%</td>
<td>47%</td>
<td>5.8</td>
<td>7.4</td>
<td>4.8</td>
<td>40.4</td>
</tr>
<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CLERGICAL</td>
<td>32</td>
<td>45.6</td>
<td>18%</td>
<td>82%</td>
<td>0.0</td>
<td>22.7</td>
<td>5.9</td>
<td>35.1</td>
</tr>
<tr>
<td>BOT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LAY</td>
<td>24</td>
<td>30.2</td>
<td>50%</td>
<td>50%</td>
<td>5.1</td>
<td>6.4</td>
<td>4.2</td>
<td>39.8</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CLERGICAL</td>
<td>3</td>
<td>44.0</td>
<td>0%</td>
<td>100%</td>
<td>0.0</td>
<td>21.0</td>
<td>1.6</td>
<td>32.5</td>
</tr>
</tbody>
</table>

*The question was asked subjects, How religious do you consider yourself to be on a scale of one to seven, where one is very religious and seven in not at all religious.
Clergical subjects in both groups were similar on all variables except "sex" and "years at present school." The difference in sex is probably due to the fact that only six male clerical subjects were in the study. However, all three BOT clerical subjects had not been at their present schools for more than two years.

Relationship of Descriptive Data To Teacher Burnout

There are several observations that can be made from the inter and intra group characteristics. The ages of teachers in the two groups were similar which suggests burned out teachers were not just first year teachers or career teachers. However, in all cases, the burned out subjects were younger based on their mean age than were the teachers in the NBOT group. This would be in line with predictions that dissatisfied teachers change positions and/or careers (Kyriacou and Sutcliffe, 1979). The group means for "years married to current spouse" and "number of children" were quite similar also. Although the population is relatively small, this finding would be in conflict with reports that burnout causes marital disorder (Maslach and Pines, 1977). Perhaps the opposite is true. It could be that marital disorders are in some way responsible for accelerating or contributing to the manifestation of burnout in teachers. BOT subjects tend to be at their present school for a shorter period of time than subjects in the teachers' group. Since there were no mandatory transfers of subjects within their school
district, it would once again seem burned out subjects were more likely to change schools or careers.

The item "years teaching" was quite similar for lay and clerical subjects in both groups. This finding is in conflict with some reports that experienced teachers are more prone to burnout (Bardo, 1979; Scrivens, 1979). The data in this study implies that teaching experience may play little or no role in the burnout scenario.

Subjects in both groups reported quite similarly the number of hours they spent in direct contact with students. Once again this finding would not be expected based upon the review of literature (Maslach & Pines, 1977; Freudenberger, 1975). Studies of child care workers suggested that as direct contact with students increases so does teacher stress and/or burnout. Whether or not teachers in the BOT group conscientiously or unconscientiously reduced the time they spend with students is not known. However, we do know that the BOT group reported working less hours per week than teachers in the NBOT group. Forty-nine percent of the NBOT group was working 60 hours or more while only 30 percent of the BOT group was working 60 hours or more. Perhaps by reducing their hours, teachers attempted to cope with burnout.

There were more married teachers in the BOT group than teachers in the NBOT group. Part of this dissimilarity is probably due to the fact that clerical teachers do not marry and they represent a larger portion of the NBOT group. The finding that proportionally there were less burned out
clergical teachers than lay teachers at first suggests that the clergical teachers were less prone to burnout among their ranks. Upon reflection, this finding fosters several additional lines of thought. It might be that because of the clergical teachers' background, they were less likely to report negative feelings towards their students and jobs than non-clergical teachers. This would then suggest a teacher bias. On the other hand, it might be that because of the clergical teachers' philosophical and psychological background, they were better equipped than lay teachers to deal with the threat of burnout.

Some authors have suggested females are more prone to teacher stress and burnout (Riccio, 1978). This is not the case with the subjects in this study. It seems males were just as vulnerable to burnout as females. This finding becomes even more apparent when we examine the data presented in Table 3 concerning lay teachers.

The racial and religious background of both groups were for the most part similar. Although it is interesting to note that more than four times as many burned out teachers reported having no religion than teachers who were not burned out. This could once again be partially due to the portion of clergical teachers in the groups. However, Table 4 demonstrates there is exactly the same distance between lay and clergical teachers on this question for both groups. Once again this seems to suggest teachers philosophical background might play a role in burnout.
The item "percentage of teachers' time spent" (Table 2) indicates that the groups were dividing their teaching responsibilities in a similar manner. This suggests that the portion of burned out teachers' time spent in various teaching duties is not all that dissimilar from non burned out teachers.

Thus the descriptive data indicates that the NBOT group and the BOT group were more similar than dissimilar with the possible exception of the item "hours worked per week." Less clerical teachers proportionately were in the BOT group. Twenty-one percent of the lay teachers were in the BOT group while 11 percent of the clerical teachers were in the BOT group. At least for these teachers, one cannot conclude that burnout is just a matter of time, whereas time is used as an acronym for years of teaching or chronological age. In addition, one cannot conclude that marital conflict is in some way related to burnout for these teachers. When clerical teachers are removed from the analysis one finds the same percentage of teachers in the BOT group (4.1 percent) divorced as teachers in the NBOT group (4.1 percent). Finally, the number of hours teachers spent in direct contact with students was not a discriminating variable between the two groups.

Data Pertaining to the Hypotheses

There null hypotheses formulated for this study were:
1. For the variable "frequency of somatic complaints (39 items)," the mean of the two groups of teachers will be equivalent.

2. For the variable "intensity of somatic complaints (39 items)," the mean of the two groups of teachers will be equivalent.

3. For the variable "presence of illness," the frequencies of the two groups of teachers will be equivalent.

The data which follow are presented according to each of the three null hypotheses. A discussion pertaining to the hypotheses follows the data.

**Frequency of Somatic Complaints (Hypothesis 1)**

The somatic complaints on the TSCII were divided into two scales. An interpretation of the frequency scale (how often) follows. Subjects were asked to indicate the number of times, if any, in the last year they had experienced 39 different somatic complaints (Appendix C) on a seven point scale. The following values were assigned to each point:

0 = never

1 = a few times a year

2 = monthly

3 = a few times a month

4 = weekly

5 = a few times a week

6 = daily
Based upon a t-test and a discriminant analysis of 39 somatic complaints, the null hypothesis was rejected for seven of the somatic complaints. They were: difficulty breathing, nausea, a ringing sensation in the ear, abdominal pain, heart beating too fast, a loss of voice, and acid in the stomach. A presentation of the data for these hypotheses follows.

Table 4 indicates those questions the group differed significantly on utilizing a t-test. For question 26, "How often in the last year did you experience difficulty breathing?" the NBOT group had a mean of 0.32 while the BOT group had a mean of 1.03. The computed t-value indicated that the two groups differ significantly on the frequency in which difficulty with breathing is experienced. Table 5 indicates 83 percent of the NBOT group did not experience difficulty breathing in the last year compared to 59 percent of the BOT group. The frequency rate selected most often by burned out teachers who had experienced difficulty breathing was monthly.

For question 29, "How often in the last year did you experience nausea?" the NBOT group had a mean of 0.63 while the BOT group had a mean of 1.41. The computed t-value indicated that the two groups differ significantly on the frequency in which nausea is experienced. Table 5 indicates 62 percent of the NBOT group did not experience nausea in the last year compared to 37 percent of the BOT group. The
### TABLE 4

Comparison of Groups on Frequency of Experiencing Somatic Complaints

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>Mean*</th>
<th>STD DEV</th>
<th>t</th>
<th>Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Difficulty Breathing</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NBOT</td>
<td>154</td>
<td>0.3246</td>
<td>0.9625</td>
<td>-2.4533</td>
<td>0.0202</td>
</tr>
<tr>
<td>BOT</td>
<td>27</td>
<td>1.0370</td>
<td>1.4539</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Nausea</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NBOT</td>
<td>154</td>
<td>0.6298</td>
<td>1.0537</td>
<td>-2.7633</td>
<td>0.0095</td>
</tr>
<tr>
<td>BOT</td>
<td>27</td>
<td>1.4074</td>
<td>1.3939</td>
<td></td>
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</tr>
<tr>
<td><strong>A Ringing Sensation in the Ear</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NBOT</td>
<td>154</td>
<td>0.4415</td>
<td>1.1432</td>
<td>-2.9593</td>
<td>0.0059</td>
</tr>
<tr>
<td>BOT</td>
<td>27</td>
<td>1.4444</td>
<td>1.6946</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Abdominal Pain</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NBOT</td>
<td>153</td>
<td>0.7516</td>
<td>1.2046</td>
<td>-3.3643</td>
<td>0.0021</td>
</tr>
<tr>
<td>BOT</td>
<td>27</td>
<td>2.0000</td>
<td>1.8605</td>
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<td></td>
</tr>
<tr>
<td><strong>Heart Beating Too Fast</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NBOT</td>
<td>152</td>
<td>0.5592</td>
<td>1.0468</td>
<td>-2.6528</td>
<td>0.0128</td>
</tr>
<tr>
<td>BOT</td>
<td>27</td>
<td>1.5185</td>
<td>1.8265</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>A Loss of Voice</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NBOT</td>
<td>154</td>
<td>0.6428</td>
<td>1.0332</td>
<td>-2.3844</td>
<td>0.0234</td>
</tr>
<tr>
<td>BOT</td>
<td>27</td>
<td>1.3333</td>
<td>1.4411</td>
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</tr>
<tr>
<td><strong>Acid in the Stomach</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NBOT</td>
<td>154</td>
<td>0.9545</td>
<td>1.3783</td>
<td>-3.1063</td>
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<tr>
<td>BOT</td>
<td>27</td>
<td>2.2592</td>
<td>2.1048</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Based upon the seven point scale described on page 60.
TABLE 5
Group Percentages for the Frequency Scale of the TSCII

<table>
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<tr>
<th></th>
<th>n</th>
<th>Never</th>
<th>A Few Times A Year</th>
<th>Monthly</th>
<th>A Few Times A Month</th>
<th>Weekly</th>
<th>A Few Times A Week</th>
<th>Daily</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Difficulty</strong></td>
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<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breathing</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NBOT</td>
<td>154</td>
<td>83.117</td>
<td>11.688</td>
<td>0.649</td>
<td>1.299</td>
<td>1.299</td>
<td>1.299</td>
<td>0.649</td>
<td>100.0%</td>
</tr>
<tr>
<td>BOT</td>
<td>27</td>
<td>59.259</td>
<td>3.704</td>
<td>22.222</td>
<td>7.407</td>
<td>3.704</td>
<td>3.704</td>
<td>0.000</td>
<td>100.0%</td>
</tr>
<tr>
<td><strong>Nausea</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NBOT</td>
<td>154</td>
<td>62.338</td>
<td>24.026</td>
<td>6.494</td>
<td>4.545</td>
<td>0.649</td>
<td>1.948</td>
<td>0.000</td>
<td>100.0%</td>
</tr>
<tr>
<td>BOT</td>
<td>27</td>
<td>37.037</td>
<td>18.519</td>
<td>22.222</td>
<td>11.111</td>
<td>11.111</td>
<td>0.000</td>
<td>0.000</td>
<td>100.0%</td>
</tr>
<tr>
<td><strong>A Ringing Sensation in the Ear</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NBOT</td>
<td>154</td>
<td>77.922</td>
<td>14.286</td>
<td>1.948</td>
<td>2.597</td>
<td>0.649</td>
<td>0.000</td>
<td>2.597</td>
<td>100.0%</td>
</tr>
<tr>
<td>BOT</td>
<td>27</td>
<td>40.741</td>
<td>22.222</td>
<td>14.815</td>
<td>7.407</td>
<td>3.704</td>
<td>11.111</td>
<td>0.000</td>
<td>100.0%</td>
</tr>
<tr>
<td><strong>Abdominal Pain</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NBOT</td>
<td>153</td>
<td>61.438</td>
<td>18.954</td>
<td>8.497</td>
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<td>1.307</td>
<td>0.654</td>
<td>100.0%</td>
</tr>
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<td>33.333</td>
<td>14.815</td>
<td>11.111</td>
<td>11.111</td>
<td>18.519</td>
<td>0.000</td>
<td>0.000</td>
<td>100.0%</td>
</tr>
<tr>
<td><strong>Heart Beating Too Fast</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>NBOT</td>
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<td>67.105</td>
<td>21.711</td>
<td>3.947</td>
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<td>3.704</td>
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<td>14.815</td>
<td>7.407</td>
<td>0.000</td>
<td>100.0%</td>
</tr>
<tr>
<td><strong>A Loss of Voice</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NBOT</td>
<td>154</td>
<td>59.091</td>
<td>27.922</td>
<td>7.792</td>
<td>1.948</td>
<td>1.948</td>
<td>0.649</td>
<td>0.649</td>
<td>100.0%</td>
</tr>
<tr>
<td>BOT</td>
<td>27</td>
<td>37.037</td>
<td>25.926</td>
<td>18.519</td>
<td>7.407</td>
<td>7.407</td>
<td>3.704</td>
<td>0.000</td>
<td>100.0%</td>
</tr>
<tr>
<td><strong>Acid in the Stomach</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NBOT</td>
<td>154</td>
<td>57.143</td>
<td>14.935</td>
<td>12.987</td>
<td>9.740</td>
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<td>3.247</td>
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<tr>
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<td>37.037</td>
<td>7.407</td>
<td>3.704</td>
<td>22.222</td>
<td>7.407</td>
<td>18.519</td>
<td>3.704</td>
<td>100.0%</td>
</tr>
</tbody>
</table>
frequency rate selected most often by burned out teachers who had experienced nausea was monthly.

For question 31, "How often in the last year did you experience a ringing sensation in your ear?" the NBOT group had a mean of 0.44 while the BOT group had a mean of 1.44. The computed t-value indicated that the two groups differ significantly on the frequency in which a ringing sensation in the ear is experienced. Table 5 indicates 78 percent of the NBOT group did not experience a ringing sensation in their ear in the last year compared to 41 percent of the BOT group. The frequency rate selected most often by burned out teachers was a few times a year. Furthermore, 2 percent of the teachers in the NBOT group reported experiencing a ringing sensation in their ear monthly while 15 percent of the teachers in the BOT group reported the same.

For questions 33, "How often in the last year did you experience abdominal pain (pain in the stomach or gut)?" the NBOT group had a mean of 0.75 while the BOT group had a mean of 2.00. The computed t-value indicated that the two groups differ significantly on the frequency in which abdominal pain is experienced. Table 5 indicates 61 percent of the NBOT group did not experience abdominal pain in the last year compared to 33 percent of the BOT group. The frequency rate selected most often by burned out teachers who had experienced abdominal pain was weekly.

For question 36, "How often in the last year did you experience your heart beating too fast?" the NBOT group had
a mean of 0.56 where the BOT group had a mean of 1.52. The computed t-value indicated that the two groups differ significantly on the frequency in which their hearts beating too fast is experienced. Table 5 indicates 67 percent of the NBOT group did not experience their hearts beating too fast in the last year compared to 48 percent of the BOT group. The frequency rates most selected by burned out teachers who had experienced their hearts beating too fast was a few times a year and weekly. However, the frequency rate in which teachers in the BOT group differed the most from teachers in the NBOT group was weekly.

For question 37, "How often in the last year did you experience a loss of your voice?" the NBOT group had a mean of 0.64 while the BOT group had a mean of 1.33. The computed t-value indicated that the two groups differ significantly on the frequency in which a loss of voice is experienced. Table 5 indicates 59 percent of the NBOT group did not experience a loss of their voices compared to 37 percent of the BOT group. The frequency rate selected most often by burned out teachers who had experienced a loss of their voices was a few times a year. However, the frequency rate in which teachers in the BOT group differed the most from teachers in the NBOT group was monthly.

For question 38, "How often in the last year did you experience acid in your stomach?" the NBOT group had a mean of 0.95 while the BOT group had a mean of 2.26. The computed t-value indicated that the two groups differ significantly on
the frequency in which acid in the stomach is experienced. Table 5 indicates 57 percent of the NBOT group did not experience acid in their stomachs in the last year compared to 37 percent of the BOT group. The frequency rate selected most by burned out teachers who had was a few times a month. However, the frequency rate in which teachers in the BOT group differed the most from teachers in the NBOT group was a few times a week. There were no other significant differences between the two groups on the remaining somatic complaints concerning their frequency scores.

In the discriminant analysis for the TSCII (which excluded questions 65 through 76) the canonical correlation was 0.7695325. Hence, 59 percent of the proportion of the variance in the discriminant function was explained by the groups. The level of significance for the discriminating function was 0.003. The percent of grouped cases correctly classified was 94 percent. Table 7 indicates the predicted group membership percentages.

The discriminant analysis stepwise variable selection computed 34 steps and yielded a canonical correlation of 0.7024454. Hence 49 percent of the proportion of the variance in the discriminant function was explained by the groups when utilizing those computer selected variables listed in Table 8. The level of significance for the discriminating function in the stepwise variable selection computation was significant beyond 0.0001 level. The percent of grouped cases correctly
classified was 91 percent. Table 7 indicates the predicted group percentages.

Since the somatic complaints in questions 26, 29, 31, 33, 36, 37 and 38 (for their frequency scales) had significantly different t-values and since these same somatic complaint questions appeared in the stepwise variable selection model (Table 8) which had a canonical correlation of 0.7024454 and a level of significance beyond the 0.0001 level and since the stepwise variable model correctly classified 91 percent of the grouped cases as compared to the TSCII (excluding questions 65 through 76) which correctly classified 94 percent of the grouped cases, the null hypotheses were rejected for these somatic complaints. The null hypotheses were accepted for the remaining somatic complaints which were: difficulty in falling asleep at night, bowel difficulties, headaches, dizziness, a loss of appetite, nightmares, tearfulness, tightening of muscles, cold sweat, sensitivity to weather, weight loss, trembling hands, blurred vision, back pain, arthritis, bursitis, cold or flu, sore throat, sinusitis, asthma allergic reaction to food, allergic reaction to something in the air, hemorrhoids, gout, injury from a non-occupational cause, injury from an occupational cause, pimples, eczema, hives, warts, sty and psoriasis.
### TABLE 6

Discriminant Analysis Classification Results of Groups

<table>
<thead>
<tr>
<th>Actual Group</th>
<th>No. of Cases</th>
<th>Predicted Group</th>
<th>Membership</th>
</tr>
</thead>
<tbody>
<tr>
<td>NBOT</td>
<td>145</td>
<td>139</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>95.9%</td>
<td>4.1%</td>
</tr>
<tr>
<td>BOT</td>
<td>26</td>
<td>4</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15.4%</td>
<td>84.6%</td>
</tr>
</tbody>
</table>

Percent of "Grouped" Cases Correctly Classified: 94.15%

### TABLE 7

Discriminant Analysis Classification Results of Groups (Stepwise Variable Selection)

<table>
<thead>
<tr>
<th>Actual Group</th>
<th>No. of Cases</th>
<th>Predicted Group</th>
<th>Membership</th>
</tr>
</thead>
<tbody>
<tr>
<td>NBOT</td>
<td>147</td>
<td>137</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>93.2%</td>
<td>6.8%</td>
</tr>
<tr>
<td>BOT</td>
<td>26</td>
<td>5</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td></td>
<td>19.2%</td>
<td>80.8%</td>
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</table>

Percent of "Grouped" Cases Correctly Classified: 91.33%
<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
<th>Action</th>
<th>Entered</th>
<th>Removed</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Abdominal Pain</td>
<td></td>
<td>F33*</td>
<td></td>
<td>0.0000</td>
</tr>
<tr>
<td>2</td>
<td>Difficulty Breathing</td>
<td></td>
<td>F26</td>
<td></td>
<td>0.0018</td>
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<tr>
<td>3</td>
<td>Eczema</td>
<td></td>
<td>F60</td>
<td></td>
<td>0.0132</td>
</tr>
<tr>
<td>4</td>
<td>Abdominal Pain</td>
<td></td>
<td>F33**</td>
<td></td>
<td>0.0171</td>
</tr>
<tr>
<td>5</td>
<td>Hives</td>
<td></td>
<td>F61</td>
<td></td>
<td>0.0215</td>
</tr>
<tr>
<td>6</td>
<td>Tinnitus</td>
<td></td>
<td>F31</td>
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<td>0.0094</td>
</tr>
<tr>
<td>7</td>
<td>Injury/Occupational</td>
<td></td>
<td>I58</td>
<td></td>
<td>0.0087</td>
</tr>
<tr>
<td>8</td>
<td>Bowel Difficulties</td>
<td></td>
<td>I28</td>
<td></td>
<td>0.0348</td>
</tr>
<tr>
<td>9</td>
<td>Tearfulness</td>
<td></td>
<td>I39</td>
<td></td>
<td>0.0105</td>
</tr>
<tr>
<td>10</td>
<td>Loss of Voice</td>
<td></td>
<td>F37</td>
<td></td>
<td>0.0286</td>
</tr>
<tr>
<td>11</td>
<td>Injury/Non-Occupational</td>
<td></td>
<td>F57</td>
<td></td>
<td>0.0396</td>
</tr>
<tr>
<td>12</td>
<td>Hives</td>
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<td>I61</td>
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<td>0.0414</td>
</tr>
<tr>
<td>13</td>
<td></td>
<td></td>
<td>F61</td>
<td></td>
<td>0.3005</td>
</tr>
<tr>
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<td>Dizziness</td>
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<td>I32</td>
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<td>0.0390</td>
</tr>
<tr>
<td>15</td>
<td>Difficulty Falling Asleep</td>
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<td>F27</td>
<td></td>
<td>0.0159</td>
</tr>
<tr>
<td>16</td>
<td>Difficulty Falling Asleep</td>
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<td>I27</td>
<td></td>
<td>0.0039</td>
</tr>
<tr>
<td>17</td>
<td>Warts</td>
<td></td>
<td>F62</td>
<td></td>
<td>0.0125</td>
</tr>
<tr>
<td>18</td>
<td>Hemorrhoids</td>
<td></td>
<td>I55</td>
<td></td>
<td>0.0113</td>
</tr>
<tr>
<td>19</td>
<td>Allergic Reaction/Air</td>
<td></td>
<td>F54</td>
<td></td>
<td>0.0256</td>
</tr>
<tr>
<td>20</td>
<td>Acid in the Stomach</td>
<td></td>
<td>F38</td>
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<tr>
<td>21</td>
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<td>I29</td>
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</tr>
<tr>
<td>22</td>
<td>Nausea</td>
<td></td>
<td>F29</td>
<td></td>
<td>0.0674</td>
</tr>
<tr>
<td>23</td>
<td>Hemorrhoids</td>
<td></td>
<td>F55</td>
<td></td>
<td>0.0803</td>
</tr>
<tr>
<td>24</td>
<td>Sensitivity to Weather</td>
<td></td>
<td>F42</td>
<td></td>
<td>0.0854</td>
</tr>
<tr>
<td>25</td>
<td>Nightmares</td>
<td></td>
<td>F35</td>
<td></td>
<td>0.0831</td>
</tr>
<tr>
<td>26</td>
<td>Headaches</td>
<td></td>
<td>I30</td>
<td></td>
<td>0.1117</td>
</tr>
<tr>
<td>27</td>
<td>Heart Beating Fast</td>
<td></td>
<td>I36</td>
<td></td>
<td>0.0884</td>
</tr>
<tr>
<td>28</td>
<td>Heart Beating Fast</td>
<td></td>
<td>F36</td>
<td></td>
<td>0.0172</td>
</tr>
<tr>
<td>29</td>
<td></td>
<td></td>
<td>I30</td>
<td></td>
<td>0.1705</td>
</tr>
<tr>
<td>30</td>
<td>Injury/Non Occupational</td>
<td></td>
<td>I57</td>
<td></td>
<td>0.0405</td>
</tr>
<tr>
<td>31</td>
<td>Allergic Reaction/Air</td>
<td></td>
<td>I54</td>
<td></td>
<td>0.0851</td>
</tr>
<tr>
<td>32</td>
<td>Cold or Flu</td>
<td></td>
<td>F49</td>
<td></td>
<td>0.1037</td>
</tr>
<tr>
<td>33</td>
<td>Back Pain</td>
<td></td>
<td>F46</td>
<td></td>
<td>0.0828</td>
</tr>
<tr>
<td>34</td>
<td>Pimples</td>
<td></td>
<td>F59</td>
<td></td>
<td>0.0926</td>
</tr>
</tbody>
</table>

*F33 - Frequency Scale for Question Number 33 (TSCII)

**I33 - Intensity Scale for Question Number 33 (TSCII)
Intensity of Somatic Complaints (Hypothesis 2)

The somatic complaints on the TSCII are divided into two scales. An interpretation of the Intensity Scale (how strong) follows. Subjects were asked to indicate how strong if at all, they had experienced 39 different somatic complaints (Appendix C) on an eight point scale. Figure 3 illustrates the values that were assigned to the points.

Based upon a t-test and a discriminant analysis of 39 somatic complaints the null hypothesis was rejected for the somatic complaint nausea. A presentation of the data for the hypotheses follows.

Table 9 indicates those questions the groups differed significantly on utilizing a t-test. For question 29, "How strong was your nausea in the last year?" the NBOT group had a mean of 0.97 while the BOT group had a mean of 2.26. The computed t-value indicated that the two groups differ significantly on the intensity in which nausea is experienced. Table 10 indicates that 62 percent of the NBOT group did not experience nausea in the last year compared to 37 percent of the BOT group.

For question 31, "How strong was your ringing sensation in your ear?" the NBOT group had a mean of 0.63 while the
Intensity of Feeling: How Strong:

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Never</td>
<td>Very Mild</td>
<td>Barely Noticeable</td>
<td>Moderate</td>
<td>Major, Very Strong</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

INTENSITY SCALE OF TSCII

Figure 3
BOT group had a mean of 1.74. The computed t-value indicated that the two groups differ significantly on the intensity in which a ringing sensation in the ear is experienced. Table 9 indicates that 78 percent of the NBOT group did not experience a ringing sensation in their ears in the last year compared to 41 percent of the BOT group. For question 38, "How strong was the acid in your stomach?" the NBOT group had a mean of 2.37. The computed t-value indicated that the two groups differ significantly on the intensity in which acid in the stomach is experienced. Table 10 indicates that 57 percent of the NBOT group did not experience acid in their stomachs in the last year compared to 37 percent of the BOT group. There were no other significant differences between the two groups on the remaining somatic complaints for their intensity scores.

In the discriminant analysis for the TSCII (which excluded questions 65 through 76) the canonical correlation was 0.7695325. Hence 59 percent of the proportion of the variance in the discriminant function was explained by the groups. The level of significance for the discriminating function was 0.003. The percent of grouped cases correctly classified was 94 percent. Table 6 indicates the predicted group membership percentages.

The discriminant analysis stepwise variable selection computed 34 steps and yielded a canonical correlation of 0.7024454. Hence 49 percent of the portion of variance in the discriminant function was explained by the groups when
<table>
<thead>
<tr>
<th>TABLE 9</th>
<th>Comparison of Groups on Intensity of Experiencing Somatic Complaints</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
</tr>
<tr>
<td>Nausea</td>
<td></td>
</tr>
<tr>
<td>NBOT</td>
<td>154</td>
</tr>
<tr>
<td>BOT</td>
<td>27</td>
</tr>
<tr>
<td>A Ringing Sensation in the Ear</td>
<td></td>
</tr>
<tr>
<td>NBOT</td>
<td>154</td>
</tr>
<tr>
<td>BOT</td>
<td>27</td>
</tr>
<tr>
<td>Acid in the Stomach</td>
<td></td>
</tr>
<tr>
<td>NBOT</td>
<td>154</td>
</tr>
<tr>
<td>BOT</td>
<td>27</td>
</tr>
</tbody>
</table>

*Based upon the eight point scale described on page 69.
TABLE 10

Frequency Distributions for Somatic Complaints (How Strong)

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>Never</th>
<th>Very Mild</th>
<th>2</th>
<th>3</th>
<th>Moderate</th>
<th>4</th>
<th>5</th>
<th>Very Strong</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nausea</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NBOT</td>
<td>154</td>
<td>62.338</td>
<td>16.234</td>
<td>3.896</td>
<td>3.896</td>
<td>8.442</td>
<td>3.896</td>
<td>1.299</td>
<td>0.000</td>
<td>100.0%</td>
</tr>
<tr>
<td>BOT</td>
<td>27</td>
<td>37.037</td>
<td>11.111</td>
<td>14.815</td>
<td>7.407</td>
<td>11.111</td>
<td>3.704</td>
<td>3.701</td>
<td>11.111</td>
<td>100.0%</td>
</tr>
<tr>
<td><strong>Ringing</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sensation in</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>the Ear</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NBOT</td>
<td>154</td>
<td>77.922</td>
<td>9.091</td>
<td>2.597</td>
<td>3.247</td>
<td>2.597</td>
<td>1.299</td>
<td>0.649</td>
<td>2.597</td>
<td>100.0%</td>
</tr>
<tr>
<td>BOT</td>
<td>27</td>
<td>40.741</td>
<td>18.519</td>
<td>11.111</td>
<td>3.704</td>
<td>18.519</td>
<td>0.000</td>
<td>3.704</td>
<td>3.704</td>
<td>100.0%</td>
</tr>
<tr>
<td><strong>Acid in the</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Stomach</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NBOT</td>
<td>154</td>
<td>57.143</td>
<td>7.792</td>
<td>10.390</td>
<td>11.039</td>
<td>7.792</td>
<td>3.896</td>
<td>1.299</td>
<td>0.649</td>
<td>100.0%</td>
</tr>
<tr>
<td>BOT</td>
<td>27</td>
<td>37.037</td>
<td>7.407</td>
<td>3.704</td>
<td>18.519</td>
<td>11.111</td>
<td>14.815</td>
<td>3.704</td>
<td>3.704</td>
<td>100.0%</td>
</tr>
</tbody>
</table>
utilizing those computer selected variables listed in Table 8. The level of significance for the discriminating function in the stepwise variable selection computation was significant beyond the 0.0001 level. The percent of grouped cases correctly classified was 91 percent. Table 7 indicates the predicted group percentages.

Since the somatic complaints in questions 29, 31, and 38 (for their intensity scores) had significantly different t-values and since only Q 29 (nausea) appeared in the stepwise variable selection model which had a canonical correlation of 0.7024454 and a level of significance beyond the 0.001 level and since the stepwise variable model correctly classified 91 percent of the grouped cases as compared to the TSCII (excluding questions 65 through 76) which correctly classified 94 percent of the grouped cases, the null hypothesis was rejected for only Q 29 (nausea). The null hypotheses were accepted for the remaining somatic complaints which were: difficulty breathing, difficulty falling asleep, bowel difficulties, headaches, a ringing sensation in the ear, dizziness, abdominal pain, loss of appetite, nightmares, heart beating too fast, loss of voice, acid in the stomach, tearfulness, tightening of muscles, cold sweat, sensitivity to weather, weight loss, trembling hands, blurred vision, back pain, arthritis, bursitis, cold or flu, sore throat, sinusitis, asthma, allergic reaction to food, allergic reaction to something in the air, hemorrhoids, gout, injury from a non-occupational cause, injury from an occupational
cause, pimples, eczema, hives, warts, sty and psoriasis.

**Presence of Illness (Hypothesis 3)**

The illness questions on the TSCII are divided into three categories. An interpretation of these categories follows. Subjects were asked to indicate if they never developed a particular illness, if they developed a particular illness before they became a teacher or if they developed a particular illness after they became a teacher. Subjects were asked to indicate an illness only if it was diagnosed by a physician.

Based upon the descriptive data and chi-square tests of 12 illnesses, the null hypotheses was rejected for two of the illnesses which were cardiovascular disorders and gall bladder disorders. A presentation of the data for these hypotheses follows.

**Cardiovascular Disorder**

Table 11 indicates 94 percent of the NBOT group never developed a cardiovascular disorder as compared to 89 percent of the BOT group. Five percent of the NBOT group developed this illness before becoming a teacher and 1 percent after becoming a teacher. Zero percent of the BOT group developed this illness before becoming a teacher and 11 percent after becoming a teacher.
Ulcers

Table 12 indicates 92 percent of the NBOT group never developed an ulcer as compared to 78 percent of the BOT group. Five percent of the NBOT group developed this illness before becoming a teacher and 3 percent after becoming a teacher. Seven percent of the BOT group developed this illness before becoming a teacher and 15 percent after becoming a teacher.

Hypertension

Table 13 indicates 85 percent of the NBOT group never developed hypertension as compared to 85 percent of the BOT group. Four percent of the NBOT group developed this illness before becoming a teacher and 11 percent after becoming a teacher.

Colitis

Table 14 indicates 93 percent of the NBOT group never developed colitis as compared to 96 percent of the BOT group. Seven percent of the NBOT group developed this illness after becoming a teacher as compared to 4 percent of the BOT group.

Kidney Disorder

Table 15 indicates 91 percent of the NBOT group never developed a kidney disorder as compared to 100 percent of the BOT group. Four percent of the NBOT group developed this illness before becoming a teacher and five percent after becoming a teacher.
Benign Tumors

Table 16 indicates 84 percent of the NEOT group never developed a benign tumor as compared to 82 percent of the BOT group. Eight percent of the NBOT group developed this illness before becoming a teacher and 8 percent after becoming a teacher. Seven percent of the BOT group developed this illness before becoming a teacher and 11 percent after becoming a teacher.

Malignant Tumors

Table 17 indicates 99 percent of the NBOT group never developed a malignant tumor as compared to 100 percent of the BOT group. One percent of the NBOT group developed this illness after becoming a teacher.

Hypotension

Table 18 indicates 90 percent of the NBOT group never developed hypotension as compared to 89 percent of the BOT group. Seven percent of the NBOT group developed this illness before becoming a teacher and 3 percent after becoming a teacher. Four percent of the BOT group developed this illness before becoming a teacher and 7 percent after becoming a teacher.

Gall Bladder Disorders

Table 19 indicates 97 percent of the NBOT group never developed a gall bladder disorder as compared to 89 percent of the BOT group. Two percent of the NBOT group developed
this illness before becoming a teacher and one percent after becoming a teacher. Zero percent of the BOT group developed this illness before becoming a teacher and 11 percent after becoming a teacher.

Gastrointeritis

Table 20 indicates 83 percent of the NBOT group never developed gastrointeritis as compared to 67 percent of the BOT group. Nine percent of the NBOT group developed this illness before becoming a teacher and eight percent after becoming a teacher. Eleven percent of the BOT group developed this illness before becoming a teacher and 22 percent after becoming a teacher.

Migraine Headaches

Table 21 indicates 83 percent of the NBOT group never developed migraine headaches as compared to 81 percent of the BOT group. Eleven percent of the NBOT group developed this illness before becoming a teacher and 6 percent after becoming a teacher. Four percent of the BOT group developed this illness before becoming a teacher and 15 percent after becoming a teacher.

Depression

Table 22 indicates 75 percent of the NBOT group never developed depression as compared to 52 percent of the BOT group. Fifteen percent of the NBOT group developed this illness before becoming a teacher and 10 percent after
becoming a teacher. Eighteen percent of the BOT group
developed this illness before becoming a teacher and 30 per­
cent after becoming a teacher.

It would appear, based upon the descriptive data for
these 12 illnesses, that cardiovascular disorder and gall
bladder disorder occur with greater frequency after teachers
became teachers in the BOT group as compared to the NBOT
group. None of the burned out teachers developed these
illnesses before becoming a teacher. All of the burned out
teachers who developed these illnesses reported developing
these illnesses after becoming a teacher. Only one percent
of the NBOT group reported developing these illnesses after
becoming a teacher.

The chi-square tests for these two illnesses, and two
additional illnesses ulcers and depression, indicated that
the two groups differ significantly as to when these ill­
nesses manifested themselves. However, the appropriateness
of the chi-square tests for the 12 illnesses in this
hypothesis was questionable due to the small number of
expected frequencies in some cells. With this in mind, a
reexamination of the descriptive data for ulcers and
depression was warranted.

Table 12 indicated that almost as many teachers in the
NBOT group developed ulcers before becoming a teacher as
compared to after becoming a teacher. Thus there is some
question as to whether or not ulcers are indicative of
the BOT group.
Table 22 indicates that depression was the most prevalent illness of the 12 illnesses, among all 181 teachers. A greater percentage of teachers in the BOT group developed this illness after becoming a teacher as opposed to before.

A greater percentage of the BOT group experienced depression (48%) than did the NBOT group (25%). However, a fairly similar number of teachers in the NBOT reported developing depression before becoming a teacher as opposed to after becoming a teacher. Thus it seems depression is prevalent among teachers in both groups but not indicative of teachers in the BOT group.

Since cardiovascular and gall bladder diseases occurred with greater frequency in burned out teachers after they became teachers, since not one of the burned out teachers reported developing these illnesses before becoming a teacher, since not one of the burned out teachers who reported these illnesses was misclassified based upon the discriminant analysis of the TSCII, and since the chi-square tests for these two illnesses were at the 0.0016 and 0.0024 levels respectively, the null hypotheses were rejected for cardiovascular and gall bladder disorders. The null hypotheses were accepted for the remaining illnesses which were: ulcers, hypertension, colitis, kidney disorders, benign growths, malignant growths, hypotension, gastroenteritis, migraine headaches and depression.
### TABLE 11
Chi-Square Table of Groups by Illness

Q. 65. I have been diagnosed by a physician as having a cardiovascular disorder (heart disease, heart attack, etc.)

<table>
<thead>
<tr>
<th></th>
<th>NEVER</th>
<th>BEFORE I BECAME A TEACHER</th>
<th>AFTER I BECAME A TEACHER</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>frequency</td>
<td>145</td>
<td>8</td>
<td>1</td>
<td>154</td>
</tr>
<tr>
<td>row pct.</td>
<td>94.16</td>
<td>5.19</td>
<td>0.65</td>
<td></td>
</tr>
<tr>
<td>col. pct.</td>
<td>85.80</td>
<td>100.00</td>
<td>25.00</td>
<td></td>
</tr>
<tr>
<td>BOT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>frequency</td>
<td>24</td>
<td>0</td>
<td>3</td>
<td>27</td>
</tr>
<tr>
<td>row pct.</td>
<td>88.89</td>
<td>0.00</td>
<td>11.11</td>
<td></td>
</tr>
<tr>
<td>col. pct.</td>
<td>14.20</td>
<td>0.00</td>
<td>75.00</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>169</td>
<td>8</td>
<td>4</td>
<td>181</td>
</tr>
</tbody>
</table>

CHI-SQUARE = 12.848

PROBABILITY = 0.0016
TABLE 12
Chi-Square Table of Groups by Illness

Q. 66. I have been diagnosed by a physician as having ulcers.

<table>
<thead>
<tr>
<th></th>
<th>NEVER</th>
<th>BEFORE I BECAME A TEACHER</th>
<th>AFTER I BECAME A TEACHER</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NBOT</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>frequency</td>
<td>142</td>
<td>7</td>
<td>5</td>
<td>154</td>
</tr>
<tr>
<td>row pct.</td>
<td>92.21</td>
<td>4.55</td>
<td>3.25</td>
<td></td>
</tr>
<tr>
<td>col. pct.</td>
<td>87.12</td>
<td>77.78</td>
<td>55.56</td>
<td></td>
</tr>
<tr>
<td><strong>BOT</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>frequency</td>
<td>21</td>
<td>2</td>
<td>4</td>
<td>27</td>
</tr>
<tr>
<td>row pct.</td>
<td>77.78</td>
<td>7.41</td>
<td>14.81</td>
<td></td>
</tr>
<tr>
<td>col. pct.</td>
<td>12.88</td>
<td>22.22</td>
<td>44.44</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>163</td>
<td>9</td>
<td>9</td>
<td>181</td>
</tr>
<tr>
<td></td>
<td>90.06</td>
<td>4.97</td>
<td>4.97</td>
<td></td>
</tr>
</tbody>
</table>

CHI-SQUARE = 7.092

PROBABILITY = 0.0288
Table 13

Chi-Square Table of Groups by Illness

Q. 67. I have been diagnosed by a physician as having hypertension.

<table>
<thead>
<tr>
<th></th>
<th>NEVER</th>
<th>BEFORE I BECAME A TEACHER</th>
<th>AFTER I BECAME A TEACHER</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>NBOT</td>
<td></td>
<td></td>
<td></td>
<td>154</td>
</tr>
<tr>
<td></td>
<td>frequency</td>
<td>131</td>
<td>6</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>row pct.</td>
<td>85.06</td>
<td>3.90</td>
<td>11.04</td>
</tr>
<tr>
<td></td>
<td>col. pct.</td>
<td>85.06</td>
<td>85.71</td>
<td>85.00</td>
</tr>
<tr>
<td>BOT</td>
<td></td>
<td></td>
<td></td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>frequency</td>
<td>23</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>row pct.</td>
<td>85.19</td>
<td>3.70</td>
<td>11.11</td>
</tr>
<tr>
<td></td>
<td>col. pct.</td>
<td>14.94</td>
<td>14.29</td>
<td>15.00</td>
</tr>
</tbody>
</table>

**CHI-SQUARE = 0.002**

**PROBABILITY = 0.9988**
TABLE 14
Chi-Square Table of Groups by Illness

Q. 68. I have been diagnosed by a physician as having colitis.

<table>
<thead>
<tr>
<th></th>
<th>NEVER</th>
<th>BEFORE I BECAME A TEACHER</th>
<th>AFTER I BECAME A TEACHER</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>NBOT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>frequency</td>
<td>143</td>
<td>0</td>
<td>11</td>
<td>154</td>
</tr>
<tr>
<td>row pct.</td>
<td>92.86</td>
<td>0.0</td>
<td>7.14</td>
<td></td>
</tr>
<tr>
<td>col. pct.</td>
<td>84.62</td>
<td>0.0</td>
<td>91.67</td>
<td></td>
</tr>
<tr>
<td>BOT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>frequency</td>
<td>26</td>
<td>0</td>
<td>1</td>
<td>27</td>
</tr>
<tr>
<td>row pct.</td>
<td>96.30</td>
<td>0.0</td>
<td>3.70</td>
<td></td>
</tr>
<tr>
<td>col. pct.</td>
<td>15.38</td>
<td>0.0</td>
<td>8.33</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>169</td>
<td>12</td>
<td>181</td>
<td></td>
</tr>
</tbody>
</table>

CHI-SQUARE = 0.439

PROBABILITY = 0.5076
TABLE 15
Chi-Square Table of Groups by Illness

Q. 69. I have been diagnosed by a physician as having a kidney disorder.

<table>
<thead>
<tr>
<th></th>
<th>NEVER</th>
<th>BEFORE I BECAME A TEACHER</th>
<th>AFTER I BECAME A TEACHER</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>NBOT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>frequency</td>
<td>140</td>
<td>6</td>
<td>8</td>
<td>154</td>
</tr>
<tr>
<td>row pct.</td>
<td>90.91</td>
<td>3.90</td>
<td>5.19</td>
<td></td>
</tr>
<tr>
<td>col. pct.</td>
<td>83.83</td>
<td>100.00</td>
<td>100.00</td>
<td></td>
</tr>
<tr>
<td>BOT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>frequency</td>
<td>27</td>
<td>0</td>
<td>0</td>
<td>27</td>
</tr>
<tr>
<td>row pct.</td>
<td>100.00</td>
<td>0.0</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td>col. pct.</td>
<td>16.17</td>
<td>0.0</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>167</td>
<td>6</td>
<td>8</td>
<td>181</td>
</tr>
</tbody>
</table>

CHI-SQUARE = 2.660

PROBABILITY = 0.2644
TABLE 16
Chi-Square Table of Groups by Illness

Q. 70. I have been diagnosed by a physician as having a benign growth or tumor.

<table>
<thead>
<tr>
<th></th>
<th>NEVER</th>
<th>BEFORE I BECAME A TEACHER</th>
<th>AFTER I BECAME A TEACHER</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>NBOT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>frequency</td>
<td>129</td>
<td>13</td>
<td>12</td>
<td>154</td>
</tr>
<tr>
<td>row pct.</td>
<td>83.77</td>
<td>8.44</td>
<td>7.79</td>
<td></td>
</tr>
<tr>
<td>col. pct.</td>
<td>85.43</td>
<td>86.67</td>
<td>80.00</td>
<td></td>
</tr>
<tr>
<td>BOT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>frequency</td>
<td>22</td>
<td>2</td>
<td>3</td>
<td>27</td>
</tr>
<tr>
<td>row pct.</td>
<td>81.48</td>
<td>7.41</td>
<td>11.11</td>
<td></td>
</tr>
<tr>
<td>col. pct.</td>
<td>14.57</td>
<td>13.33</td>
<td>20.00</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>151</td>
<td>15</td>
<td>15</td>
<td>181</td>
</tr>
</tbody>
</table>

CHI-SQUARE = 0.349

PROBABILITY = 0.8397
### TABLE 17
Chi-Square Table of Groups by Illness

Q. 71. I have been diagnosed by a physician as having a malignant growth or tumor.

<table>
<thead>
<tr>
<th></th>
<th>NEVER</th>
<th>BEFORE I BECAME A TEACHER</th>
<th>AFTER I BECAME A TEACHER</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>NBOT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>frequency</td>
<td>152</td>
<td>0</td>
<td>2</td>
<td>154</td>
</tr>
<tr>
<td>row pct.</td>
<td>98.70</td>
<td>0.0</td>
<td>1.30</td>
<td></td>
</tr>
<tr>
<td>col. pct.</td>
<td>84.92</td>
<td>0.0</td>
<td>100.00</td>
<td></td>
</tr>
<tr>
<td>BOT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>frequency</td>
<td>27</td>
<td>0</td>
<td>0</td>
<td>27</td>
</tr>
<tr>
<td>row pct.</td>
<td>100.0</td>
<td>0.0</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td>col. pct.</td>
<td>15.08</td>
<td>0.00</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>179</td>
<td>2</td>
<td>181</td>
<td></td>
</tr>
</tbody>
</table>

CHI-SQUARE = 0.355

PROBABILITY = 0.5515
TABLE 18
Chi-Square Table of Groups by Illness

Q. 72. I have been diagnosed by a physician as having hypotension.

<table>
<thead>
<tr>
<th></th>
<th>NEVER</th>
<th>BEFORE I BECAME A TEACHER</th>
<th>AFTER I BECAME A TEACHER</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>NBOT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>frequency</td>
<td>139</td>
<td>11</td>
<td>4</td>
<td>154</td>
</tr>
<tr>
<td>row pct.</td>
<td>90.26</td>
<td>7.14</td>
<td>2.60</td>
<td></td>
</tr>
<tr>
<td>col. pct.</td>
<td>85.28</td>
<td>91.67</td>
<td>66.67</td>
<td></td>
</tr>
<tr>
<td>BOT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>frequency</td>
<td>24</td>
<td>1</td>
<td>2</td>
<td>27</td>
</tr>
<tr>
<td>row pct.</td>
<td>88.89</td>
<td>3.70</td>
<td>7.41</td>
<td></td>
</tr>
<tr>
<td>col. pct.</td>
<td>14.72</td>
<td>8.33</td>
<td>33.33</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>163</td>
<td>12</td>
<td>6</td>
<td>181</td>
</tr>
<tr>
<td></td>
<td>90.06</td>
<td>6.63</td>
<td>3.31</td>
<td></td>
</tr>
</tbody>
</table>

CHI-SQUARE = 2.018

PROBABILITY = 0.3646
TABLE 19

Chi-Square Table of Groups by Illness

Q. 72. I have been diagnosed by a physician as having a gall bladder disorder or disease.

<table>
<thead>
<tr>
<th></th>
<th>NEVER</th>
<th>BEFORE I BECAME A TEACHER</th>
<th>AFTER I BECAME A TEACHER</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>NBOT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>frequency</td>
<td>150</td>
<td>3</td>
<td>1</td>
<td>154</td>
</tr>
<tr>
<td>row pct.</td>
<td>97.40</td>
<td>1.95</td>
<td>0.65</td>
<td></td>
</tr>
<tr>
<td>col. pct.</td>
<td>86.21</td>
<td>100.00</td>
<td>25.00</td>
<td></td>
</tr>
<tr>
<td>BOT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>frequency</td>
<td>24</td>
<td>0</td>
<td>3</td>
<td>27</td>
</tr>
<tr>
<td>row pct.</td>
<td>88.89</td>
<td>0.0</td>
<td>11.11</td>
<td></td>
</tr>
<tr>
<td>col. pct.</td>
<td>13.79</td>
<td>0.0</td>
<td>75.00</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>174</td>
<td>3</td>
<td>4</td>
<td>2.21</td>
</tr>
<tr>
<td></td>
<td>96.13</td>
<td>1.66</td>
<td>2.21</td>
<td></td>
</tr>
</tbody>
</table>

CHI-SQUARE = 12.176

PROBABILITY = 0.0024
### TABLE 20

Chi-Square Table of Groups by Illness

Q. 74. I have been diagnosed by a physician as having gastroenteritis.

<table>
<thead>
<tr>
<th></th>
<th>NEVER</th>
<th>BEFORE I BECAME A TEACHER</th>
<th>AFTER I BECAME A TEACHER</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NBOT</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>frequency</td>
<td>127</td>
<td>14</td>
<td>13</td>
<td>154</td>
</tr>
<tr>
<td>row pct.</td>
<td>82.47</td>
<td>9.09</td>
<td>8.44</td>
<td></td>
</tr>
<tr>
<td>col. pct.</td>
<td>87.59</td>
<td>82.35</td>
<td>68.42</td>
<td></td>
</tr>
<tr>
<td><strong>BOT</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>frequency</td>
<td>18</td>
<td>3</td>
<td>6</td>
<td>27</td>
</tr>
<tr>
<td>row pct.</td>
<td>66.67</td>
<td>11.11</td>
<td>22.22</td>
<td></td>
</tr>
<tr>
<td>col. pct.</td>
<td>12.41</td>
<td>17.65</td>
<td>31.58</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>145</td>
<td>17</td>
<td>19</td>
<td>181</td>
</tr>
</tbody>
</table>

\[\text{CHI-SQUARE} = 4.972\]

\[\text{PROBABILITY} = 0.0833\]
TABLE 21

Chi-Square Table of Groups by Illness

Q. 75. I have been diagnosed by a physician as having migraine headaches.

<table>
<thead>
<tr>
<th></th>
<th>NEVER</th>
<th>BEFORE I BECAME A TEACHER</th>
<th>AFTER I BECAME A TEACHER</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>NBOT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>frequency</td>
<td>128</td>
<td>17</td>
<td>9</td>
<td>154</td>
</tr>
<tr>
<td>row pct.</td>
<td>83.12</td>
<td>11.04</td>
<td>5.84</td>
<td></td>
</tr>
<tr>
<td>col. pct.</td>
<td>85.33</td>
<td>94.44</td>
<td>69.23</td>
<td></td>
</tr>
<tr>
<td>BOT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>frequency</td>
<td>22</td>
<td>1</td>
<td>4</td>
<td>27</td>
</tr>
<tr>
<td>row pct.</td>
<td>81.48</td>
<td>3.70</td>
<td>14.81</td>
<td></td>
</tr>
<tr>
<td>col. pct.</td>
<td>14.67</td>
<td>5.56</td>
<td>30.77</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>150</td>
<td>18</td>
<td>13</td>
<td>181</td>
</tr>
</tbody>
</table>

CHI-SQUARE = 3.824
PROBABILITY = 0.1478
**TABLE 22**

Chi-Square Table of Groups by Illness

Q. 76. I have been diagnosed by a physician as having depression.

<table>
<thead>
<tr>
<th></th>
<th>NEVER</th>
<th>BEFORE I BECAME A TEACHER</th>
<th>AFTER I BECAME A TEACHER</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>NBOT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>frequency</td>
<td>115</td>
<td>23</td>
<td>16</td>
<td>154</td>
</tr>
<tr>
<td>row pct.</td>
<td>74.68</td>
<td>14.94</td>
<td>10.39</td>
<td></td>
</tr>
<tr>
<td>col. pct.</td>
<td>89.15</td>
<td>82.14</td>
<td>66.67</td>
<td></td>
</tr>
<tr>
<td>BOT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>frequency</td>
<td>14</td>
<td>5</td>
<td>8</td>
<td>27</td>
</tr>
<tr>
<td>row pct.</td>
<td>51.85</td>
<td>18.52</td>
<td>29.63</td>
<td></td>
</tr>
<tr>
<td>col. pct.</td>
<td>10.85</td>
<td>17.86</td>
<td>33.33</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>129</td>
<td>28</td>
<td>24</td>
<td>181</td>
</tr>
<tr>
<td></td>
<td>71.27</td>
<td>15.47</td>
<td>13.26</td>
<td></td>
</tr>
</tbody>
</table>

CHI-SQUARE = 8.283

PROBABILITY = 0.0159
Discussion of the Data Pertaining to the Hypotheses

By assembling those somatic complaints and illnesses that discriminate burned out teachers from teachers who are not burned out into a flow chart, their interrelationships become apparent (Figure 4).

<table>
<thead>
<tr>
<th>Difficulty Breathing</th>
<th>Acid in the Stomach</th>
<th>Nausea</th>
<th>Cardiovascular Disorder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Difficulty Breathing</td>
<td>Acid in the Stomach</td>
<td>Nausea</td>
<td>Cardiovascular Disorder</td>
</tr>
<tr>
<td>Acid in the Stomach</td>
<td>Ringing in the Ear</td>
<td>Heart Beating Too Fast</td>
<td></td>
</tr>
<tr>
<td>Nausea</td>
<td>Acid in the Stomach</td>
<td>Nausea</td>
<td>Gall Bladder Disorder</td>
</tr>
<tr>
<td>Ringing in the Ear</td>
<td>Heart Beating Too Fast</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heart Beating Too Fast</td>
<td>Acid in the Stomach</td>
<td>Nausea</td>
<td>Gall Bladder Disorder</td>
</tr>
<tr>
<td>Acid in the Stomach</td>
<td>Nausea</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nausea</td>
<td>Abdominal Pain</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abdominal Pain</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Loss of Voice

RELATIONSHIP OF BURNED OUT TEACHERS'
SOMATIC COMPLAINTS AND ILLNESSES

Figure 4

With the exception of the somatic complaint, loss of voice, all of the above somatic complaints are signs and symptoms of either cardiovascular or gall bladder disorder or both. These illnesses and somatic complaints are in line with the review of the literature as being suspect of their possible relationship to stress and burnout (Caplan et al., 1974; Walsh, 1979; Needle, 1980; Kyriacou and Sutcliffe,
Indeed the subjects in this study who were classified as burned out did experience these somatic complaints and illnesses more frequently.

The discriminate analysis stepwise procedure suggested that several additional somatic complaints were discriminating variables between the two groups. They were: warts, eczema, an allergic reaction to something in the air, hemorrhoids, an injury from a non-occupational cause, pimples, back pain, cold or flu, sensitivity to the weather, nightmares, difficulty in falling asleep at night, an injury from an occupational cause, bowel difficulties, tearfulness, hives, dizziness and headaches. These somatic complaints did not yield a significant difference between the two groups of teachers utilizing a t-test. However, it was possible to differentiate between the two groups of teachers utilizing those somatic complaints listed up to (and including) step 30 in the discriminant analysis stepwise variable selection (see Table 8). Indeed, the percentage of teachers correctly classified into the two groups was 91 percent utilizing the somatic complaints listed in the discriminant analysis stepwise variable selection (see Table 7).

Due to the fact that the sample was relatively small (n = 181), the testing for significant differences between the two groups for the 12 illnesses was hindered.

Table 23 presents those subjects who were determined to be misclassified by the discriminant analysis and not used
### TABLE 23
Summary of Misclassified Teachers' Descriptive Data

<table>
<thead>
<tr>
<th>Teacher</th>
<th>Teacher Status</th>
<th>Years at Present School</th>
<th>Years Teaching</th>
<th>Age</th>
<th>Actual Group</th>
<th>Probable Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>004</td>
<td>Lay</td>
<td>15</td>
<td>16</td>
<td>54</td>
<td>0*</td>
<td>1**</td>
</tr>
<tr>
<td>045</td>
<td>Clergical</td>
<td>2</td>
<td>20</td>
<td>40</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>073</td>
<td>Lay</td>
<td>1</td>
<td>1</td>
<td>26</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>074</td>
<td>Lay</td>
<td>6</td>
<td>10</td>
<td>38</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>075</td>
<td>Lay</td>
<td>1</td>
<td>3</td>
<td>29</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>119</td>
<td>Lay</td>
<td>2</td>
<td>2</td>
<td>23</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>125</td>
<td>Lay</td>
<td>16</td>
<td>16</td>
<td>42</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>134</td>
<td>Lay</td>
<td>2</td>
<td>5</td>
<td>29</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>138</td>
<td>Lay</td>
<td>2</td>
<td>2</td>
<td>24</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>147</td>
<td>Clergical</td>
<td>3</td>
<td>25</td>
<td>51</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

*0 = NBOT  
**1 = BOT
in the analysis itself. Subjects 004 and 125 if placed in the BOT group would have been above the maximum range for that group for "years teaching." It would seem the majority of teachers who presented a problem in the analysis, or were in the "gray area," were those teachers who were at their present schools for no more than two years. This includes both fledgling and seasoned teachers. Based upon the related data in Tables 1 and 4, this would seem to suggest that accepting a new or first time teaching position might be related in some way to teacher stress and burnout.

It can be reported that almost 15 percent of the teachers in this study were burned out. This is in line with the review of literature which suggests between 10 and 20 percent of any given teacher population experiences extreme stress related to their job. The data in this study suggests that those teachers who are experiencing extreme stress related to their job also have a greater incidence of seven somatic complaints and two illnesses. If one accepts these findings then one can conclude that teacher burnout does represent some health risks to teachers in this study.

Summary of Chapter IV

This chapter presented and discussed the data of this study. Initially, data were presented concerning the groups as a whole, as well as characteristics of the teachers. In general, the teachers in their respective groups proved to be more similar than dissimilar on their descriptive
variables with the exception of the number of hours per week they worked.

Data relevant to the three null hypotheses were examined. Seven somatic complaints: difficulty breathing, nausea, tinnitus, abdominal pain, heart beating fast, loss of voice, acid in the stomach and two illnesses—cardiovascular and gall bladder disorders, were more frequently experienced by burned out teachers.

Finally a discussion of the data pertaining to the hypotheses was presented. This suggested that teachers in this study could be correctly classified as burned out or not burned out 91 percent of the time utilizing 24 somatic complaints as the discriminating variables. The data also suggested that teacher burnout does represent a health risk to its victims.
CHAPTER V
SUMMARY, CONCLUSIONS, RECOMMENDATIONS, AND IMPLICATIONS

Summary

The purpose of this study was to investigate the relationship between the frequency and intensity of secondary Catholic school teachers' somatic complaints and illnesses and their self reported job related stresses as measured by the Maslach Burnout Inventory. Teachers were classified into two groups by the Maslach Burnout Inventory and their respective somatic complaints and illnesses were compared. Antecedent data were collected to describe the two groups.

The following null hypotheses were tested:

(1) For the variable "frequency of somatic complaints (39 items)," the means of the two groups of teachers will be equivalent.

(2) For the variable "intensity of somatic complaints (39 items)," the means of the two groups of teachers will be equivalent.

(3) For the variable "presence of illness (12 items)," the frequencies of the two groups of teachers will be equivalent.
The respondents in this study were secondary Catholic school teachers in Central Ohio. In all, 230 subjects were eligible to participate in the study of which 184 responded. Three respondents' questionnaires were disqualified due to missing data. Thus the sample consisted of 181 teachers or 79 percent of the secondary Catholic school teachers in Central Ohio.

In May, 1980 the data were collected from the teachers. The criterion measure used to group the teachers was the Maslach Burnout Inventory. The Teacher Somatic Complaint and Illness Inventory was developed to measure the teachers' somatic complaints and illness. A number of descriptive variables were also obtained from the teachers.

Frequencies, mean scores and standard deviations were computed for both groups. The data were then analyzed in three modes. Comparisons on the dependent variables, somatic complaints and illnesses, were made by a t-test, chi-square test of independence and a discriminant analysis.

**Conclusions**

The data generated from this investigation supported the following conclusions:

1. Teachers classified as burned out by the MBI did achieve significantly higher mean scores for seven somatic complaints on the frequency scale of the TSCII than did those teachers who failed to be classified as burned out by the MBI. Teachers who are burned out may be experiencing seven
somatic complaints more frequently than their peers. These complaints are: difficulty breathing, nausea, tinnitus, abdominal pain, heart beating fast, loss of voice, and acid in the stomach.

2. Teachers classified as burned out by the MBI did achieve a significantly higher mean score for one somatic complaint nausea, on the intensity scale of the TSCII then did those who failed to be classified as burned out by the MBI. The data concerning this area was inconclusive and therefore no inferences can be made as to the impact of burnout on the intensity of teachers' somatic complaints.

3. Teachers classified as burned out by the MBI did achieve significantly higher frequency scores for two illnesses on the TSCII than did those teachers who were not classified as burned out by the MBI. Teachers who are experiencing burnout may also be developing cardiovascular and gall bladder disorders more frequently than their peers.

Even though the data collected in this study did indicate that teacher burnout is significantly related to several somatic complaints and illnesses of teachers in this study, it is not plausible to state that burnout alone accounted for the difference. Several extraneous variables such as psychological background, genetic endowment, diet, exercise (or lack of), individual stress coping mechanisms, geographic location and other variables possibly and probably play some role in the manifestation of these somatic complaints and illnesses. However, it is not unreasonable to conclude, based
upon the data in this study, that teacher burnout does account for some of the differences between groups.

4. Teachers classified as burned out by the MBI were more similar than dissimilar on descriptive data when compared to teachers who failed to be classified as burned out by the MBI. At least for the teachers in this study, there was no one individual item or set of descriptive items which suggested playing some role in the teacher burnout syndrome.

5. Teachers in this study could be correctly classified as burned out or not burned out 91 percent of the time utilizing 24 somatic complaints as the discriminating variables.

6. In light of conclusions 1 and 3 and the relationship between the somatic complaints and illnesses they represented, it is reasonable to suspect that teacher burnout does present some health risks to the teachers in this study.

Recommendations

The results and conclusions of this study have prompted the following recommendations:

1. Research is needed to determine if burned out teachers from varied geographic, socioeconomic, academic and larger (N>181) teacher populations experience similar somatic complaints and illnesses.

2. Research is needed concerning the psychological and philosophical profile of clerical and lay teachers and their relationships with teacher burnout. Data are needed to determine if clerical teachers are better able to cope with teacher burnout than lay teachers.
3. Research is needed concerning the relationship between teachers who have recently (24 months or less) relocated to another school building, and teacher stress.

4. Research is needed to determine whether or not the characteristics of the student, school, community, parents, teacher, or any combination of these variables are factors in the manifestations of teacher burnout.

5. Research is needed to identify which elements of teaching present the greatest amount of stress for various teacher populations. Further studies are required to determine if it is the act of teaching, ancillary factors of teaching, or a combination of both, which results in teachers experiencing stress.

**Implications**

The conclusion that burnout represents a health risk to the teachers in this study has implications for health educators in future research and intervention strategies concerning teacher burnout.

Health Educators can determine the prevalence and incidence of burnout in varied teacher populations. Simultaneously, health educators can determine which somatic complaints and illnesses, if any, are typical of teacher burnout. This is a formidable task which will require an interdisciplinary approach involving longitudinal and elegant research designs. The focal point here would be to segregate the various elements of the teaching act and
teaching profession and then determine their impact and relative contribution to the burnout syndrome in teachers.

Subsequently, when a better understanding of the causes and resultants of teacher burnout are achieved, health educators can play a key role in developing, implementing and evaluating early detection and prevention in-service programs regarding teacher burnout. Health educators' expertise in this area can be an invaluable asset to the re-evaluation of teacher preparation programs in universities and colleges.

Finally health educators can play a supporting role in the rehabilitation process of burned out teachers. An interdisciplinary approach to rehabilitating burned out teachers which involves health educators has several inherent benefits. These benefits emerge due to the fact that health educators are: themselves trained as teachers and therefore have additional insight into the dynamics of teaching and teacher stress, specifically trained in educating individuals about physiological and psychological factors which threaten an individual's overall health and have an expertise in motivating individuals to take positive action toward those maladies which threaten their health.

Indeed it would seem that the growing concern over the classroom teacher's health is not a misguided concern. Health educators need to, and in some cases are obligated to, mobilize their skills and address the health issues of teacher burnout.
APPENDIX A
May 8, 1980

Mr. Philip Belcastro
The Ohio State University/School of HPER
1760 Neil Avenue
Columbus, Ohio 43210

Dear Mr. Belcastro:

This letter is to confirm that you have the permission of the Superintendent of Schools of the Diocese of Columbus, Mr. Daniel Brent, to conduct a survey in conjunction with research you are conducting for your doctoral program. I understand that you will be contacting the principals of the secondary schools which the Diocese of Columbus operates both in Franklin County and in the adjacent counties.

I have seen and approved the instrument which you will use with the faculties in these schools, and I have written to the principals to indicate my approval. It will be your responsibility to contact the principals about particulars; if the principals do not wish to participate, I believe it must be their option.

You may use this letter to indicate my participation in your project, as may be requested by your doctoral committee.

I look forward to seeing the results of your research.

Sincerely,

Michael F. Gilligan
Assistant Superintendent of Schools
Dear Mr. Durant,

This letter is a request for permission to gather data from the teachers in your school. This research project, which will also serve as a doctoral dissertation, will attempt to discover if there is any relationship between how teachers view their job and their self-reported somatic complaints and illnesses.

Your assistant superintendent, Michael Gilligan, has supported this project by announcing it in the superintendent's newsletter, "Monday Musings" on February 19, 1980. Mr. Gilligan has also reviewed the questionnaire, of which a copy is enclosed, with this letter. A short time after the questionnaires are administered in your school, Mr. Gilligan will be provided with the results of this study.

In an effort to use the effort efficiently and to answer any questions you might have, I will telephone you personally on April 11, 1980. The total research effort, including my administering the questionnaires in your school, should not consume more than 15 minutes of your teachers' time.

I am looking forward to our partnership in this study and our contribution to the improvement of quality education in the Diocese of Columbus and Central Ohio.

Yours in health,

Philip A. Belcastro

Advisory Committee
Dr. Philip Heit, Associate Professor
Dr. Robert Kealan, Professor
Dr. James Warnbro, Professor

College of Education
APPENDIX B
BEHAVIORAL AND SOCIAL SCIENCES
HUMAN SUBJECTS REVIEW COMMITTEE (HSRC)
THE OHIO STATE UNIVERSITY

Submission Date: May 6, 1980
Meeting Date: May 16, 1980

The research protocol entitled "THE RELATIONSHIP BETWEEN TEACHERS WHO ARE BURNT OUT AND THEIR SELF REPORTED SOMATIC COMPLAINTS AND ILLNESSES" by Philip Heit/Philip A. Belcastro
(Principal Investigator)
Health, Phys Ed & Rec
(Department & College)
1760 Neil Ave.
(Campus Address)

presented for review by the Human Subjects Review Committee to ensure the proper protection of the rights and welfare of the individuals involved with consideration of the methods used to obtain informed consent and the justification of risks in terms of potential benefits to be gained. The Committee action was:

☐ APPROVED
☐ APPROVED WITH CONDITIONS BELOW
☐ DEFERRED - COMMENTS BELOW
☐ DISAPPROVED
☐ NO REVIEW NECESSARY

(Signature of Committee Member)

CONDITIONS/COMMENTS: Include in letter or instructions to the teacher that participation is voluntary and they may withdraw.

If you agree to the above conditions, please sign this form in the space(s) provided and return it with any additional information requested to Room 205, Ohio State University Research Foundation, 1314 Kinnear Road, Campus, within one week. Upon such compliance, the approval form will be mailed to you. (In the case of a deferred protocol, please submit the requested information at your earliest convenience. The next meeting of the Committee is two weeks from last meeting date.)

Date ___________________ Signature ___________________
(Principal Investigators)

Date ___________________ Signature ___________________
(Chairman, Behavioral and Social Sciences Human Subjects Review Committee)
APPENDIX C
Dear Teacher,

Teaching is a job which requires special talents and abilities in relating to people. It can also involve a good deal of stress, depending on the particular demands of the job, and the limited resources available. The purpose of this questionnaire is to discover if there is any relationship between how teachers view their job and their somatic complaints and illnesses. Your answers will help us to formulate more adequate teacher preparation programs and teacher in-service programs which address the health needs of teachers. However, your participation in this study is voluntary and you may feel free to withdraw.

Be assured that all questionnaires are STRICTLY CONFIDENTIAL. Your personal answers will not be divulged under any circumstances. Questionnaires will be identified by a school code number which will identify the school a questionnaire came from. NO CONNECTION CAN BE MADE BETWEEN ANY INDIVIDUAL AND HIS OR HER ANSWERS. We are interested in the answers of all respondents taken together as a group rather than in the answers of any one respondent. Results will be collated in the general statistical form and never with reference to any individual. Thank you for your cooperation.

Yours in health,

Philip A. Belcastro
Division of Health
Education

PAB/mjd
On the following pages are several statements of job-related feelings you might have. Please read each statement carefully and decide if you ever feel this way about your job. If you have never had this feeling, check the box marked "NEVER" and go on to the next statement. However, if you have experienced this feeling, indicate HOW OFTEN you feel it by circling the appropriate number on the 6-point scale. Then, decide HOW STRONG the feeling is when you experience it by circling the appropriate number on the 7-point scale. An example is shown below.

**Frequency of Feeling: How Often:**

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEVER TIMES A YEAR OR LESS</td>
<td>ONCE A MONTH</td>
<td>A FEW TIMES A MONTH</td>
<td>A FEW TIMES A WEEK</td>
<td>A FEW TIMES A DAY</td>
<td>EVERY WEEK</td>
</tr>
</tbody>
</table>

**Intensity of Feeling: How Strong:**

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>VERY MILD, BARELY NOTICABLE</td>
<td>MODERATE</td>
<td>MAJOR, VERY STRONG</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Example:**

00. I feel depressed at work.

HOW OFTEN: 1 2 3 4 5 6

NEVER □

HOW STRONG: 1 2 3 4 5 6 7

If you occasionally feel depressed at work (say a few times a month) you would circle the number 3. If, when you do feel depressed, it is a fairly strong feeling, but not as strong as you can imagine, you would circle a 6.
Background Information

Your sex:

___ male
___ female

Your age:

___ years

Are you (Check Only One Group)

___ Asian, Asian American
___ Black
___ Latino, Mexican, Mexican American
___ Native American, American Indian
___ White, Caucasian
___ Other (Please specify)

What is your religion?

___ Protestant (specify denomination)
___ Roman Catholic
___ Jewish
___ Other (please specify)
___ None, no religion

How religious do you consider yourself to be? (Circle appropriate number)

1 Very Religious
2 Very Religious
3 Not at all religious
4 Not at all religious

School code number (Circle appropriate number).

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
Marital Status:

___ single
___ married
___ divorced
___ widowed
___ other (please specify)

If married, for how long have you been married to your current spouse?

___ year(s)

If you have children, how many of them are now living with you?

___ children live with me
___ I have no children

What was the highest year you completed in school? CHECK ONLY ONE ANS.

___ no formal schooling
___ some grammar/elementary school
___ completed 8th grade
___ some high school
___ completed high school
___ some college
___ completed 4 years of college
___ some postgraduate work or degree
___ other (please specify)

Please check the highest degree you have received:

___ A.B.
___ B.A./B.S.
___ M.A./M.S.
___ J.D.
___ M.S.W.
___ R.N.
___ L.P.N.
___ H.D.
___ Ph.D.
___ Other

(Specify)
Are you:

_____ A lay teacher
_____ Clergy or religious teacher

How many hours per week do you work? (Include work taken home)

_____ 70 or more
_____ 50-59 hr/wk
_____ 50-59 hr/wk
_____ 40-49 hr/wk

How long have you been at your present school?

_____ year(s)

How long have you been employed as a teacher?

_____ year(s)

Of your total working time, indicate what percentage of that time you spend:

_____ % in direct contact with students
_____ % in direct contact with other staff
_____ % professional training
_____ % in administration duties
_____ % other (please specify_______________)

TOTAL = 100%

Approximately how many hours per week are you in direct contact with students?

_____ hours
HOW OFTEN: times a year  times a month  times a week

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOW STRONG:</td>
<td>Very Mild</td>
<td>Moderate</td>
<td>Very Strong</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. I feel emotionally drained from my work.
   NEVER HOW OFTEN: 1 2 3 4 5 6
   HOW STRONG: 1 2 3 4 5 6 7

2. I feel used up at the end of the workday.
   NEVER HOW OFTEN: 1 2 3 4 5 6
   HOW STRONG: 1 2 3 4 5 6 7

3. I feel similar to my students in many ways.
   NEVER HOW OFTEN: 1 2 3 4 5 6
   HOW STRONG: 1 2 3 4 5 6 7

4. I feel personally involved with my students' problems.
   NEVER HOW OFTEN: 1 2 3 4 5 6
   HOW STRONG: 1 2 3 4 5 6 7

5. I feel fatigued when I get up in the morning and have to face another day on the job.
   NEVER HOW OFTEN: 1 2 3 4 5 6
   HOW STRONG: 1 2 3 4 5 6 7

6. I feel uncomfortable about the way I have treated some students.
   NEVER HOW OFTEN: 1 2 3 4 5 6
   HOW STRONG: 1 2 3 4 5 6 7

7. I can easily understand how my students feel about things.
   NEVER HOW OFTEN: 1 2 3 4 5 6
   HOW STRONG: 1 2 3 4 5 6 7

8. I feel I treat some students as if they were impersonal "objects".
   NEVER HOW OFTEN: 1 2 3 4 5 6
   HOW STRONG: 1 2 3 4 5 6 7
9. Working with people all day is really a strain for me.
   NEVER HOW OFTEN: 1 2 3 4 5 6
   BOX  HOW STRONG: 1 2 3 4 5 6 7

10. I deal very effectively with the problems of my students.
   NEVER HOW OFTEN: 1 2 3 4 5 6
   BOX  HOW STRONG: 1 2 3 4 5 6 7

11. I feel burned out from my work.
   NEVER HOW OFTEN: 1 2 3 4 5 6
   BOX  HOW STRONG: 1 2 3 4 5 6 7

12. I feel I'm positively influencing other people's lives through my work.
   NEVER HOW OFTEN: 1 2 3 4 5 6
   BOX  HOW STRONG: 1 2 3 4 5 6 7

13. I've become more callous toward people since I took this job.
   NEVER HOW OFTEN: 1 2 3 4 5 6
   BOX  HOW STRONG: 1 2 3 4 5 6 7

14. I worry that this job is hardening me emotionally.
   NEVER HOW OFTEN: 1 2 3 4 5 6
   BOX  HOW STRONG: 1 2 3 4 5 6 7

15. I feel very energetic.
   NEVER HOW OFTEN: 1 2 3 4 5 6
   BOX  HOW STRONG: 1 2 3 4 5 6 7

16. I feel very frustrated by my job.
   NEVER HOW OFTEN: 1 2 3 4 5 6
   BOX  HOW STRONG: 1 2 3 4 5 6 7
17. I feel I'm working too hard on my job.

<table>
<thead>
<tr>
<th>NEVER</th>
<th>HOW OFTEN: 1 2 3 4 5 6</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HOW STRONG: 1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>

18. I don't really care what happens to some students.

<table>
<thead>
<tr>
<th>NEVER</th>
<th>HOW OFTEN: 1 2 3 4 5 6</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HOW STRONG: 1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>

19. Working directly with people puts too much stress on me.

<table>
<thead>
<tr>
<th>NEVER</th>
<th>HOW OFTEN: 1 2 3 4 5 6</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HOW STRONG: 1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>

20. I can easily create a relaxed atmosphere with my students.

<table>
<thead>
<tr>
<th>NEVER</th>
<th>HOW OFTEN: 1 2 3 4 5 6</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HOW STRONG: 1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>

21. I feel exhilarated after working closely with my students.

<table>
<thead>
<tr>
<th>NEVER</th>
<th>HOW OFTEN: 1 2 3 4 5 6</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HOW STRONG: 1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>

22. I have accomplished many worthwhile things in this job.

<table>
<thead>
<tr>
<th>NEVER</th>
<th>HOW OFTEN: 1 2 3 4 5 6</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HOW STRONG: 1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>

23. I feel like I'm at the end of my rope.

<table>
<thead>
<tr>
<th>NEVER</th>
<th>HOW OFTEN: 1 2 3 4 5 6</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HOW STRONG: 1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>

24. In my work, I deal with emotional problems very calmly.

<table>
<thead>
<tr>
<th>NEVER</th>
<th>HOW OFTEN: 1 2 3 4 5 6</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HOW STRONG: 1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>
On the following pages are several statements of somatic complaints you might have. Please read each statement carefully and decide if you have experienced them IN THE LAST YEAR. If you have not experienced these somatic complaints in the last year, then check the box "NEVER" and go on to the next statement. However, if you have experienced any of the following somatic complaints in the last year, indicate HOW OFTEN by circling the appropriate number on the 5-point scale. Then decide HOW STRONG and circle the appropriate number on the 7-point scale.

IN THE LAST YEAR I HAVE EXPERIENCED:

26. Difficulty breathing.
   NEVER HOW OFTEN: 1 2 3 4 5 6
   □ HOW STRONG: 1 2 3 4 5 6 7

27. Difficulty in falling asleep at night.
   NEVER HOW OFTEN: 1 2 3 4 5 6
   □ HOW STRONG: 1 2 3 4 5 6 7
IN THE LAST YEAR I HAVE EXPERIENCED:

25. Bowel difficulties (constipation or diarrhea).
   NEVER  HOW OFTEN: 1 2 3 4 5 6
   □     HOW STRONG: 1 2 3 4 5 6 7

29. Nausea.
   NEVER  HOW OFTEN: 1 2 3 4 5 6
   □     HOW STRONG: 1 2 3 4 5 6 7

30. Headaches.
   NEVER  HOW OFTEN: 1 2 3 4 5 6
   □     HOW STRONG: 1 2 3 4 5 6 7

31. A ringing sensation in my ear.
   NEVER  HOW OFTEN: 1 2 3 4 5 6
   □     HOW STRONG: 1 2 3 4 5 6 7

32. Dizziness.
   NEVER  HOW OFTEN: 1 2 3 4 5 6
   □     HOW STRONG: 1 2 3 4 5 6 7

33. Abdominal pain (pain in the stomach or gut).
   NEVER  HOW OFTEN: 1 2 3 4 5 6
   □     HOW STRONG: 1 2 3 4 5 6 7

34. A loss of appetite.
   NEVER  HOW OFTEN: 1 2 3 4 5 6
   □     HOW STRONG: 1 2 3 4 5 6 7

35. Nightmares.
   NEVER  HOW OFTEN: 1 2 3 4 5 6
   □     HOW STRONG: 1 2 3 4 5 6 7
How often: times a year times a month times a week 1 2 3 4 5 6

How strong: Very Mild Moderate Very Strong

In the last year I have experienced:

36. My heart beating too fast.
   NEVER HOW OFTEN: 1 2 3 4 5 6
   [ ] HOW STRONG: 1 2 3 4 5 6 7

37. A loss of my voice.
   NEVER HOW OFTEN: 1 2 3 4 5 6
   [ ] HOW STRONG: 1 2 3 4 5 6 7

38. Acid in my stomach.
   NEVER HOW OFTEN: 1 2 3 4 5 6
   [ ] HOW STRONG: 1 2 3 4 5 6 7

39. Tearfulness.
   NEVER HOW OFTEN: 1 2 3 4 5 6
   [ ] HOW STRONG: 1 2 3 4 5 6 7

40. Tightening of my muscles.
   NEVER HOW OFTEN: 1 2 3 4 5 6
   [ ] HOW STRONG: 1 2 3 4 5 6 7

41. Breaking out in a cold sweat.
   NEVER HOW OFTEN: 1 2 3 4 5 6
   [ ] HOW STRONG: 1 2 3 4 5 6 7

42. Sensitivity to the weather.
   NEVER HOW OFTEN: 1 2 3 4 5 6
   [ ] HOW STRONG: 1 2 3 4 5 6 7

43. A weight loss (without dieting or exercising).
   NEVER HOW OFTEN: 1 2 3 4 5 6
   [ ] HOW STRONG: 1 2 3 4 5 6 7
<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HOW OFTEN:</strong></td>
<td>times a year</td>
<td>times a month</td>
<td>times a week</td>
<td></td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td><strong>HOW STRONG:</strong></td>
<td>Very Mild</td>
<td>Moderate</td>
<td>Very Strong</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**IN THE LAST YEAR I HAVE EXPERIENCED:**

11. Trembling hands.
   - NEVER
   - HOW OFTEN: | 1 | 2 | 3 | 4 | 5 | 6 |
   - HOW STRONG: | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

15. Blurred vision.
   - NEVER
   - HOW OFTEN: | 1 | 2 | 3 | 4 | 5 | 6 |
   - HOW STRONG: | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

   - NEVER
   - HOW OFTEN: | 1 | 2 | 3 | 4 | 5 | 6 |
   - HOW STRONG: | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

17. Arthritis (inflammation of my joints.)
   - NEVER
   - HOW OFTEN: | 1 | 2 | 3 | 4 | 5 | 6 |
   - HOW STRONG: | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

   - NEVER
   - HOW OFTEN: | 1 | 2 | 3 | 4 | 5 | 6 |
   - HOW STRONG: | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

19. A cold or the flu.
   - NEVER
   - HOW OFTEN: | 1 | 2 | 3 | 4 | 5 | 6 |
   - HOW STRONG: | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

50. A sore throat.
   - NEVER
   - HOW OFTEN: | 1 | 2 | 3 | 4 | 5 | 6 |
   - HOW STRONG: | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

51. Sinusitis (inflammation of the sinuses in the head).
   - NEVER
   - HOW OFTEN: | 1 | 2 | 3 | 4 | 5 | 6 |
   - HOW STRONG: | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
IN THE LAST YEAR I HAVE EXPERIENCED:

52. Asthma.
   \(\text{NEVER}\) \(\text{HOW OFTEN: 1 2 3 4 5 6}\)
   \(\text{□} \) \(\text{HOW STRONG: 1 2 3 4 5 6 7}\)

53. An allergic reaction to something I ate.
   \(\text{NEVER}\) \(\text{HOW OFTEN: 1 2 3 4 5 6}\)
   \(\text{□} \) \(\text{HOW STRONG: 1 2 3 4 5 6 7}\)

54. An allergic reaction to something in the air.
   \(\text{NEVER}\) \(\text{HOW OFTEN: 1 2 3 4 5 6}\)
   \(\text{□} \) \(\text{HOW STRONG: 1 2 3 4 5 6 7}\)

55. Hemorrhoids.
   \(\text{NEVER}\) \(\text{HOW OFTEN: 1 2 3 4 5 6}\)
   \(\text{□} \) \(\text{HOW STRONG: 1 2 3 4 5 6 7}\)

56. Gout.
   \(\text{NEVER}\) \(\text{HOW OFTEN: 1 2 3 4 5 6}\)
   \(\text{□} \) \(\text{HOW STRONG: 1 2 3 4 5 6 7}\)

57. An injury from a non-occupational cause.
   \(\text{NEVER}\) \(\text{HOW OFTEN: 1 2 3 4 5 6}\)
   \(\text{□} \) \(\text{HOW STRONG: 1 2 3 4 5 6 7}\)

58. An injury from an occupational cause.
   \(\text{NEVER}\) \(\text{HOW OFTEN: 1 2 3 4 5 6}\)
   \(\text{□} \) \(\text{HOW STRONG: 1 2 3 4 5 6 7}\)

59. Pimples.
   \(\text{NEVER}\) \(\text{HOW OFTEN: 1 2 3 4 5 6}\)
   \(\text{□} \) \(\text{HOW STRONG: 1 2 3 4 5 6 7}\)
<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOW A few Monthly A few Weekly A few Daily TIMES A YEAR TIMES A MONTH TIMES A WEEK</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STRONG: Very Mild Moderate Very Strong</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**IN THE LAST YEAR I HAVE EXPERIENCED:**

50. **Eczema** (redness, itching and boils on the skin).

   + **NEVER**
   + **HOW OFTEN:** 1 2 3 4 5 6
   + **HOW STRONG:** 1 2 3 4 5 6 7

51. **Hives**

   + **NEVER**
   + **HOW OFTEN:** 1 2 3 4 5 6
   + **HOW STRONG:** 1 2 3 4 5 6 7

52. **Warts**

   + **NEVER**
   + **HOW OFTEN:** 1 2 3 4 5 6
   + **HOW STRONG:** 1 2 3 4 5 6 7

53. **A sty** (pink eye; conjunctivitis).

   + **NEVER**
   + **HOW OFTEN:** 1 2 3 4 5 6
   + **HOW STRONG:** 1 2 3 4 5 6 7

54. **Psoriasis** (sclaly redish patches on the skin).

   + **NEVER**
   + **HOW OFTEN:** 1 2 3 4 5 6
   + **HOW STRONG:** 1 2 3 4 5 6 7

PLEASE GO ON TO THE NEXT PAGE
On the following pages are several statements of illnesses you might have. If you have never developed the illness check the box NEVER. If you developed the illness before you became a teacher, check the box BEFORE I BECAME A TEACHER. If you developed the illness after you became a teacher, check the box AFTER I BECAME A TEACHER.

I HAVE BEEN DIAGNOSED BY A PHYSICIAN AS HAVING:

65. a cardiovascular disorder (heart disease, heart attack, arteriosclerosis, etc.).
   NEVER ....................................................................
   BEFORE I BECAME A TEACHER........................
   AFTER I BECAME A TEACHER.................

66. ulcers.
   NEVER ...................................................
   BEFORE I BECAME A TEACHER..................
   AFTER I BECAME A TEACHER............

67. hypertension (high blood pressure).
   NEVER ..................................................
   BEFORE I BECAME A TEACHER..................
   AFTER I BECAME A TEACHER............

68. colitis.
   NEVER ..................................................
   BEFORE I BECAME A TEACHER..................
   AFTER I BECAME A TEACHER............

69. a kidney disorder or kidney disease.
   NEVER ..................................................
   BEFORE I BECAME A TEACHER..................
   AFTER I BECAME A TEACHER............

70. a benign growth or tumor.
   NEVER ..................................................
   BEFORE I BECAME A TEACHER..................
   AFTER I BECAME A TEACHER............

71. a malignant growth or tumor.
   NEVER ..................................................
   BEFORE I BECAME A TEACHER..................
   AFTER I BECAME A TEACHER............
72. hypotension (low blood pressure).

<table>
<thead>
<tr>
<th></th>
<th>NEVER</th>
<th>BEFORE I BECAME A TEACHER</th>
<th>AFTER I BECAME A TEACHER</th>
</tr>
</thead>
</table>

73. a gall bladder disorder or disease.

<table>
<thead>
<tr>
<th></th>
<th>NEVER</th>
<th>BEFORE I BECAME A TEACHER</th>
<th>AFTER I BECAME A TEACHER</th>
</tr>
</thead>
</table>

74. gastroenteritis or any illness related to the digestive system.

<table>
<thead>
<tr>
<th></th>
<th>NEVER</th>
<th>BEFORE I BECAME A TEACHER</th>
<th>AFTER I BECAME A TEACHER</th>
</tr>
</thead>
</table>

75. migraine headaches.

<table>
<thead>
<tr>
<th></th>
<th>NEVER</th>
<th>BEFORE I BECAME A TEACHER</th>
<th>AFTER I BECAME A TEACHER</th>
</tr>
</thead>
</table>

76. depression.

<table>
<thead>
<tr>
<th></th>
<th>NEVER</th>
<th>BEFORE I BECAME A TEACHER</th>
<th>AFTER I BECAME A TEACHER</th>
</tr>
</thead>
</table>

77. other illnesses you developed AFTER you became a teacher.

____________________________________

____________________________________

HAVE A NICE DAY...
Philip Belcastro  
Ohio State University  
Division of Health Education  
1760 Neil Avenue  
Columbus, Ohio 43210

Dear Mr. Belcastro:

Thank you for your interest in the Maslach Burnout Inventory. You have my permission to use this instrument in your research. The appropriate citation for the MBI is:

Maslach, C., & Jackson, S. E. The measurement of experienced burnout. Unpublished manuscript, University of California, 1979. (Submitted for publication).

Please send me a copy of your final research report, as I would like to be kept informed of new work using our measure.

Sincerely,

Christina Maslach  
Associate Professor

CM/jf
### Table 24: Subscales of Maslach Burnout Inventory

<table>
<thead>
<tr>
<th>Subscales of the Maslach Burnout Inventory</th>
<th>Measurement of Burnout</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Emotional Exhaustion</strong></td>
<td></td>
</tr>
<tr>
<td>1. I feel emotionally drained from my work.</td>
<td></td>
</tr>
<tr>
<td>2. I feel used up at the end of the workday.</td>
<td></td>
</tr>
<tr>
<td>3. I feel fatigued when I get up in the morning and have to face another day on the job.</td>
<td></td>
</tr>
<tr>
<td>9. Working with people all day is really a strain for me.</td>
<td></td>
</tr>
<tr>
<td>10. I feel worn out from my work.</td>
<td></td>
</tr>
<tr>
<td>16. I feel frustrated with my job.</td>
<td></td>
</tr>
<tr>
<td>17. I feel I'm working too hard on my job.</td>
<td></td>
</tr>
<tr>
<td>18. Working directly with people puts too much stress on me.</td>
<td></td>
</tr>
<tr>
<td>23. I feel like I'm at the end of my rope.</td>
<td></td>
</tr>
<tr>
<td><strong>B. Personal Involvement (optional subscale)</strong></td>
<td></td>
</tr>
<tr>
<td>3. I feel similar to my recipients in many ways.</td>
<td></td>
</tr>
<tr>
<td>4. I feel personally involved with my recipients' problems.</td>
<td></td>
</tr>
<tr>
<td>6. I feel uncomfortable about the way I have treated some recipients.</td>
<td></td>
</tr>
<tr>
<td><strong>C. Personal Accomplishment</strong></td>
<td></td>
</tr>
<tr>
<td>7. I can easily understand how my recipients feel about things.</td>
<td></td>
</tr>
<tr>
<td>8. I deal very effectively with the problems of my recipients.</td>
<td></td>
</tr>
<tr>
<td>15. I feel very energetic.</td>
<td></td>
</tr>
<tr>
<td>20. I can easily create a relaxed atmosphere with my recipients.</td>
<td></td>
</tr>
<tr>
<td>21. I feel exhilarated after working closely with my recipients.</td>
<td></td>
</tr>
<tr>
<td>22. I have accomplished many worthwhile things in this job.</td>
<td></td>
</tr>
<tr>
<td>24. In my work, I deal with emotional problems very calmly.</td>
<td></td>
</tr>
</tbody>
</table>
Table 25  
Descriptive Statistics for the Intensity  
Dimension of the Three MBI Subscales for Several Samples

<table>
<thead>
<tr>
<th>MBI Subscales</th>
<th>Emotional Exhaustion</th>
<th>Depersonalization</th>
<th>Personal Accomplishment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Samples</td>
<td>N</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>(433)</td>
<td>3.02</td>
<td>1.46</td>
</tr>
<tr>
<td>Female</td>
<td>(492)</td>
<td>3.61</td>
<td>1.47</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
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<tr>
<td>Caucasian</td>
<td>(818)</td>
<td>3.37</td>
<td>1.48</td>
</tr>
<tr>
<td>Black</td>
<td>(29)</td>
<td>2.76</td>
<td>1.51</td>
</tr>
<tr>
<td>Asian-American</td>
<td>(28)</td>
<td>3.27</td>
<td>1.54</td>
</tr>
<tr>
<td>Other</td>
<td>(47)</td>
<td>3.17</td>
<td>1.63</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17-29</td>
<td>(219)</td>
<td>3.52</td>
<td>1.42</td>
</tr>
<tr>
<td>30-39</td>
<td>(376)</td>
<td>3.48</td>
<td>1.48</td>
</tr>
<tr>
<td>40-49</td>
<td>(162)</td>
<td>3.13</td>
<td>1.39</td>
</tr>
<tr>
<td>50-59</td>
<td>(104)</td>
<td>3.08</td>
<td>1.64</td>
</tr>
<tr>
<td>over 50</td>
<td>(24)</td>
<td>2.49</td>
<td>1.45</td>
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(Continued on the next page........)
<table>
<thead>
<tr>
<th>Marital Status</th>
<th>M</th>
<th>SD</th>
<th>M</th>
<th>SD</th>
<th>M</th>
<th>SD</th>
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<tbody>
<tr>
<td>Single</td>
<td>3.63</td>
<td>1.39</td>
<td>2.14</td>
<td>1.53</td>
<td>5.01</td>
<td>.52</td>
</tr>
<tr>
<td>Married</td>
<td>3.14</td>
<td>1.48</td>
<td>2.17</td>
<td>1.53</td>
<td>5.01</td>
<td>.99</td>
</tr>
<tr>
<td>Divorced</td>
<td>3.74</td>
<td>1.52</td>
<td>2.18</td>
<td>1.60</td>
<td>5.13</td>
<td>.98</td>
</tr>
<tr>
<td>Other</td>
<td>3.46</td>
<td>1.66</td>
<td>1.99</td>
<td>1.73</td>
<td>5.13</td>
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</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>No College</td>
<td>3.59</td>
<td>1.64</td>
<td>2.57</td>
<td>1.90</td>
<td>5.01</td>
<td>.99</td>
</tr>
<tr>
<td>Some College</td>
<td>3.18</td>
<td>1.55</td>
<td>2.69</td>
<td>1.70</td>
<td>4.89</td>
<td>1.07</td>
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<td>Completed</td>
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<td>1.44</td>
<td>2.36</td>
<td>2.54</td>
<td>4.75</td>
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<td>Postgraduate</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Work</td>
<td>3.45</td>
<td>1.45</td>
<td>1.88</td>
<td>1.41</td>
<td>5.13</td>
<td>.89</td>
</tr>
<tr>
<td>Other</td>
<td>2.83</td>
<td>1.52</td>
<td>1.87</td>
<td>1.43</td>
<td>5.26</td>
<td>.92</td>
</tr>
<tr>
<td>TOTAL</td>
<td>M = 3.33</td>
<td>M = 2.13</td>
<td>M = 5.02</td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>SD = 1.51</td>
<td>SD = 1.52</td>
<td>SD = 1.12</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
June 7, 1980

Mr. Michael Gilligan
Diocese of Columbus
Department of Education
197 East Gay Street
Columbus, Ohio 43215

Dear Mr. Gilligan,

Thank you for your support and cooperation in our research efforts concerning teacher stress in your school district. It was truly refreshing to work with a professional who is interested in the quality of education that is provided students. Moreover, I found your active desire to research and address the health needs and concerns of your teachers a most rare trait.

The principals and faculty I met were simply delightful. As I mentioned previously, when the data has been computed (sometime in late July) I will provide you with a copy of the results. At that time and with time permitting, I would like to personally deliver the results to you so that we may have an opportunity to discuss the results.

Yours in health,

Philip A. Belcastro
June 7, 1980

Reverend Daniel Pallay, Principal
St. Charles Preparatory High School
2010 East Broad Street
Columbus, Ohio 43209

Dear Father Pallay,

I would like to thank you and your faculty for your cooperation in our research efforts concerning teacher stress. The preliminary results promise to provide us as well as your school district with some valuable data.

As mentioned previously, when the data has been computed, we will provide Michael Gilligan with a copy of the results.

Yours in health,

[Signature]

Philip A. Belcastro

PAB/ca
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**UNPUBLISHED WORKS**


