

SURVEY OF
ITINERANT TEACHERS OF THE DEAF AND HARD OF HEARING IN
BRITISH COLUMBIA, CANADA

by

CHRISTINE SYBILLA WILLIAMS

B.A., The University of British Columbia, 1989
B.Ed., The University of British Columbia, 1991

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF ARTS

in

THE FACULTY OF GRADUATE STUDIES
Department of Educational Psychology and Special Education

We accept this thesis as conforming
to the required standard

THE UNIVERSITY OF BRITISH COLUMBIA

October 1998

© Christine Sybilla Williams, 1998

In presenting this thesis in partial fulfilment of the requirements for an advanced degree at the University of British Columbia, I agree that the Library shall make it freely available for reference and study. I further agree that permission for extensive copying of this thesis for scholarly purposes may be granted by the head of my department or by his or her representatives. It is understood that copying or publication of this thesis for financial gain shall not be allowed without my written permission.

Department of Educational Psychology and Special Education

The University of British Columbia
Vancouver, Canada

Date October 16, 1998

ABSTRACT

The purpose of this study was to gather information about the demographic variables and responsibilities of British Columbian itinerant teachers of the deaf and hard of hearing, investigate if these teachers experience occupational stress, determine the relationships between these variables and their stress levels, and to determine which manifestations of stress were most prevalent for this population.

Two questionnaires were used in this study: the Teacher Stress Inventory (TSI), which was a standardized measure of stress, and the Itinerant Teacher Questionnaire (ITQ), which was a self-created questionnaire to gather information about demographics and itinerant responsibilities. The survey packages were mailed during the months of May and June 1998, to 92 itinerant teachers of the deaf and hard of hearing in BC, Canada. The response rate was 76% (n=70).

The demographic information and responsibilities of the typical BC itinerant teacher of the deaf and hard of hearing were presented and discussed. This was the first project of its kind in BC to examine these variables, and it has created a database of information for further research and comparisons.

Using the TSI and its norms, it was determined that BC itinerant teachers of the deaf and hard of hearing experience lower levels of stress than American teachers. However, caution should be exercised when comparing BC itinerant teachers to the norms, because the norms were collected from the northeast, mid-Atlantic, and southeastern states of the US.

From the questionnaires and a multiple regression analysis, the predominant sources of stress for these teachers were determined to be: work overload, lack of time, high numbers of personnel worked with, poor ability to have rooms assigned

in a school, poor quality of rooms worked in, weather interference during travel, and poor communication with school personnel.

Using the TSI, emotional (anxious, depressed, etc.) and fatigue (physical exhaustion, weakness, etc.) manifestations of stress were the highest rated symptoms of stress experienced by BC itinerant teachers of the deaf and hard of hearing.

Results, implications, concerns, and suggestions for further study are discussed.

TABLE OF CONTENTS

Abstract	ii
Table of Contents	iv
List of Tables	vii
Acknowledgements	ix
Dedication	x
 <u>Chapter 1: INTRODUCTION</u>	 1
Definition of Terms	2
Inclusion.....	2
Integration	2
Deaf, deaf, and Hard of Hearing	3
Itinerant Teacher of the Deaf and Hard of Hearing	3
Itinerant Service Delivery Model	4
Stress.....	5
Sources of Stress.....	5
Manifestations of Stress	5
Burnout.....	6
Background to the Problem	6
Purpose of the Study.....	8
Research Questions.....	8
Significance of the Study	9
Summary.....	10
 <u>Chapter 2: LITERATURE REVIEW</u>	 12
Stress.....	12
Types of Stress	12
Prevalence of Teacher Stress.....	13
Regular Education Teachers - Sources of Stress, Manifestations, and Demographic Variables	14
Special Education Teachers - Sources of Stress, Manifestations, and Demographic Variables.....	24
Teachers of the Deaf and Hard of Hearing- Sources of Stress, Manifestations, and Demographic Variables.....	31
Itinerant Teachers of the Deaf and Hard of Hearing.....	39
Summary.....	42
 <u>Chapter 3: METHODOLOGY</u>	 49
Research Questions.....	49
Description of Population	50

Instrumentation.....	50
Itinerant Teacher Questionnaire (ITQ).....	50
Teacher Stress Inventory (TSI).....	52
Validity and Reliability of the TSI.....	53
Face Validity.....	53
Factorial Validity.....	53
Content Validity.....	53
Convergent Validity.....	54
Reliability.....	54
Re-analysis.....	55
Scoring the TSI.....	56
Data Collection.....	57
Data Analysis.....	57
Summary.....	59
Chapter 4: RESULTS	61
Demographic Information and Responsibilities of Itinerant Teachers.....	61
Demographic Variables.....	62
Colleagues.....	62
Caseload of the Itinerant Teacher.....	63
Description of Direct Support Students.....	65
Preparation Time and Paperwork.....	66
Mileage and Travel.....	68
Personnel.....	70
Working Space.....	71
Auditory Training Equipment and Services.....	72
Support for Itinerant Teachers.....	74
Demanding Times of the Year.....	75
Teacher Education.....	76
Itinerant Teacher Stress.....	76
Total Stress Score.....	77
Demographic Variables in Relation to Total Stress Scores.....	77
Sources of Stress in Relation to Total Stress Scores.....	80
Teacher Stress Inventory (TSI).....	81
Itinerant Teacher Questionnaire (ITQ).....	83
Multiple Regression Analysis of TSS with Demographic Variables and Sources of	
Stress from the ITQ.....	91
Manifestations of Stress.....	95
Summary.....	98
The Typical BC Itinerant Teacher of the Deaf and Hard of Hearing.....	98
Demographic Characteristics.....	98
Caseload.....	98
Responsibilities.....	99
Mileage and Travel.....	99
Issues.....	100
Sources of Stress Summary.....	100
Manifestations of Stress Summary.....	100

Chapter 5: DISCUSSION AND RECOMMENDATIONS	101
Discussion	101
Assumptions	101
Expectations and Comparisons with the Literature on Stress	101
Total Stress	101
Demographic Variables in Relation to Total Stress Scores	103
Sources of Stress in Relation to Total Stress Scores	110
Teacher Stress Inventory (TSI)	110
Itinerant Teacher Questionnaire (ITQ)	113
Caseload	114
Preparation Time and Paperwork	123
Mileage and Travel	125
Personnel and Working Space	129
Auditory Training Equipment	132
Support for and Role of the Itinerant Teacher	133
Multiple Regression Analysis of the TSS with Demographic Variables and Sources of Stress from the ITQ	136
Manifestations of Stress	138
Limitations of the Study	141
Recommendations	142
Summary	144
 REFERENCES	 146
 APPENDIX A	 151
 APPENDIX B	 153
 APPENDIX C	 158
 APPENDIX D	 162
 APPENDIX E	 165
 APPENDIX F	 172

LIST OF TABLES

1. Percentage of Teachers Assessed as Stressed, Dissatisfied, or Regretful of Their Career Decision	15
2. Summary of the Sources of Stress for Teachers	44
3. Summary of the Manifestations of Stress for Teachers	46
4. Summary of the Demographic Variables for Teachers	47
5. TSI Total Stress Score Ranges by Significance Levels (from p.16, Fimian, 1988)	58
6. TSI Subscale Score Ranges by Significance Levels (from p.18, Fimian, 1988)	58
7. Frequency of Meeting with Colleagues	63
8. Frequency of Hearing Loss as a Percent of Total Direct Caseload Numbers	65
9. Rated Usefulness of the IEP Process	68
10. Frequency of Weather Interference Ratings	69
11. Number of School Personnel Collaborating, Consulting, or Providing Direction For	70
12. Rating of Ability to Have Rooms Assigned	71
13. Rating of Room Quality based on Student and Teacher Needs	71
14. Rating of Repairs by Audiological Services	73
15. Rating of Contact and Support by Audiological Services	74
16. Rating of Parental Support	75
17. Demanding Months of the School Year	75
18. Rating of Teacher Preparedness/Training	76
19. Percentage of Respondents within Significance Levels for TSSs	77
20. TSS Means for Subgroups based on Total Teaching Experience	78
21. TSS Means for Subgroups based on Years Working with Deaf and Hard of Hearing	79
22. TSS Means for Subgroups based on Total Years of Itinerant Teaching	79
23. TSI Sources of Stress Subscale Means	81
24. Percentage of Respondents within Significance Levels	82
25. TSS Means for Subgroups based on Number of Age Groups Taught	83
26. TSS Means for Subgroups based on Students with Other Special Needs	84
27. ANOVA of TSS Means by Mandating Caseload Subgroups	85
28. Post Hoc Comparisons for Mandating Caseloads	85
29. TSS Means for Subgroups based on Interference by Weather	86
30. ANOVA of TSS Means by Subgroups based on Interference by Weather	86
31. Post Hoc Comparisons for Subgroups based on Interference by Weather	86
32. TSS Means for Subgroups based on Communication with School Personnel	87
33. TSS Means for Subgroups based on the Ability to have Rooms Assigned	88
34. ANOVA of TSS Means by Subgroups based on the Ability to have Rooms Assigned	88
35. Post Hoc Comparisons for Subgroups based on the Ability to have Rooms Assigned	88
36. TSS Means for Subgroups based on Ratings of Room Quality	89
37. TSS Means for Subgroups based on Ratings of Parental Support	89
38. TSS Means for Teacher Education Subgroups	90
39. Correlations of TSSs to Demographic Variables and Sources of Stress	92
40. Backwards Multiple Regression of Variables on TSS Scores	94
41. Backwards Multiple Regression of Selected Variables on TSS Scores	95
42. TSI Manifestations of Stress Subscale Means	96
43. Percentage of Respondents within Significance Levels for Manifestations	97

D1. Means of Items on the Teacher Stress Inventory (TSI).....	163
E1. Variable Labels and Descriptions.....	166
E2. Descriptives of <i>Numbers/FTE</i> Subgrouped by Part-time and Full-time FTE Status.....	167
E3. Oneway ANOVAs of <i>Numbers/FTE</i> Subgrouped by Part-time and Full-time FTE Status.....	169
F1. Correlational Matrix of TSSs, Selected ITQ Items, and Number/FTE.....	173

ACKNOWLEDGEMENTS

I wish to acknowledge and express appreciation to the many people who helped make this study possible.

First, I would like to thank the research committee for their guidance and support through the many months of this project. My sincere appreciation to Dr. Perry Leslie, Advisor and Committee Chair, for his time, constructive criticism, and encouragement during all stages of this study. I also wish to thank the committee members, Dr. Janet Jamieson and Dr. Hillel Goelman, for their review, invaluable comments, and advice. In addition, I would like to thank Dr. Cay Holbrook for agreeing to act as the external examiner.

A special thank you to Marion Jobson, research secretary, for the many hours she dedicated in mailing out, following up, collecting, and collating the questionnaires.

I should like to acknowledge the support of the CAEDHH Itinerant Committee, Maureen Clarke, Jillyan Gift, Rick McArter, and Bev McKenna, for their assistance, insightful feedback, and encouragement in the creation of the Itinerant Teacher Questionnaire (ITQ).

In addition, I am grateful to all my colleagues for participating in the study and providing the opportunity to gather information which has furthered our depth and understanding of BC itinerant teachers of the deaf and hard of hearing.

I would also like thank Stephen Williams, my husband, for his endless hours of editing, support, and encouragement as well as his patience and understanding during the many months and holidays spent on this project.

To all of my family and friends for their supportive encouragement, genuine interest, and assistance - THANK YOU!

DEDICATION

I would like to dedicate this paper to Archie Benson, my dad, who suddenly and tragically passed away during the course of this project, for his many years of support, strength, and encouragement.

CHAPTER 1: INTRODUCTION

Today's world has fashioned a unique set of daily challenges for educators that requires them to adapt to a broad range of situations. Teachers today face circumstances in an average workday that would have been unheard of a generation ago...students who arrive at school with complex problems and needs. (McGrath, 1995, p. vvi)

The implementation of Public Law 94-142 (PL 94-142) in the United States has created a changed classroom environment. The most significant change has been the increase of children with special needs integrated into their neighborhood schools. In Canada, PL 94-142 has influenced national and provincial educational policy. The Canadian Charter of Rights and Freedoms and the British Columbia (BC) School Act have guaranteed certain rights with respect to the education of exceptional children, and they have encouraged an increased diversity of children with special needs in schools.

With this increased diversity comes increased demands upon those providing service within the educational system (Kyriacou & Sutcliffe, 1977; Weiskopf, 1980), and how an individual responds to these increased demands is as diverse as the children within the school setting. In many instances, these increased demands result in increased stress levels for those individuals working in schools. Initial research by Dunham (1976) and Kyriacou & Sutcliffe (1977) drew attention to the prevalence of stress among school teachers.

Since 1977 there has been a significant amount of research analyzing the stress of educators within the typical classroom setting (Cedoline, 1982; Cole & Walker, 1989; Dunham, 1992; Hiebert, 1985) and the stress of special education teachers based in schools (Fimian, 1982; Retish, 1986; Weiskopf, 1980). However, little

research has examined special education teachers working with Deaf, deaf, and hard of hearing students. Only six articles specifically address stress for teachers working with Deaf, deaf, and hard of hearing children (Johnson & Harkins, 1984; Lewis, 1983; Luckner, 1989, 1990; McNeill & Jordan, 1993; Meadow, 1981), and no research has examined the stress levels of itinerant teachers who provide support to the diverse needs of Deaf, deaf, and hard of hearing children located in their neighborhood schools.

Definition of Terms

Inclusion

Inclusion is the value system which holds that all students are entitled to equitable access to learning, achievement and the pursuit of excellence in all aspects of their education. The practice of inclusion transcends the idea of physical location, and incorporates basic values that promote participation, friendship and interaction. Inclusion is present-day philosophy in the field of education. (BC Ministry of Education, 1994, p.7)

The goal of inclusion is to empower all learners and provide the most enabling educational environment.

Integration

Integration is one of the major strategies used to achieve an inclusive philosophy. Integration sees students with special needs included in educational settings with their peers, who do not have special needs, and provided with the necessary accommodations, determined on an individual basis, to enable them to be successful there. The principle of "placement in the most enabling learning environment" applies when decisions are made about the extent to which an individual student is placed in regular classrooms, or assigned to an alternate placement. (BC Ministry of Education, 1994, p. 7)

Policies of the Ministry of Education encourage a child with special needs to attend his/her neighborhood school to be among age-appropriate peers. The amount of

time that a child with special needs is integrated with age-appropriate peers depends on the decisions of the family and educational team at the school.

Deaf, deaf, hard of hearing

A person who experiences a hearing loss can be categorized as Deaf, deaf, or hard of hearing. The categorization depends on the individual's ability to use residual hearing and any amplification.

The use of the capitalized *Deaf* refers to an individual who considers himself a member of the Deaf culture and communicates with American Sign Language (ASL), regardless of his ability to process oral language or benefit from amplification. "The upper-case "D" is significant: it serves as a succinct proclamation that the deaf share a culture rather than merely a medical condition" (Dolnick, 1993, p. 37).

A *deaf* (lower case "d") "is one whose hearing [loss] precludes successful processing of linguistic information through audition with or without a hearing aid" (Conference of Executives of American Schools for the Deaf, 1975, p. 509).

A *hard of hearing* person "is one who, generally with the use of a hearing aid, has residual hearing sufficient to enable successful processing of linguistic information through audition" (Conference of Executives of American Schools for the Deaf, 1975, p.509).

Itinerant Teacher of the Deaf and Hard of Hearing

The BC Ministry of Education defines a qualified teacher of the deaf and hard of hearing as one with:

- a valid BC Teaching Certificate; and

- certification, or eligibility for certification, by the Canadian Association of Educators of the Deaf and Hard of Hearing (CAEDHH) (BC Ministry of Education, 1994).

Teachers of the deaf and hard of hearing provide educational instruction, support, and advocacy for the Deaf, deaf, and hard of hearing students throughout the province of BC. These teachers provide services within a variety of models, namely Provincial Programs, Resource Rooms, and Itinerant support. Most deaf and hard of hearing students within the province of BC receive services from an itinerant teacher. There are approximately 95 itinerant teachers employed by public school districts within the province.

The main function of the itinerant teacher of the deaf and hard of hearing, as prescribed by the BC Ministry of Education, is to ensure that the needs of students with hearing losses are being met, so that they may function effectively in their neighborhood schools (BC Ministry of Education, 1994).

Itinerant Service Delivery Model

The Deaf, deaf, and hard of hearing students are classified as receiving either *direct* or *consultative* support according to: the nature and severity of their hearing loss, history of intervention, need and benefit from intervention, academic standing and caseload priorities (BC Ministry of Education, 1994).

Direct itinerant services are provided for student whose hearing loss is affecting their education and who do need intervention on a regular, frequent, and ongoing basis.

Consultative services are provided for students whose hearing loss is not adversely affecting their education and who do not need direct service. The teacher of the deaf and hard of hearing monitors these students.

Stress

Of the many ways stress has been defined, the author has chosen to use the definition developed by Hiebert (1985). Stress is a "complex psychological and physiological reaction to a situation that approaches or exceeds a person's self-perceived ability to cope with that situation" (p. 14).

Sources of Stress

Sources of stress are factors that can be personal or environmental which cause stress for an individual (Hiebert, 1985). Some examples relevant to teachers are overcommitment, too much work to do, large caseloads or class size, administrative paperwork, lack of recognition for extra work and good teaching, student discipline and motivation problems, lack of control over decisions, not emotionally or intellectually stimulated on the job, and lack opportunities for professional improvement (Fimian, 1988).

Manifestations of Stress

Manifestations of stress are typically the symptoms of stress. The manifestations of stress "most often refer to adverse emotional and behavioral changes in the individual" (Fimian, 1982, p. 103). Examples include such things as feeling anxious or insecure, procrastinating, increased blood pressure, or using drugs.

Burnout

Both the media and professional literature have often equated or confused stress and burnout. Though the two concepts are very similar, they are not identical.

"Burnout is more often the result not of stress per se ...but of *unmediated stress* - of being stressed and having no 'out,' no buffers, no support system" (Farber, 1991, p.30). "Burnout is better regarded as the final step in a progression of unsuccessful attempts to cope with a variety of negative stress conditions" (Farber, 1991, p. 32).

"Nevertheless, while stress and burnout are theoretically distinct phenomena, in the absence of empirical data or extensive observational reports they are *practically* difficult to distinguish. Indeed, there is a good deal of overlap" (Farber, 1991, p. 32). Therefore, when studying stress one must also examine the literature on burnout as the two are intertwined.

Background to the Problem

Dunham (1976) concluded that regular education teachers experienced severe levels of occupational stress. These findings led to increased interest and research in examining this topic (i.e., Cedoline, 1982; Cichon & Koff, 1980; Cole & Walker, 1989; Dunham, 1992; Farber, 1991; Hiebert, 1985). From these findings, further investigation determined that special education teachers experienced as much or more stress than regular education teachers (i.e., Farber, 1991; Fimian & Santoro, 1983; Retish, 1986; Weiskopf, 1980; Zabel & Zabel 1982). Special education teachers working with Deaf, deaf, and hard of hearing students also experience high levels of stress (Johnson & Harkins, 1984; Lewis, 1983; Luckner, 1989, 1990; McNeill & Jordan, 1993; Meadow, 1981). The nature of stress for teachers working with Deaf, deaf, and hard of hearing students can be attributed to "the challenges

of individualizing educational plans, lack of materials, completing paperwork, working with other professionals, insufficient administrative support, meeting timelines, little recognition, and dealing with behavior problems" (Luckner, 1990, p. 4; see also Lewis, 1983). It seems apparent that these stressful responsibilities would be amplified for itinerant teachers, who travel from school to school to provide educational service for Deaf, deaf, and hard of hearing students. However, no studies to date have specifically examined this topic.

Recent educational policy may contribute to the level of stress for itinerant teachers. The BC Ministry of Education has stated that students who are considered to be Deaf, deaf, or hard of hearing and experiencing substantial educational difficulty (as a result of their hearing loss) have the right to access direct services from a qualified teacher of the deaf and hard of hearing (BC Ministry of Education, 1994). At the same time, the Ministry has required increased documentation (i.e., Individual Education Plans, Supplementary Reports) to account for services provided to Deaf, deaf, and hard of hearing students. This paperwork must be in place in order for school districts to receive funding for these students. Districts are also faced with reduced funding, in general. The pressure from school districts as well as these increased demands from the Ministry may contribute to the stress level of teachers of the deaf and hard of hearing.

Within most districts in BC, the teacher of the deaf and hard of hearing is an itinerant teacher providing direct or consultative services to students within the district. In 1998, there were approximately 95 itinerant teachers in BC working with Deaf, deaf, and hard of hearing students. Concern for the stress level of itinerant teachers has been voiced by many itinerant teachers throughout the province. One teacher, in a recent letter to a professional organization, wrote that

establishing "realistic caseload sizes...could help address the issue of stress and burnout for Itinerant Teachers of the Deaf and Hard of Hearing" (Tylka, 1997, p.15). Recently, a committee of itinerant teachers was convened to examine this issue.

Purpose of the Study

The purpose of this study was to gather demographic information and the range of special responsibilities of itinerant teachers of the deaf and hard of hearing, determine whether these teachers experience occupational stress, and investigate the relationships between these variables and stress levels of these itinerant teachers, who are providing direct or consultative services to Deaf, deaf, and hard of hearing students within the neighborhood school setting.

Research Questions

This research project was an attempt to identify and answer the following research questions.

1. What are the:
 - a) averages and ranges of demographic variables of the BC itinerant teachers of the deaf and hard of hearing?
 - b) averages and ranges of responsibilities for BC itinerant teachers of the deaf and hard of hearing?
2. To what extent do itinerant teachers of the deaf and hard of hearing experience job-related stress as compared to norms of regular and special educators?

3. a) What are the relationships between their demographic variables and their stress levels?
b) What are the relationships between their responsibilities and their stress levels?
4. To what extent do BC itinerant teachers of the deaf and hard of hearing exhibit manifestations of stress as compared to the norms of educators?

Significance of the Study

The results of this province wide study identified some sources and manifestations of stress for BC itinerant teachers of the deaf and hard of hearing. This information will be important for a variety of groups: itinerant teachers of the deaf and hard of hearing, supervisors of itinerant teachers of the deaf and hard of hearing, BC Ministry of Education, BC Teacher's Federation, the academic community, and instructors of teacher preparation programs training teachers of the deaf and hard of hearing.

Itinerant teachers themselves could benefit from this project by allowing them the opportunity to recognize their level of stress and how stress may be manifested. The findings from this study will also be shared with the itinerant teachers committee which is examining caseloads throughout the province.

Supervisors of itinerant teachers of the deaf and hard of hearing may also benefit from the results of this research. They could recognize what is stressful for their teachers, how it can be manifested, and how they can assist to prevent or alleviate it.

The BC Ministry of Education and BC Teacher's Federation could also benefit from this research project. They would be provided with the opportunity to

examine the results and consider them when creating or altering the provincial policies, guidelines, and collective agreements with regards to itinerant services for deaf and hard of hearing students attending their neighborhood schools (i.e., caseload, delivery model, funding formula).

The academic community could also benefit from the results of this research project. This unique group of teachers working with deaf and hard of hearing students has not been examined through a standardized assessment tool.

Finally, teacher preparation programs which train teachers of the deaf and hard of hearing could also benefit from the project results. The preparation programs could have the ability to better educate their students about the sources and manifestations of stress for itinerant teachers and learn from itinerant teachers what was the best preparation for their position.

Summary

Studies reported that occupational stress is a valid concern for teachers in a variety of settings. Though many studies have examined the stress levels of regular and special educators, few have examined the stress levels of teachers of the deaf and hard of hearing. No research to date has examined the stress levels of itinerant teachers of the deaf and hard of hearing.

The purpose of this study was to investigate and provide insight into the levels, sources, and manifestations of stress for BC itinerant teachers and describe demographic characteristics and responsibilities of these teachers.

The data from the project may be useful for a variety of groups: itinerant teachers of the deaf and hard of hearing and their supervisors, the BC Ministry of

Education, the BC Teacher's Federation, the academic community, and teacher preparation programs.

CHAPTER 2: LITERATURE REVIEW

Stress

While the general conception of stress is clear and it "is common to the human condition" (Cichon & Koff, 1980, p. 91), "stress has been defined in various ways and the nature of the definition influences the conclusions one draws concerning how people become stressed and how stress should be controlled" (Hiebert, 1985, p. 11). Historically stress has been defined in three ways:

1. Environmental (stimulus event) - pressure is exerted by the environment on an individual (Kyriacou & Sutcliffe, 1978; Hiebert, 1985),
2. Individual Response - something that happens within the individual (Kyriacou & Sutcliffe, 1978; Hiebert, 1985), and
3. Interactional Model - a combination of the environment and the individual (Hiebert, 1985).

For this project, the *Interactional Model* will be used to define stress. From this perspective, "stress is an individual's psychological and physiological response to a situation that approaches or exceeds the person's perceived ability to cope with that situation" (Hiebert, 1985, p.11). Therefore, this project will study the sources of stress (environmental), the demographic characteristics of the individual, and the manifestations of stress (psychological and physiological responses to stress).

Types of Stress

Hiebert (1985) divided stress into two stages. The initial stage 'transitory' stress, refers to a "brief elicitation of the stress response, whereas 'chronic' stress refers to a more enduring state" (p. 15). Typically, an individual encounters transitory

stress on a daily basis and usually "handles the situation and returns to normal with few negative side effects and minimum health hazard. However, if the stress response is elicited frequently, or if the duration of the response is prolonged, a state of hypermobilization is sustained. This is chronic stress" (p. 15). In this latter stage, a variety of negative physical characteristics (i.e., high blood pressure, dysfunctional cognitive activity, headaches, cardiovascular disorders, muscle tension, flus, colds) may be manifested. What Hiebert (1985) terms chronic stress can be equated with Faber's (1991) definition of burnout, "the final step in a progression of unsuccessful attempts to cope with a variety of negative stress conditions" (Farber, 1991, p. 32).

Prevalence of Teacher Stress

Research has consistently demonstrated that people within helping professions have significantly higher levels of stress, and some research has claimed that those within the teaching profession have the greatest vulnerability to experience stress (Gold & Roth, 1993). "Teachers and teaching have been subjected to unrelenting criticism over the past three decades. What this has failed to recognize is the increasing complexity and responsibility of educating our children and youth" (Gold & Roth, 1993, p. vii).

"Teaching will always be inherently stressful and ... the radical changes in the education system currently occurring are likely, on balance, to increase rather than reduce levels of stress" (Cole & Walker, 1989, p. xi). With increased diversity and need within the student population, today's classroom is significantly different than that of the 1960's.

Farber (1991) analyzed the prevalence of teacher stress by reviewing the American literature concerning stress (see Table 1). Farber concluded that, depending on the sample and the time of assessment, between 5 - 20% of American teachers experience burnout at any given time, and another 30 - 35% are strongly dissatisfied with the teaching profession.

Regular Education Teachers - Sources of Stress, Manifestations, and Demographic Variables

Over one hundred articles have been published concerning the sources of stress for regular education teachers, who teach within the typical classroom setting. The purpose of this section is to summarize some of the most relevant publications.

Teacher stress began as a topic of discussion and examination in the mid 1930's, when Hans Seyle, one of the pioneers in the field, first proposed a specific definition for stress. Since the 1930's there has been a large amount of research and many articles and books which have examined the stress of educators who teach within the typical classroom setting (i.e., Cedoline, 1982; Cichon & Koff, 1980; Cole & Walker, 1989; Dunham, 1992; Farber, 1991; Hiebert, 1985).

In 1980, Cichon and Koff investigated the magnitude of the sources of stress experienced by 4934 educators, in the Chicago Teachers Union, teaching typical students in both elementary and secondary schools. They believed stress greatly interfered with the successful performance of those working within helping

Table 1
Percentage of Teachers Assessed as Stressed, Dissatisfied, or Regretful of Their Career Decision

<i>Study</i>	<i>Sample</i>	<i>Variable</i>	<i>Percentage</i>
Birmingham (1984)	319 (Minnesota)	•satisfaction	58% dissatisfied; 81% of middle school teachers dissatisfied
Broiles (1982)	314 (California)	•stress	33%: work very/extremely stressful
Brown (1983)	271 (Missouri)	•stress	53%: work decidedly/extremely stressful
Carnegie Foundation (1988)	2,000 (nationwide)	•satisfaction	25% dissatisfied
Farber (1984)	693 (New York)	•choosing teaching again?	55.5% no (urban) 47.5% no (suburban)
Feistritzer (1985)	1,592 (nationwide)	•satisfaction	16% dissatisfied
Feitler and Tokar (1981)	3,789 (Ohio, Pennsylvania)	•stress	16.5% work very/extremely stressful
Fiske (1982)	5,702 (New York)	•choosing teaching again?	47% no (overall); 55% no (New York City); 35% no (suburbs)
Goodlad (1984)	1,350 (nationwide)	•choosing teaching again? •career expectations fulfilled?	31% no 26% no
Harris and Associates (1987)	1,002 (nationwide)	•satisfaction •leave teaching	14% somewhat/very dissatisfied 52% have considered it 23% likely within five years
Harris and Associates (1988)	1,208 (nationwide)	•satisfaction •leave teaching	13% somewhat/very dissatisfied 26% likely within five years
Kottkamp, Provenzo, & Cohn (1986)	2,700 (Florida)	•job satisfaction •school satisf.	13.1% dissatisfied 20.1% dissatisfied
Moracco, D'Arienzo, & Danford (1983)	691 (a middle Atlantic state)	•choose teaching again?	52% no
National Education Association (1979)	1,738	•choose teaching again? •satisfaction	41% probably not/no 44% dissatisfied/very dissatisfied

Note. From Crises in education: Stress and burnout in the American teacher (p. 43), by B. A. Farber, 1991, San Francisco: Jossey-Bass Publishers. Copyright 1991 by Jossey-Bass Inc., Publishers. Reprinted with permission.

professions. For an instrument, Cichon and Koff used a modified Social Readjustment Rating Scale (Holmes & Rahe, 1967), which they called the Teaching Stress Events Inventory (TSEI). The TSEI contained 36 statements or events, which were believed to be sources of stress for teachers. Teachers were asked to rate each statement on a scale of 1-100, with 50 being equal to the first week of school. The TSEI was developed by committee, based on research, and pilot-tested on 176 teachers. Cichon and Koff also asked two closed questions about the manifestations of stress: (1) Have you experienced any physical illness that you feel is related to stress in your work? (2) Have you experienced any mental illness that you feel is related to stress in your work? Demographic characteristics (sex, marital status, age, race, type of school, school size, and days off for illness) were also collected and analyzed.

The results from the TSEI indicated that this sample of teachers were most concerned about student discipline, violence, and "management tension" (p.99).

The top thirteen rankings were:

- (1) involuntarily transferred (\bar{x} =73.05),
- (2) managing "disruptive" children (\bar{x} =66.13),
- (3) notification of unsatisfactory performance (\bar{x} =62.67),
- (4) threatened with personal injury (\bar{x} =60.76),
- (5) overcrowded classroom (\bar{x} =57.52),
- (6) lack of availability of books and supplies (\bar{x} =55.93),
- (7) colleague assaulted in school (\bar{x} =54.72),
- (8) reorganization of classes or program (\bar{x} =54.03),
- (9) implementing board of education curriculum goals (\bar{x} =52.76),
- (10) denial of promotion or advancement (\bar{x} =52.45),

- (11) target of verbal abuse by student (\bar{x} =51.97),
- (12) disagreement with supervisor (\bar{x} =50.73), and
- (13) the first week of the school year (\bar{x} =50.00).

Some of these were likely attributable to the urban setting of the sample (i.e., violence) and district reorganization (i.e., management tension items such as *involuntarily transferred* and *reorganization of classes or programs*), so caution must be used when generalizing the results. Also, the authors stated that the instrument (TSEI) was based on research, but they referenced only one source. Nonetheless, some of the other items on the TSEI seem relevant for sources of stress for teachers (rank in parentheses): (15) teaching students who are below average in achievement level, (16) maintaining student personnel and achievement records, (19) change in duties/work responsibilities, (22) disagreement with another teacher, (24) teaching physically or mentally handicapped children, (29) evaluating student performance, (31) attendance at inservice meetings, (32) taking additional course work for promotion, (33) talking to parents about their child's problems, and (34) dealing with students whose primary language is not English.

The results from the manifestation analysis found that more than half the respondents (56%) said they experienced physical illness related to their work and about one-quarter (26.4%) of the teachers indicated they experienced mental illness related to their work. These results suggested that stress was a significant issue affecting the teachers within the sample.

Demographic characteristics of the sample were studied using discriminant function analysis, and they found no significant differences among any of the subgroups of each characteristic.

In 1982, Anthony Cedoline summarized the American literature on stress in a book called *Job Burnout in Public Education*. In a chapter entitled *Teacher Burnout*, he identified a number of factors which contribute to teacher stress, namely (no rank order): student discipline/behaviour, low involvement in important decisions, poor supervision/evaluation practices, limited feedback, higher class sizes, student diversity, work overload, number and quality of personal contacts, role conflicts (i.e., general lesson plans neglecting individual differences or avoiding/including moral education, etc.), poor teacher education, and a lack of professional development. Most of these factors are substantiated with references, but some are backed with anecdotal or informal surveys.

In another chapter, Cedoline examined the manifestations of stress by describing the symptoms of job burnout. He noted that most symptoms were progressive, starting with small irritations which could grow into debilitating medical conditions. He organized the symptoms into five categories:

1. Physical symptoms - fatigue/exhaustion, tenseness of muscles and physical ailments (neck, lower back, headache, stomach problems, tremors), accident proneness, high blood pressure, use of drugs and alcohol, and heart disease,
2. Intellectual symptoms - poor decision making, inability to process information, time distress, and obsessive thinking about work,
3. Social symptoms - marriage to the job, social withdrawal, complains/cynicism, decreased effectiveness, malicious humor, strained relations at home, and social isolation,
4. Psycho-emotional symptoms - denial or blame, anger, depression, paranoia, dehumanization/detachment, self-deprecation, and stubbornness, and
5. Spiritual symptoms - reduced production, decreased quality of work, absenteeism, vandalism, and pilferage.

Cedoline further explained that the "[s]ymptoms of serious job burnout almost always included physical and emotional exhaustion, socially dysfunctional behavior, strong negative feelings towards oneself and the work place, and organizational disruption or inefficiency" (p. 38). Two major faults that prevent one from accepting Cedoline's work were again his lack of citations and his broad scope of research (outside of education). Later, in his chapter summary, he wrote that teachers "usually display some or all of these symptoms: fatigue, cynicism, negativism, apathy, rigidity, self-defeat, depression, overload, suspicion, and decreased effectiveness" (p.38), but he did not substantiate these findings.

Cedoline mentioned demographic variables in a section he called non-organizational causes in the chapter *Major Causes of Occupational Stress and Job Burnout*. In this chapter, he summarized four studies that found differences between the sexes, with women generally having higher levels of stress. Other demographic factors included were marital status (happily married people were less stressed), socioeconomic status (unemployed and poor had high stress), urban/rural (urban more stressed), and personality type (type A were significantly more subject to heart attacks).

A Canadian Education Association report written by Hiebert (1985) presented summaries of research completed on teacher stress in Canada. Hiebert discovered that "there were many Canadian researchers engaged in the difficult yet important task of trying to understand the ramifications of the widespread reports of teacher stress, the impact that such reports are having on teachers, and the best available alternatives for controlling teacher stress" (p. 8). Hiebert requested information from provincial teacher and trustee groups, faculties of education, other educational organizations, and researchers working with teacher stress. The report compiled

information, grouped it according to common findings, and ranked the most prevalent stressful concerns for teachers.

Though there was much variation, the concerns, in approximate order, were: classroom management (student behaviour), time management (work overload), role-related problems (dealing with colleagues, administrators, and parents) and difficulties arising from present political or economic conditions.

When Hiebert reviewed the manifestations of stress, he found "little explicit evidence addressing this question" (p.49). Generally teachers reported the same symptoms as other occupations. Some studies reported low morale, lowered satisfaction, and increased absenteeism, yet other studies produced contradictory findings.

The demographic variables examined suggested no definite pattern. Hiebert wrote "it is probably safest to conclude that there are few, if any, reliable demographic differences in levels or sources of stress among different groups of teachers" (p. 28). Some studies found no significant differences for sex, age, experience, level taught, marital status, school size, rural/urban, or teacher education. Other studies found significant differences between subgroups but for opposite subgroups. Hiebert concluded "one needs to determine the specific stress-related characteristics of a particular sample rather than assume any specific characteristics based on past research findings" (p.28).

In another study, Cole and Walker (1989) collated a collection of British articles from a variety of researchers examining stress, through anecdotal and empirical analysis. In a research summary, one of the contributors to Cole and Walker's book, Jose Esteve (1989), indicated three important factors that have a direct effect on the teacher in the classroom: lack of materials and poor working conditions,

increasing school violence, and increasing demands. Jose referenced sources but provided no empirical data to support these factors. He did not examine manifestations of stress or demographic variables.

Kyriacou (1989), another contributor to Cole and Walker (1989), identified some major sources of stress: poor student motivation, student discipline problems, poor working conditions, time pressures, low status of teachers in society, and conflicts with colleagues. These sources of stress were derived from a number of articles, but no new data were provided. Concerning the manifestations of stress, Kyriacou only writes that "[w]hile there is much evidence that stress at work appears to be implicated in the ill-health of many teachers, the relationship between occupational stress and subsequent ill-health is a complex one" (p.29). At the end of his summary, Kyriacou mentions just one demographic variable, type of school. He suggests there are surprisingly few differences in the major types of stress experienced among teachers working in primary, secondary, and special schools.

In another American literature summary concerning teacher stress and burnout, Farber (1991) examined the sources and manifestations of stress as well as demographic variables. His book synthesized hundreds of articles.

In one chapter, Farber extensively described many sources of stress. Though he did not discuss which seemed more important, Farber mentioned these sources (in no rank order): student violence, student discipline, student apathy, controlling oneself when angry (with students), administrative insensitivity, bureaucratic incompetence, unreasonable or unconcerned parents, public criticism, overcrowded classrooms or large caseloads, mainstreamed students with special needs, public demands for accountability, excessive paperwork, loss of autonomy, loss of sense of professionalism, inadequate salaries, lack of promotional opportunities, isolation

from other adults, lack of psychological sense of community, inadequate preparation, complaints regarding the physical plant, role ambiguity, role conflict, and role overload.

In another chapter on the manifestations of teacher stress, Farber wrote:

Teachers burn out in different ways and for different reasons; thus it is difficult to generate a single, universal description of the etiology and symptoms of the disorder. In general, though, teachers who are burned out feel emotionally and/or physically exhausted and are often irritable, anxious, angry, or sad; furthermore, the emotional frustrations attendant to this phenomenon may lead to psychosomatic symptoms (for example, insomnia, ulcers, headaches, hypertension), alcohol or substance abuse, and increased family and social conflicts. Being burned out may mean planning classes less often or less carefully, teaching classes less enthusiastically and creatively, staying home from work more often, feeling less sympathetic toward students and less optimistic about their future, getting frustrated easily by classroom disturbances or lack of student progress, maintaining a greater distance from students, feeling more hostile toward administrators and parents, harboring a cynical view of the profession, viewing oneself in self-deprecating terms, regretting the decision to enter teaching, and fantasizing about (or actually planning on) leaving the profession. (p. 72-73)

Farber organized these manifestations into three categories: *physical and psychological symptoms* (emotional and physical exhaustion, anxiety, and somatic symptoms such as abdominal pain, headaches, nausea, breathing difficulty, rapid heartbeat, dizziness, hypertension, gastrointestinal problems, and drug and alcohol problems), *interpersonal problems* (strained relationships with family and friends), and *professional effects* (less involvement with students, cynical views, thoughts of leaving teaching, and negatively affecting school climate).

Farber also included a number of demographic variables in his analysis. The variables studied include gender (males more stressed), age (under 40 years more stressed), level taught (junior high, middle, or senior high teachers more stressed),

marital status (being single more stressed), size of school (large school more stressful), class size/caseload (larger more stressful), and geographic location (urban more stressful).

Although Farber's work added to our understanding of the sources, manifestations, and demographic variables concerned with stress, he did not provide empirical evidence or statistical analyses to substantiate his findings. Also, much of the new information he provided was anecdotal, from interviews, or from case studies, thus generalizability is low. However, his book was a good summary of the research on stress and teaching.

Dunham's book (1992) provided anecdotal insight, mixed with empirical evaluations, into the heavy pressures responsible for the development of behavioural, emotional, mental, and physical reactions among teachers. Dunham completed survey research analyzing the stress of teachers working in comprehensive schools in the United Kingdom. He initially investigated and reported on three schools (published in 1984), and then he completed further investigations of two additional schools (studies conducted in 1989, 1990). Dunham asked teachers to complete informal surveys and interviews and then analyzed the data. The major sources of stress he identified, in approximate order, were: *role conflict problems* (contradictory expectations, having to play different roles, etc.), *role ambiguity* (lack of clarity of responsibilities, lack of information required to perform tasks adequately, etc.), and *poor working conditions*, which he divided into physical (lack of space, noise levels, travelling between sites, etc.), financial (lack of equipment/resources, low pay, etc.), and organizational (poor communication, frustrating staff relationships, poor cooperation, conflict between departments and/or teams, etc.). He also identified the prevalence of thirty-one manifestations of

stress. The top ten manifestations were: exhaustion, frustration, irritability, wanting to leave teaching, reduction of contacts with people outside of school, apathy, displaced aggression (on to students, colleagues, or others), loss of sleep, anxiety, and strong feelings of being unable to cope. However, Dunham did not mention how his list of manifestations was developed. Though this book provides insight into sources of stress for teachers, it can be more accurately described as case study research, so generalizability is low. Also, he did not provide statistical analyses of the data nor analyze demographic variables.

Special Education Teachers - Sources of Stress, Manifestations, and Demographic Variables

There has also been a considerable amount of research, articles, and books written examining the stress of special education teachers based in schools (i.e., Farber, 1991; Fimian & Santoro, 1983; Retish, 1986; Weiskopf, 1980; Zabel & Zabel 1982).

Weiskopf (1980) applied some literature findings on sources and manifestations of stress to special education teachers. She did not examine demographic variables. In her review of the literature, she developed six major categories of environmental sources of stress: work overload (creating IEPs, meetings, planning, implementing IEPs), lack of perceived success (lack of progress, feelings of failure), amount of direct contact with children, staff-child ratio (high number of students), unstructured program, and responsibility for others (especially providing emotional support). She also hypothesizes that other sources of stress may be particular to the field of special education: lack of administrative support, mislabeling of special students, resistant parents, confused co-workers, and ill-trained aides.

In describing the manifestations of stress, Weiskopf stated that initially the teacher may begin to have only a vague feeling of personal distress. Then, feelings of fatigue, irritability, mild depression, and overwork may surface. Next, "the burnout victim begins to limit social contact and withdraws from people and activities" (p. 21), missing meetings, eating lunch alone, skipping breaks, and leaving school early or late. Later, more serious problems can emerge, such as alcohol or drug abuse, absenteeism, marital conflict, mental illness, depression, and excessive smoking. "It should be noted that these symptoms may be related to a combination of personal problems. However, job stress imposes itself upon all aspects of a person's life, consequently damaging that person's health and well-being" (p. 21).

However, one must use caution when accepting the reliability and validity of Weiskopf's findings. The article relied on just fifteen references, provided no statistical data to support these findings, and was not critical of any of these references. Moreover, most of the references were not specific to special education; they generally referred to "professionals in the helping professions such as physicians, child care workers, psychiatrists in mental hospitals, clinical psychologists, nurses, and social welfare workers" (p. 19). Therefore, generalizability may also be low.

Zabel and Zabel (1982) analyzed the data from a wide cross-section of Kansas special educators ($n=601$), who taught a variety of students (Zabel & Zabel's labels): learning disabled, educable mentally retarded, trainable mentally retarded, emotionally disordered, gifted, visually impaired, hearing impaired, and multiple/severely handicapped. Although they did not study the sources of stress, they did collect data on manifestations of stress (emotional exhaustion,

depersonalization, and personal accomplishment) and a number of demographic variables (age, teaching experience, qualifications, levels taught, labels and numbers of students, program delivery models, length of work week, opportunities for time away from students, and ratings of support from administration, colleagues, and parents). The educators were requested to complete a questionnaire, containing demographic information, as well as complete the *Maslach Burnout Inventory*, a "reliable and valid measure of the experience of emotional exhaustion, depersonalization, and personal accomplishment (Maslach & Jackson, 1979)" (p. 262). They then examined the relationships between three major independent variables (level taught, model of service delivery, and label of students taught) and the three independent variables of emotional exhaustion (EE), depersonalization (DP), and personal accomplishment (PA).

Zabel and Zabel's results indicated that junior high teachers were at the greatest risk for burnout, because their mean scores were highest on the EE and DP scales and lowest on the PA. Preschool teachers rated highest on the PA, though they also reported "relatively high levels of EE" (p. 262).

Special education teachers who taught students with emotional disorders reported the greatest amount of stress, though the data were not provided. Teachers of the deaf and hard of hearing also reported relatively high levels of EE, but less DP and greater PA.

Among service delivery models, consulting teachers reported the greatest EE and DP. Consulting teachers often find themselves in the demanding role of serving large geographical areas and numbers of students and meeting the high expectations of others. Itinerant teachers fared better, scoring lowest on EE and DP. Unlike consulting teachers, they primarily work directly with students and are not expected to provide services to students, teachers, and administrators alike. (p. 262).

Two other demographic variables which were found to be significantly related to the burnout measures were age and experience. "The older the teachers, the less EE and DP and greater sense of PA. Likewise, the more regular and special teaching experience, the lower the EE and DP" (p. 262). "Finally, ratings of support from administrators, fellow teachers, and parents were significantly correlated with the burnout measures. Teachers who perceived external support reported less EE and DP and greater PA" (p.262).

One major limitation of Zabel and Zabel's study is the lack of empirical data included in their report. Though they did indicate that a more complete discussion exists, this made the interpretation of their results difficult. They also used words, such as significantly, but did not define their terms. In addition, they did not provide the rating scale used for their questionnaire. Another major criticism is that they did not provide categories (i.e., for levels taught) for many demographic variables, and they did not define the categories they did provide. For example, from an interpretation of their results, it seems that itinerant teachers in Kansas do not service large geographic areas and large numbers of students or deal with the high expectations of others, like consulting teachers in Kansas do. Yet, in BC, the responsibilities of itinerant teachers of the deaf and hard of hearing may include all of these within their job description. Therefore, more definitions of terms would help in the critical analysis of the results.

Fimian and Santoro (1983) studied a sample 365 full-time special education teachers in Connecticut. Though they did not collect demographic information, they did collect data on the subjects' sources and manifestations of stress, using a questionnaire, and on the subjects' stress levels using the Teacher Stress Inventory (TSI, which is described more fully in the Methodology chapter). On the

questionnaire, teachers rated the strength and frequency of 25 sources and 38 manifestations of stress.

In no rank order, the sources of stress these special education teachers strongly and frequently expressed were: excessive time demands or work overload, inadequate training, lack of recognition, inadequate salaries, pupil behavior, poorly motivated students, inadequate school discipline policies, large caseloads, diversity of student achievement, isolation, and poor administration. Using the TSI results, the subjects were divided into three groups: low-stress ($n=58$), moderate-stress ($n=250$), high-stress ($n=57$). One-way analyses of variance were performed on the sources of stress means across the three teacher groups, and the three teacher groups responded significantly differently ($p<.1$ or $p<.01$) to the sources of stress. That is, "high stress teachers reported significantly more frequent and significantly stronger sources of stress than did all other teachers, including those in the moderate-stress group" (p. 541).

In addition to the sources of stress, Fimian and Santoro documented emotional, behavioral, and physiological manifestations related to the sources of stress. "Emotional manifestations often act as precursors of behavioral and physiological changes in teachers under stress" (p. 541). The six strongest emotional manifestations were: frustration, exhaustion, worry, pressure, depression, and anxiety. The six strongest behavioral manifestations were: separation of one's job life from one's personal life, defensive attitude with others, deterioration of professional and social performance, sleeping more than usual, and dealing with students only on an intellectual and nonpersonal basis. The six strongest physiological manifestations were: physical exhaustion, headaches, becoming fatigued in a very short period of time, physical weakness, stomach acid, and

feeling one's heart pounding. The emotional and physiological manifestations were rated more strongly and frequently than the physiological manifestations. One-way analyses of variance were performed on the 38 manifestations of stress means across the three teacher groups, and the three teacher groups responded quantitatively different (at .01 or .001 levels of significance) to the manifestations of stress. That is, "high stress teachers exhibited significantly more frequent and significantly stronger emotional, behavioral, and physiological manifestations than did all other teachers" (p. 542).

Fimian and Santoro made two major conclusions from their study. First, no source or manifestation of stress took precedence over the others. This could indicate that the sources and manifestations depend highly on the individual. Second, "certain teachers [i.e., higher stressed] report[ed] the sources and effects of stress as occurring significantly more often and as being significantly stronger than do other teachers" (p. 542).

In Fimian and Santoro's research, a few details which would have help in the analysis of their results were omitted. First, they did not state how they developed the 25 sources and 38 manifestations of stress. Second, they did not mention the ratings of all the sources and manifestations, so no information was provided about which items were rated low by the subjects. Third, they did not provide the scale for rating the sources of stress and manifestations. In addition, interaction may exist between the stress levels and the sources and manifestations of stress, because the TSI uses ratings of sources and manifestations of stress to determine stress levels. Thus, the measure of stress levels used in the study may have depended on the ratings, which were later used for comparisons based on stress levels. This was a major weakness of their research.

Retish (1986) listed a few sources of stress for special education teachers. These included the work environment and an individual's feelings of support, input, and control. Retish also provided one demographic factor that affects the stress level of special education teachers. That factor was years of experience: teachers who were new (less than five years) or experienced (more than 15 years) were more stressed than others. The reliability and validity of this information is questionable because the author only referenced two of his own articles, one of which was a manuscript. No empirical data were provided.

In a section of his book which summarized the American literature on stress and burnout, Farber (1991) described the sources of stress for special education teachers. In his introduction, he notes that "each group of teachers within special education has satisfactions and stresses unique to their specialty area" (p.269). The factors he describes in his book include (no rank order): enormous work loads, tendency to focus on students' problems rather than on their strengths and successes, lack of administrative support, excessive time demands, increased paperwork, teaching poorly motivated students, lack of recognition/appreciation for effective work, parent-teacher relationships, time management, intrapersonal conflicts, role conflict, and role ambiguity. "Finally, what can't be forgotten is that the work itself with these children can be extraordinarily difficult" (p.275). Most of these sources of stress are from referenced articles, but some are derived from interviews conducted by the author. This makes the reliability and validity in some of these sources of stress questionable.

Farber also reported on demographic information from various studies. Special education teachers experienced more stress if they taught emotionally disturbed students, worked in self contained classrooms (rather than resource rooms), taught

in junior highschools, or were younger or less experienced. He did not report on the manifestations of stress.

Teachers of the Deaf and Hard of Hearing - Sources of Stress, Manifestations, and Demographic Variables

Significant information was available through research, articles, and books establishing that stress exists for teachers working within the typical classroom setting and for special education teachers based in schools. However, little research has examined the stress of special education teachers working with Deaf, deaf, and hard of hearing students, and no research has examined the stress of itinerant teachers who support the integration of Deaf, deaf, and hard of hearing children in their neighborhood schools.

Teaching hearing impaired [sic] students is a complex and stressful occupation. The challenges of individualizing educational plans, lack of materials, completing paperwork, working with other professionals, insufficient administrative support, meeting timelines, little recognition, and dealing with behavior problems at times seem insurmountable and, as a result, very stressful. (Luckner, 1990, p. 4)

A few researchers have examined the stress of professionals working with Deaf, deaf, and hard of hearing students. A search of the literature has uncovered only three accessible, relevant, sound, major studies which have examined this topic (Johnson & Harkins, 1984; McNeill & Jordan, 1993; Meadow, 1981). Three other articles concerning stress and teachers of the deaf and hard of hearing (Lewis, 1983; Luckner, 1989, 1990) are opinion papers increasing the awareness of the issue and providing suggestions for dealing with stress, but they do not provide research data on the sources of stress, manifestations, or demographic information.

An initial research study which examined the stress of professionals working with deaf and hard of hearing students was completed by Kathryn Meadow (1981). Meadow's study examined 240 professionals (classroom teachers $n=103$, special subject teachers $n=21$, supervisors and administrators $n=27$, support personnel [audiologists, counselors, and social workers] $n=53$, and teacher aides and dormitory workers $n=31$). Other demographic information collected included gender, age, hearing loss, marital status, family status, type of school (50% residential, 29% demonstration, 8% day, 3% religious, 8% non-school, and 3% no response), and time associated with deaf education. Most of the subjects in Meadow's study were attending the Annual Eastern Regional Conference for Educators of the Deaf held at the Pennsylvania School for the Deaf in 1979. The subjects completed the Maslach Burnout Inventory (MBI), to obtain data on the manifestations of stress, and they also completed a supplementary questionnaire, requesting the demographic information and responses to four questions related to career motivation and job satisfaction. Meadow did not collect data on the sources of stress.

The MBI consists of 25 statements designed to measure the frequency and intensity of perceived occupational burnout (Meadow, 1981). The inventory is normed on data collected from 1025 persons in a variety of occupations. Generally, the MBI examines 4 scales: emotional exhaustion, depersonalization, personal achievement, and personal involvement. The respondents were asked to complete only frequency (not intensity) measures, and the word 'recipient' was changed to 'student' for the purposes of Meadow's study.

This study compared the stress of teachers ($n=103$) working with deaf children to norms of teachers ($n=56$) working with nonhandicapped students. The norms for

the latter group were from unpublished MBI data. The results revealed that teachers of deaf students scored significantly ($p < .01$) higher on the scale reflecting emotional exhaustion. However, differences on the other three scales were not significantly different, although the teachers working with deaf students indicated "a greater tendency to 'depersonalize' the children in the classrooms, to have less sense of personal accomplishment, and a greater sense of personal involvement, when compared to the teachers of nonhandicapped students" (Meadow, 1981, p. 15).

In addition, classroom teachers experienced the greatest emotional exhaustion when compared to the other professionals surveyed. These differences were statistically significant ($p = .04$). However, they did not score the highest for the other three scales.

Meadow also analyzed, though not comprehensively, other demographic data. When analyzing the emotional exhaustion data based on age, she found highly significant ($p < .001$) differences among her four age groups: 21-26 ($n = 56$), 27-30 ($n = 53$), 31-35 ($n = 51$), and 36-61 ($n = 56$). Ages 36-61 expressed the least emotional exhaustion followed by ages 21-26, ages 31-35, and ages 27-30. Differences in scores on the other three scales did not approach significance. Another demographic variable, time associated with deaf education (years of experience), showed similar results ($p \leq .04$), with less experienced (1 or 2 years) and most experienced (11 or more years) professionals expressing the least emotional exhaustion. Other demographic variables analyzed indicated there were no significant differences among subgroups.

One limitation of Meadow's research is the relatively small sample size of teachers. Also, other professionals are included in the data analyzed. This means that generalizability to itinerant teachers working with Deaf, deaf, and hard of

hearing students is low. Furthermore, the majority of the professionals surveyed were associated with residential and demonstration schools, yet these locations are not representative for itinerant teachers.

However, Meadow's study provided validation to this issue of stress experienced by teachers working with deaf and hard of hearing students, and it specified occupational experiences that created stress for teachers. With these findings, Meadow had demonstrated that teachers of deaf students were more likely to experience burnout than teachers of nonhandicapped students and the "problem of stress and burnout among professionals working in educational settings for deaf children is one that needs serious attention" (p. 19).

Meadow's study was the impetus for further research examining stress of teachers working with deaf and hard of hearing students. Johnson and Harkins (1984) also made a substantial contribution to the research in this area. Their study surveyed a sample of teachers of the deaf and hard of hearing about occupational stress. The sample represented a mix of teachers from preschool, elementary, and secondary levels from residential, day, and special schools in urban, rural, and suburban communities. However, the authors do not provide further details about the sample. Of the 600 teachers who were sent questionnaires, 377 responded.

The questionnaire consisted of four questions and collected demographic information. The four questions were:

- In general, how stressful do you find teaching to be? (extremely, very, moderately, mildly, or not stressful),
- Which of these 50 sources of stress are a problem for you on the job?,
- What symptoms of stress have you experienced? (open-ended),
- Would you remain a teacher if you were free to leave?

For the first question, the study uncovered that 27% of the respondents found teaching very stressful or extremely stressful, 45% rated it moderately stressful, and 27% perceived it as mildly or not stressful.

Their second question revealed that the ten most common sources of stress, from most to least, were: (1) amount of paperwork, (2) developing IEP's, (3) planning and preparing materials for wide ranges of ability levels, (4) inappropriate and/or disruptive behavior of students, (5) inadequate time for planning and preparation, (6) inadequate salary, (7) attitude and/or behavior of some teachers, (8) uncooperative parents, (9) inadequate financial support for school programs, (10) inadequate communication among school personnel. The data indicated that administrative requirements were major sources of stress for teachers in their research project.

For the third question about the manifestations of stress, it was discovered that those who reported higher levels of stress tended to report increased use of tobacco, caffeine, and alcohol. Other health problems reported included fatigue, irritability, depression, loss of appetite, upset stomach, and headaches.

When they analyzed the demographic variables, Johnson and Harkins discovered that the teachers with high stress levels were also those who faced demanding working conditions (> 40 hours per week of direct contact with students, >60 hours per week of school related activities, taking continuing education courses), who have been associated with the education of the deaf and hard of hearing for a long time (more than five years), and those who worked with deaf and hard of hearing students with multiple challenges (other special needs).

The questionnaire also uncovered that only 42% of the teachers surveyed would continue to teach, about 23% would leave the field of education if they were free to

choose, 14% would find another job in education, and 16% were undecided. These responses demonstrated a great deal of dissatisfaction with teaching deaf and hard of hearing children. The authors found this desire to quit as the "most disturbing finding of the survey" (p. 21) because these feelings must in some way affect the students in their classrooms.

One major shortcoming of this research by Johnson and Harkins was its lack of detail and statistical analyses. This paper was really written for a general audience and was based on Johnson's unpublished doctoral dissertation, which contained many details (the precise methodology, information about the sample, etc.) which would be useful to better understand the results of the study. Also, the study merely described the data, but it did not include any rigorous statistical analyses. Furthermore, 37% (223 out of 600 teachers) did not respond to the questionnaire. Moreover, the study has no mention of itinerant teachers.

Johnson and Harkins' study provided relevant contributions to the research analyzing stress of teachers working with deaf and hard of hearing students. Their project revealed additional information and provided further understanding of the initial contributions made by Meadow (1981). The findings by Johnson and Harkins established some disturbing realities for teachers working with deaf and hard of hearing students (high levels of stress, job dissatisfaction, increased health problems related to stress, and that 23% of the teachers would leave the profession if they were free to do so). On the other hand, their study also provided validation of earlier findings and identified ten sources of stress, setting the groundwork in establishing strategies to help alleviate the stress for these professionals.

Another study which analyzed the stress of teachers working with deaf and hard of hearing children was completed by McNeill and Jordan in 1993. Although their

research did not statistically investigate sources of stress, manifestations, and demographic variables, it did provide some information on sources of stress and communication philosophy pertinent to itinerant teachers of the deaf and hard of hearing.

McNeill and Jordan (1993) developed their own survey to compare the levels of stress between teachers working in institutions using Oral Communication (OC) and those working in institutions using Total Communication (TC). The survey was completed by teachers from four residential programs for deaf students in the United States; two programs followed the OC approach and two followed the TC approach. A total of 124 completed the survey; 31 teachers from the OC programs and 93 from the TC programs. Other demographic information included age, years of teaching experience (working with deaf and hard of hearing students or not), gender, and level of education attained.

The survey instrument was designed and developed by the researchers as they felt that there was no instrument suitable to meet their needs. With the assistance of five doctoral students in special education, they established content validity of their questionnaire. The final research instrument was a 36-item survey, with 1 to 5 items relating to each of the ten factors thought to cause stress. These ten factors concerned: (1) student academic achievement, (2) communication philosophy, (3) teachers' class-level placement, (4) school reputation, (5) teacher education, (6) school goals, (7) school location, (8) technical and personnel assistance, (9) relationship with supervisor, and (10) ability grouping of students. The teachers were asked to indicate the extent to which each of the 36 statements was true for his/her teaching position using a 5-point Likert-type scale.

To determine the criterion validity of the created instrument, the researchers had the respondents complete a second instrument (Wilson's *Stress Profile for Teachers*), a 36-item instrument that addresses nine possible sources of stress: (1) student behavior, (2) employee-administrator relations, (3) parent - teacher relations, (4) teacher-teacher relations, (5) time management, (6) intrapersonal conflicts, (7) physical symptoms of stress, (8) psychological - emotional symptoms of stress, and (9) stress management techniques.

The results of this study indicated that there was no significant difference in perceived levels of stress between the teachers working at OC institutions and teachers working at TC institutions (using a nondirectional two-tailed *t*-test of the means, $t=0.60$, $df=122$). The total scores for the researchers' developed questionnaires were weakly correlated with Wilson's *Stress Profile for Teachers* ($r=.433$).

One major problem with McNeill and Jordan's research is that they neglected to mention where or how they generated their ten factors thought to cause stress. Another shortcoming of this study was the use of Wilson's *Stress Profile for Teachers*, developed for an independent school district in San Diego and has not been published. Therefore, the validity of the sources of stress for this instrument were also questionable. Furthermore, their samples were small, and they collected demographic data which was summarized but not analyzed.

On the other hand, McNeill and Jordan's research project has provided valuable contributions to the research available on stress of teachers working in institutional settings with deaf and hard of hearing students. They have established that communication style is not the foundation for job dissatisfaction or stress for these teachers. The stressors identified by the teachers were generalized across both

communication modes (OC and TC). In their concluding remarks, McNeill and Jordan state "Future research should also examine stress reported by teachers of deaf students in other settings (itinerant, self-contained day classes, programs for students in regular school settings)" (p. 287).

Itinerant Teachers of the Deaf and Hard of Hearing

In their research about American itinerant teachers of the deaf and hard of hearing, Luckner and Miller (1994) described the demographics, responsibilities, perceptions, and the students serviced by itinerant teachers. They did not investigate teacher stress levels or the sources and manifestations of stress. They wrote, "Although the itinerant service-delivery model is used extensively, there is a paucity of both information about itinerant teaching and of research that has examined its effectiveness" (p.111).

Luckner and Miller mailed 951 questionnaires to programs with more than thirty students in 50 states across the United States. They received 319 questionnaires back from itinerant teachers of the deaf and hard of hearing in 48 states.

Questionnaires were only accepted from full-time teachers.

Data were collected on some demographic variables. The mean teaching experience as a teacher of the deaf and hard of hearing was 12.7 years, with a range from 1 to 40 years. The mean itinerant teaching experience was 7.3 years, with a range from 1 to 33 years. Most (97%) had state certification as a teacher of the deaf and hard of hearing, yet few (27%) had Council of Education of the Deaf certification. Information about teacher gender, age, hearing loss, ethnicity, and education level was also collected.

Data were also obtained on a number of responsibilities of itinerant teachers. The mean number of students who received direct service was 10.8 students, with a standard deviation of 6.16 students. The mean number of students who received consultation-only service was 6.7 students, with a standard deviation of 12.67 students. The average time spent providing direct service was 16.13 hours/week, with a standard deviation of 7.86 hours/week. The average time spent obtaining and adapting materials was 3.80 hours/week, with a standard deviation of 2.94 hours/week. The mean number of different schools travelled to in a week was 7.5 schools, with a standard deviation of 3.89 schools. The average distance driven in a week was 178.41 miles (287.12 km), with a standard deviation of 152.84 miles (245.97 km). The average time driving between schools was 5.88 hours/week, with a standard deviation of 4.02 hours/week.

When asked to rate the extent to which certain factors limit their ability to effectively deliver services, itinerant teachers identified factors related to time (i.e., classroom teachers' time constraints, their own time constraints, and caseload numbers) and scheduling difficulties, rather than resistance of classroom teachers, students' inappropriate placements, lack of administrative support, or lack of support services.

When asked to rate on a scale from 1 to 4 (1= not at all; 2= very little, 3= somewhat; 4= considerably) the extent to which their training prepared them for the itinerant role, itinerant teachers rated on the job training and other itinerant teachers ($\bar{x}=3.70$, $SD=0.73$) higher than inservice ($\bar{x}=2.35$, $SD=1.07$), graduate training ($\bar{x}=2.25$, $SD=1.06$), and undergraduate training ($\bar{x}=1.85$, $SD=0.98$).

Teachers were asked to provide the number of students which were considered a manageable caseload. The mean number of students considered manageable was

10.72 students, with a standard deviation of 4.40 students. Teachers were also asked whether they thought the itinerant model was effective. Most (89%) teachers believed the itinerant model was effective, but some (11%) did not.

In order to obtain the characteristics of the students who received educational services from itinerant teachers, teachers were requested to list their direct support students in alphabetical order and respond to the survey questions using the fourth student as their example. From this somewhat random sample, it was found that 31% of the students had other special needs besides their hearing loss. Most students (39%) had a severe (50-70 dB) hearing loss, 33% had a moderate (30-50 dB) loss, 22% had a profound (70 dB or greater) loss, and 5% had a mild (15-30 dB) loss. On average, a student received 2.40 hours/week (SD=2.41 hours/week) of direct support. Most students (89%) were oral, few (22%) used sign language, most (83%) wore hearing aids, and some (43%) used auditory amplification units. Most teachers (85%) felt that the current placement of the student provided appropriate services, and most (86%) felt that the itinerant model was effective for the student. Information about student gender, age, ethnicity, reading level, observation frequency, IEP goals, and classroom adaptations were also collected.

In their discussion, Luckner and Miller (1994), illuminated two issues which become apparent from the data.

First, the amount of time that itinerant teachers spend in nonteaching activities is surprising. The hours spent driving between schools almost equals a full day of work per week, not including the time needed to enter each school building, get organized, and find the student prior to beginning to work. (p. 116)

Second,

teacher training programs continue for the most part, to prepare such teachers for positions in self-contained classrooms or residential settings only. Being able

to work with other adults as members of multidisciplinary teams and to provide consultation and collaboration are essential. In additions, training in the areas of conducting inservice workshops, evaluating mainstream settings, time management, stress management, and organizational skills need to be addressed. (p. 117)

One weakness of this research by Luckner and Miller (1994) was the low response rate (38%), but they explained that they did not know if all programs had itinerant teachers of the deaf and hard of hearing. Another weakness was that each teacher described only one student from their direct caseload. A more accurate analysis would include more than just one student. Also, since the research was collected in the United States, the generalizability to BC itinerant teachers could be weak.

Nonetheless, Luckner and Miller (1994) provide valuable information about the demographics, responsibilities, and students serviced by American teachers of the deaf and hard of hearing. They conclude by writing:

Given the time, energy, and finances that have been invested in implementing mainstreaming, it is disturbing to realize that we are still relatively unformed about how to make it work effectively. Future research, focusing on itinerant teaching, using qualitative and observational data-collection procedures, will assist teachers and teacher trainers in better understanding mainstreaming and in developing ways to improve services for deaf and hard of hearing students. (p.118)

Summary

Stress is a person's psychological and physiological response to circumstances that approach or exceed the individual's perceived ability to cope with those circumstances. In the teaching profession, stress is an important issue since at any given time, between 5-20% of American teacher experience burnout and another 30-35% are strongly dissatisfied with their profession (Farber, 1991).

Teachers experience a variety of sources of stress, and the literature indicates that some sources are common to regular educators, special educators, and teachers of the deaf and hard of hearing: work overload (or lack of time), paperwork, diversity of student ability, student discipline problems, and problems with parents (see Table 2). Other common sources of stress for regular and special educators include: high class sizes or caseloads, lack of support/feedback/recognition, poor working conditions, role conflicts/problems, role ambiguity, isolation from other adults, inadequate teacher preparation, low involvement in important decisions, poor student motivation, and bureaucratic incompetence. Though these latter sources of stress were not mentioned in the literature for teachers of the deaf and hard of hearing, they probably influence this group of teachers as well, since little literature exists concerning this group. Two more sources of stress, namely lack of resources/budget and conflicts with colleagues, were common to regular educators and teachers of the deaf and hard of hearing. These two sources of stress are probably common to all three groups, since teachers of the deaf and hard of hearing are a category of special educators.

Table 2

Summary of the Sources of Stress for Teachers

<i>Source of Stress</i>	<i>Type of Teacher</i>		
	<i>Regular Educator</i>	<i>Special Educator</i>	<i>Teacher of the deaf & hh</i>
lack of time or work overload	1, 5, 7, 9	5, 6, 11	8
paperwork and/or developing IEP's	5	5	8
diversity of student achievement/ability	1, 5	6	8
classroom management or student discipline problems	1, 2, 5, 7, 9	6	8
unreasonable, unconcerned, or uncooperative parents	5	5, 11, 12	8
inadequate salary	4, 5	6	8
high class sizes or caseloads	1, 2, 5	5, 6, 11, 12	
lack of support/feedback/recognition	1	5, 6, 10, 11, 12	
poor working conditions, space	4, 5, 9	10	
role conflicts/problems	1, 4, 5, 7	5	
role ambiguity	4, 5	5	
isolation from other adults	5	6	
inadequate teacher preparation	1, 5	6	
low involvement in important decisions	1, 5	10	
poor student motivation	5, 9	5, 6	
bureaucratic administrative incompetence	1, 5	6	
lack of resources/budget	2, 4		8
conflicts with colleagues	4, 9		8
reorganization of classes or program	2		
student violence	2, 5		
implementing curriculum goals	2		
teaching mainstreamed students with special needs	5		
diversity of students (socioeconomic, ethnicity, etc)	1, 7		
number and quality of personal contacts	1, 5		
difficulties arising from political or economic conditions	5, 7		
low status of teachers in society or public criticism	5, 9		
lack of promotion or advancement	2, 5		
lack of perceived success		11	
providing emotional support to students		11	
focusing on students' problems rather than successes		5	
inadequate communication among school personnel			8

Note. Summarized from: 1=Cedoline (1982), 2=Cichon & Koff (1980), 3=Cole & Walker (1989), 4=Dunham (1992), 5=Farber (1991), 6=Fimian & Santoro (1983), 7=Hiebert (1985), 8=Johnson & Harkins (1984), 9=Kyriacou, 1989; 10=Retish (1986), 11=Weiskopf (1980), 12=Zabel & Zabel (1982).

Some sources of stress which appear to be unique for special educators are: lack of perceived success, providing emotional support to students, focusing on students' problems rather than successes, and inadequate communication among school personnel (see Table 2). However, the research is limited in this area, and one must be cognizant of this when interpreting Table 2. Likely, many more sources of stress exist for special educators, and more studies are needed to examine this important area.

Concerning the manifestations of stress for teachers, it appears that they generally report the same symptoms as other occupations (Hiebert, 1985). The "relationship between occupational stress and subsequent ill-health is a complex one" (Kyriacou, 1989, p. 29). "Teachers burn out in different ways and for different reasons; thus it is difficult to generate a single, universal description of the etiology and symptoms of the disorder" (Farber, 1991, p. 72).

Overall, regular educators, special educators, and teachers of the deaf and hard of hearing exhibit similar manifestations of stress. The manifestations which were shared among these three groups were (see Table 3): *physical symptoms* (fatigue or exhaustion, gastrointestinal problems, headache, and use of drugs and alcohol), *emotional symptoms* (depression, low morale, self-deprecation, and irritability) and *professional symptoms* (obsessive thinking about work, decreased effectiveness or accomplishment, and less involvement with students). Another major category of manifestations, shared between regular and special educators, was *social symptoms* (social withdrawal or isolation, strained relations at home, and absenteeism).

The demographic variables indicated no definite pattern (see Table 4). Studies seemed to contradict each other. It seems best "to determine the specific stress-related characteristics of a particular sample rather than assume any specific

Table 3

Summary of the Manifestations of Stress for Teachers

<i>Manifestations of Stress</i>	<i>Type of Teacher</i>		
	<i>Regular Educator</i>	<i>Special Educator</i>	<i>Teacher of the deaf & hh</i>
physical symptoms			
fatigue/exhaustion/weakness and sleeping more than usual	1, 2, 3	4, 7	5
gastrointestinal problems, ulcers	1, 3	4	5
headache	1, 3	4	5
use of drugs and alcohol, including caffeine and tobacco	1, 3	7	5
heart problems (rapid heart beat or disease)	1, 3	4	
accident proneness	1		
high blood pressure	1, 3		
insomnia	2, 3		
muscle tension	1		
nausea	3		
breathing difficulties	3		
dizziness	3		
tremors	1		
loss of appetite			5
social symptoms			
social withdrawal, social isolation	1	7	
strained relations at home	1, 2, 3	7	
absenteeism	1, 3	7	
complains, cynicism, malicious humor	1, 3		
vandalism, pilferage	1		
emotional symptoms			
depression, low morale, sad, self-deprecation	1, 3	4, 7	5
irritable	2, 3	7	5
emotionally exhausted	3	4, 8	6
dehumanization, detachment, or apathy	1, 2	8	
anxious, feeling unable to cope, or worry	2, 3	4	
frustration or anger	1, 2, 3	4	
denial or blame	1		
paranoia	1		
stubbornness	1		
less enthusiasm	3		
pessimistic	3		
professional symptoms			
married to the job, obsessive thinking about work	1	2, 4	6
decreased effectiveness, quality of work, or accomplishment	1	4	6
less involvement with students	3	4	6
less creativity	3		
thoughts of leaving teaching	2, 3		
poor decision making	1		

Note. Summarized from: 1=Cedoline (1982), 2=Dunham (1992), 3=Farber (1991), 4=Fimian & Santoro (1983), 5=Johnson & Harkins (1984), 6=Meadow (1981), 7=Weiskopf (1980), 8=Zabel & Zabel (1982).

Table 4

Summary of the Demographic Variables for Teachers

<i>Demographic Variable</i>	<i>Regular Educator</i>	<i>Type of Teacher Special Educator</i>	<i>Teacher of the deaf & hh</i>
no definite pattern	2, 4		
gender			
male	3		
female	1		
marital status - single	1, 3		
socioeconomic status - lower	1		
urban (vs. rural)	1, 3		
level taught (Jr. secondary)	3	3, 9	
age			
younger	3	3, 9	
middle aged			7
large school size	3		
teaching experience			
less (0-2 years)		3, 8, 9	
mid-career (3-10 years)			7
more (11+ years)		8	5
service delivery model		3	
enrolled in education courses			5

Note. Summarized from: 1=Cedoline (1982), 2=Chichon & Koff (1980), 3=Farber (1991), 4=Hiebert (1985), 5=Johnson & Harkins (1984), 6=Kyriacou (1989), 7=Meadow (1981), 8=Retish (1986), 9=Zabel & Zabel (1982).

characteristics based on past research findings" (Hiebert, 1985, p. 28).

Though they did not investigate stress levels, Luckner and Miller (1994) described some of the demographics, responsibilities, and perceptions of American itinerant teachers of the deaf and hard of hearing. They described such characteristics as teaching experience, certification, caseload, travel, time spent on different responsibilities, service delivery model perception, rating of teacher

education, and students serviced. They also identified the need for more research in the area of itinerant teaching.

The studies and articles examined in this literature review indicated that teachers of the deaf and hard of hearing experience as much or more stress than classroom teachers and special education teachers. Yet, none of the studies or articles have specifically analyzed or addressed the stress of itinerant teachers working with students who are Deaf, deaf, or hard of hearing. Most deaf or hard of hearing students are attending their neighborhood schools and receiving support from an itinerant teacher of the deaf and hard of hearing. Therefore, it is critical to examine the sources and manifestations of stress for these itinerant teachers.

Typically, itinerant teachers have larger caseloads, more paperwork, more meetings, and interact with more people than a resource-room and/or classroom teacher. Itinerant teachers must also travel to a number of school sites, and this means dealing with weather conditions, traffic, and vehicle maintenance. In addition, they lack a 'place to call home,' where they are in a familiar setting and have the support of colleagues. This project analyzed these and other factors which could contribute to the stress levels of itinerant teachers.

CHAPTER 3: METHODOLOGY

The method of this study was to use two questionnaires to gather detailed information about itinerant teachers, who were providing direct or consultative services to Deaf, deaf, and hard of hearing students within BC public school districts. The two questionnaires were (1) the Itinerant Teacher Questionnaire (ITQ) which obtained demographic information (biographical, caseloads, roles, responsibilities, and concerns) and (2) the Teacher Stress Inventory (TSI) which measured the sources and manifestations, as well as the stress levels, of these teachers. Correlations between and among these factors were analyzed.

Research Questions

This research project was an attempt to identify and answer the following research questions.

1. What are the:
 - a) averages and ranges of demographic variables of the BC itinerant teachers of the deaf and hard of hearing?
 - b) averages and ranges of responsibilities for BC itinerant teachers of the deaf and hard of hearing?
2. To what extent do itinerant teachers of the deaf and hard of hearing experience job-related stress as compared to norms of regular and special educators?
3. a) What are the relationships between their demographic variables and their stress levels?

- b) What are the relationships between their responsibilities and their stress levels?
4. To what extent do BC itinerant teachers of the deaf and hard of hearing exhibit manifestations of stress as compared to the norms of educators?

Description of Population

Within most public school districts in BC, the teacher of the deaf and hard of hearing is an itinerant teacher providing direct or consultative services to students within their district. In BC in 1998, there were approximately 95 itinerant teachers working with Deaf, deaf, and hard of hearing students.

In this study, all itinerant teachers of the deaf and hard of hearing teaching in BC public school districts were contacted by mail to participate in the study. The mailing list of teachers was generated from the *Directory of Teachers of Deaf and Hard of Hearing Students* (Jericho Outreach Program, 1997).

Instrumentation

Two instruments were used in this project. One was the Itinerant Teacher Questionnaire (ITQ) (see Appendix B), and the other was the Teacher Stress Inventory (TSI) (see Appendix C). They are described in more detail in this section.

Itinerant Teacher Questionnaire (ITQ)

The development of the ITQ was a collaborative process. Concern for stress levels of itinerant teachers has been voiced by many itinerant teachers in BC. At workshops and conferences, they have expressed that the working conditions, caseloads, and responsibilities of itinerant teachers vary from district to district

throughout the province. These issues have caused concern for them. In a recent letter to the president of the Canadian Association of Educators of the Deaf and Hard of Hearing - BC (CAEDHH-BC), one teacher wrote that establishing "realistic caseload sizes...could help address the issue of stress and burnout for Itinerant Teachers of the Deaf and Hard of Hearing" (Tylka, 1997, p.15). In response to these concerns, a CAEDHH-BC committee was created to examine these issues. It was named the Itinerant Committee.

The committee decided that there was a need to gather information about itinerant teachers in BC and that it would be appropriate for a Masters' thesis project. Thus, it was the beginning of this project.

The committee discussed what information could be gathered and would be useful in better understanding the roles, responsibilities, and concerns of the itinerant teachers within the province. In addition, literature (see Chapter 2) related to these issues was also examined. The information generated from these sources created the foundation for the ITQ.

The ITQ was revised on several occasions with input from members of both the CAEDHH-BC committee and a university thesis committee.

Since there is no literature which examines the stress of itinerant teachers of the deaf and hard of hearing, the ITQ was intended to be a broad measure to encompass many issues and concerns which may or may not be correlated to the levels of stress for this population of teachers. Because the ITQ collected data on a variety of variables, it was expected that some of them would correlate with levels of stress. This approach to data collection was in agreement with Farber (1991), who stated that each specialty area has unique sources of stress which should be investigated.

The ITQ specifically collected information about biographical, caseload, preparation time, travelling, work environments, technology, service delivery models, and other concerns. It contained closed and open questions and took approximately 50 minutes to complete.

The ITQ was not pilot tested, and therefore its reliability and validity were unknown. It was possible that some items on the ITQ could have been misinterpreted or unclear.

Teacher Stress Inventory (TSI)

The TSI was created by Michael J. Fimian in 1984, and it was based on his research examining occupational stress of teachers. Fimian set out to define teacher stress, in relation to stress-related problems, and he felt that this was a crucial step in the process of identifying and resolving teacher stress. "Knowing which stressful incidents impact teachers the most, and which the least, is the first step in identifying, defining, and resolving stress-related problems" (Fimian, 1987, p. 13). Fimian wanted to establish a means to measure the complex construct of occupational stress for teachers. He met this goal with the creation of the TSI.

The TSI uses a Likert-type scale to measure 49 stress-related items. Items are written as statements that the respondents rate in relation to the strength of each event. According to Fimian, ten factors comprise teacher stress: five factors represent sources of stress (time management, work-related stressors, professional distress, discipline and motivation, and professional investment), and the other five represent manifestations (emotional, fatigue, cardiovascular, gastronomic, and behavioral). Collectively the 10 factors represent 'Total Stress'. The stress strength

scale ranges from 1 (no strength; not noticeable/relevant) to 5 (major strength; extremely noticeable/relevant).

Validity and Reliability of the TSI

The TSI is a valid and reliable measure of occupational stress experienced by teachers. The face validity, factorial validity, content validity, convergent validity and internal reliability of the TSI were initially analyzed during its creation and have since been assessed by Fimian (1986 & 1987) and Fimian and Fastenau (1990).

Face validity. From the available research, Fimian (1982) identified 135 items (sources and manifestations) of teacher stress. These were categorized into 13 factors (groups). With help from faculty members, graduate students, and teachers, this list was edited down to 63 items.

Factorial validity. The purpose of factorial analysis is "to examine empirically the interrelationships among the items and to identify clusters of items that share sufficient variation to identify their existence as a factor or construct to be measured by the instrument" (Gable, 1986, p.85). Using this complicated statistical analyses, the thirteen factors were reduced to ten. (Fimian, 1988)

Content validity. To establish the content validity of the TSI, Fimian (1987) sent a copy of the inventory, then 49 items, to 226 stress and burnout experts, who rated the relevancy of each item. He calculated interrater reliability correlation, and he found that all correlations exceeded the .05 (2 items), .01 (6 items), .001 (41 items)

probability levels. Also, the ten factors and the entire TSI interrater reliabilities exceeded .001 probability levels.

Convergent validity. Convergent validity was demonstrated in three ways (Fimian, 1988). First, 47 teachers' TSI scores were correlated with the ratings made independently by a significant other, who knew the teacher well. "The teachers' ratings were found to be significantly related to those of their significant others, both in terms of each of the [factors] (r range=.46 to .69; p =.001) and the Total Strength, (r =.65; p =.001) scores" (p.60).

Second, personal (teacher sex, age, experience) and professional (student number and grade level) characteristics were correlated with total TSI scores. Using Pearson r analyses, it was apparent that almost all of these characteristics bear little actual relationship to teacher stress levels. However, the size of teacher caseloads was "somewhat related to teacher stress, although it [was] to a limited degree" (Fimian 1988, p.64).

Third, TSI total scores were correlated with various psychological and organizational measures that were related to occupational stress. These comprehensive measures included burnout, role ambiguity and conflict, teacher training, supervisory/peer support, job satisfaction, job stress, substance abuse, anxiety, tedium, and principal management style and leadership. Analyses proved positive correlation with these measures.

Reliability. Three types of reliability have been investigated using the TSI: alpha (internal) consistency, test-retest, and split-half.

From the alpha reliability estimates calculated on the TSI subscales and whole scale, it was "evident that the samples responded to the TSI in a consistently responsible fashion" (Fimian, 1988, p. 77). The subscale reliability estimates ranged from .75 to .88 and the total TSI scale was .93 ($n=3401$). (Ideally the alpha reliability estimates should be 1.0).

Test-retest reliability addresses the fluctuations of responses over time. Test-retest reliabilities were based on responses on a small sample of 49 teachers, tested on two occasions. The intervals examined were 2-hour ($n=9$), 1-day ($n=15$), 1-week ($n=11$), and 2-week ($n=14$). The test-retest reliabilities ranged from .42 to .99 for the subscales and .67 to .99 for the whole scale. These results indicated some stability for the stress factor across 2-hour, 1-day, 1-week, and 2-week intervals. However, the sample sizes were very small.

Split half reliabilities provided data base estimates on a randomly split instrument (two equivalent sets of items). The scores from the two halves are then correlated. The TSI scored an alpha measure in the mid - 90's showing a strong relationship between the short forms.

Re-analysis. In 1990, Fimian and Fastenau re-analyzed the aggregate data. The intent of the investigation was to (a) re-analyze the aggregate data that had been collected on the TSI since 1980, (b) re-examine emerging stress factors, (c) re-evaluate the alpha reliability estimates for each, and (d) study the interrelationships among these factors.

As a result of the factor analyses and varimax oblique rotations, ten discrete factors resulted, each of which was internally consistent and significantly related to the others (time management, work-related stressors, professional distress,

discipline and motivations, professional investment, emotional manifestations, fatigue manifestations, cardiovascular manifestations, gastronomical manifestations, and behavioral manifestations). These factors could be divided into stress sources and stress manifestations. Correlational analysis indicated that each of the stress factors was significantly related to each of the others, and that each was related even more strongly to the total strength of stress.

Scoring of the TSI

The TSI was scored as follows:

1. Each of the items was rated. Irrelevant or incompleting items were not included within the analysis.
2. Each subscale (factor) was scored, and one mean item score was calculated for each of the 10 subscales.
3. To compute the Total Stress Score (TSS), the mean item subscale scores were totaled then divided by 10 (the total number of TSI subscales). The mean subscale scores and TSS could then be interpreted using the norms.

The norms were computed based on the data provided by an aggregate sample of 3,401 elementary and secondary teachers (grades 1-12). The aggregate sample was used to compute the norms for both the TSS and the subscale scores. The TSS norms were established for regular education teachers ($n=962$) and special education teachers ($n=2352$). Therefore, the norms could be used and accurately compare regular or special education teachers to their appropriate norm group.

Data Collection

The survey instruments (ITQ and TSI) and an explanatory cover letter (see Appendix A) were mailed out in May 1998 to all itinerant teachers of the deaf and hard of hearing listed in the *Directory of Teachers of Deaf and Hard of Hearing Students* (Jericho Outreach Program, 1997). The cover letter described the general purpose of the study, requested their participation, and explained how to return the questionnaires (in the addressed, postage-paid envelope).

The research secretary was hired to mail out, follow-up (if necessary), and receive the returned questionnaires. The questionnaires were numbered to correlate them and maintain the anonymity and confidentiality of the participants as some of the questions ascertained personal and confidential information. Upon receiving the questionnaires, the research secretary destroyed the envelopes and ensured that the participant's name was not identified on the questionnaires and that the two questionnaires were stapled together. The research secretary also sent follow up letters and questionnaires to participants who did not complete the survey by the initial deadline.

Data Analysis

Data from the ITQ were summarized with respect to frequencies, averages, and ranges for the items concerning itinerant demographics and responsibilities.

The TSSs from the TSI were calculated and used as a measure of the stress levels of the population. The TSSs from the respondents were compared to the norms for regular education and special education teachers to determine if the itinerant population was more or less stressed than the norms (see Table 5, Fimian, 1988).

Also, the frequencies of stress sources and manifestations from the TSI were analyzed (see Table 6). This indicated which sources of stress and which manifestations of stress were most common for itinerant teachers working with Deaf, deaf, and hard of hearing students.

Table 5

TSI Total Stress Score Ranges by Significance Levels (from p.16, Fimian, 1988)

Total Stress Score Scale	Regular Educator (n=962)	Special Educator (n=2352)
Significantly high	3.28 or above	3.28 or above
Moderate	2.01 to 3.27	1.90 to 3.27
Significantly low	2.00 or below	1.89 or below

Note: 1. Cut-off points for significance levels were set at plus/minus 1 standard deviation around the mean of each sub-sample.

Table 6

TSI Subscale Score Ranges by Significance Levels (from p.18, Fimian, 1988)

Subscale	Significantly High	Moderate	Significantly Low
Sources of Stress			
Time Management	4.00 or above	2.40 to 4.00	2.40 or below
Work-Related	4.10 or above	2.20 to 4.10	2.20 or below
Professional Distress	4.15 or above	2.00 to 4.15	2.00 or below
Discipline & Motivation	4.00 or above	1.85 to 4.00	1.85 or below
Professional Investment	3.75 or above	1.50 to 3.75	1.50 or below
Manifestations of Stress			
Emotional	3.75 or above	1.40 to 3.75	1.40 or below
Fatigue	3.55 or above	1.40 to 3.55	1.40 or below
Cardiovascular	3.00 or above	1.00 to 3.00	1.00 or below

Table 6 (continued)

Subscale	Significantly High	Moderate	Significantly Low
Gastronomical	3.00 or above	1.00 to 3.00	1.00 or below
Behavioral	2.00 or above	1.00 to 2.00	1.00 or below

Note: 1. Cut-off points for significance levels were set at plus/minus 1 standard deviation around the mean of each sub-scale.

Next, the TSSs from the TSI were correlated with the data from the ITQ. Correlational and multiple regression analyses between the two questionnaires provided increased understanding into specific biographical (i.e., age, years of experience, educational training, etc.) and job related factors (i.e., caseloads, preparation time, travel, equipment, etc.) which were and were not significantly correlated to the stress levels of these teachers. The SPSS program was used to assist in the analysis of the data.

Summary

Data on the demographic variables, responsibilities, perceptions, stress levels, and sources and manifestations of stress for itinerant teachers of the deaf and hard of hearing in BC were collected using two questionnaires. The questionnaires used for this project were the standardized Teacher Stress Inventory (TSI) and the self-created Itinerant Teacher Questionnaire (ITQ).

The TSI was used as a measure of the stress levels of itinerant teachers. It was a measure specifically developed for the teaching profession, and its validity and reliability has been researched.

The ITQ was a questionnaire developed for this project with input from literature, itinerant teachers, and a university thesis committee. The ITQ collected data on the demographic variables and responsibilities.

The demographic data and responsibilities were summarized using averages and ranges. Comparison to norms, correlational analyses, multiple regression analyses, and comparisons among item and subscale means were completed to determine the relative stress levels and significant sources and manifestations of stress of itinerant teachers.

CHAPTER 4: RESULTS

A total of seventy ($n=70$) itinerant teachers of the deaf and hard of hearing from British Columbia, Canada participated in this project. Ninety-five surveys were mailed out in May 1998, and follow-up mailouts were sent in June 1998 to those who did not respond to the initial mailing. Although ninety-five surveys were mailed, it was subsequently learned that three teachers were no longer performing itinerant duties (i.e., maternity leave, overseas exchange, change of teaching assignment). Therefore, the response rate for this project was determined to be 76% (70 out of 92 possible participants).

Demographic Information and Responsibilities of Itinerant Teachers

Interpretation of the data was complicated by the fact that 34 out of 70 respondents worked at various levels of part-time. The most appropriate method for determining *averages* was to total the numbers for an item and then divide by the total full-time equivalents (FTEs) for an item. For example, the total for item #11, direct support caseload, on the ITQ was 984 students, and this total was divided by the total FTE of participants who answered the item (54.687 FTE), to obtain an average of 18.0 students/FTE. This calculation produced an *average* number/FTE, not a *mean* number/FTE. Calculating a *mean* number/FTE would over or under inflate the results due to part-time FTEs.

Ranges were presented to illustrate the spread of the data, since the method used to calculate *averages* did not provide standard deviations. To establish comparisons, often the minimum and maximum value was divided by the FTE of the participant to obtain a number/FTE for the participant, which could then be compared to other participants' numbers/FTE. Providing both types of ranges (raw

data and per FTE) was considered important, in order to provide a better perspective on the actual and calculated spread of the data.

Demographic Variables

For this sample of itinerant teachers, the mean FTE was 0.78 FTE, with a standard deviation of 0.27 FTE. The lowest was 0.14 FTE and the highest was 1.0 FTE. Approximately half of respondents (36 out of 70) worked full-time (1.0 FTE). When an individual's district FTE was analyzed the mean was slightly higher, 0.85 FTE, indicating that some teachers (15.9%) had two or more roles in their district.

There was a wide variety in years of teaching experience for this group of teachers. The mean number of years working as an *itinerant* teacher of the deaf and hard of hearing was 8.56 years, with a standard deviation of 5.77 years and a range of 1 to 27 years. The mean number of years *working with deaf and hard of hearing students* was 13.22 years with a standard deviation of 8.09 years and a range of 1 to 32 years. The mean number of years of *total teaching experience* was 15.68 years with a standard deviation of 8.23 years and a range of 1 to 37 years.

The Canadian Association of Educators of the Deaf and Hard of Hearing (CAEDHH) provides interim and permanent certification for teachers of the deaf and hard of hearing who fulfill the association's criteria. The questionnaire indicated that 88.6% of the respondents were certified by this association.

Colleagues

Participants were requested to provide the total FTE of all teachers of the deaf and hard of hearing working in their district. The mean of these FTEs was 3.63 FTE, with a standard deviation of 3.09 FTE. The minimum was 0.20 FTE and the

maximum was 13.97 FTE. The participants were also requested to provide the number of teachers of the deaf and hard of hearing working in their district. The mean number of teachers was 4.43, with a standard deviation of 3.57. The minimum was 1 teacher and the maximum was 16 teachers. Other findings included that 22.9% of the teachers of the deaf and hard of hearing work alone, 37.1% work in a district with two or fewer teachers, and almost half (47.1%) work in a district with three or fewer teachers of the deaf and hard of hearing.

When asked how often the itinerant teacher met formally and informally with other teachers of the deaf and hard of hearing, 42.9% indicated that they met weekly or daily (see Table 7). However, 40.0% indicated that they met less frequently than monthly.

Table 7

Frequency of Meeting With Colleagues

<u>Frequency of Meeting</u>	<u><i>n</i></u>	<u>Percent of Respondents (<i>n</i>=70)</u>
Daily	7	10.0%
Weekly	23	32.9%
Monthly	12	17.1%
More than monthly	28	40.0%

Caseload of the Itinerant Teacher

The average number of students on an itinerant teacher's *direct* caseload was 18.0 students/FTE. The smallest *direct* caseload was 2 students (on a 0.20 FTE) and the largest *direct* caseload was 27 students (on a 1.0 FTE). When the *direct* support caseload numbers were converted to a 1.0 FTE basis, the smallest caseload

was 7.0 students/FTE (7 students on 1.0 FTE) and largest was 65.0 students/FTE (13 students on 0.20 FTE).

The average number of students on an itinerant teacher's *consult* caseload was 20.7 students/FTE. The smallest consult caseload was 0 students and the largest consult caseload was 80.0 students (on a 1.0 FTE). When the consult support caseload numbers were converted to a 1.0 FTE basis, the results were the same.

Itinerant teachers of the deaf and hard of hearing mainly worked with primary and intermediate aged students. Almost all (92.8%) worked with primary students, and almost all (94.2%) worked with intermediate aged students. Many (79.7%) itinerant teachers worked with secondary aged students, but few (11.6%) worked with pre-school aged children.

Each week, the average number of hours spent directly working with deaf and hard of hearing students was 19.1 hours/FTE. The hours ranged from 2.0 hours (on a 0.137 FTE) to 30.0 hours (on a 1.0 FTE). However, when converted to a 1.0 FTE basis, the smallest number of hours was 10.0 hours/FTE (10 hours on a 1.0 FTE) and the highest was 30.0 hours/FTE (15 hours at 0.50 FTE and 30 hours at 1.0 FTE). When the average number of hours spent directly working with deaf and hard of hearing students each week was compared to the average *direct* caseload, it was calculated that direct students receive approximately 1.06 hours/week of support from an itinerant teacher.

In addition, itinerant teachers were asked if they felt caseloads should be mandated. The results indicated that 33.8% felt that caseloads should be mandated, 36.8% did not feel this way, and 29.4% were undecided.

Description of Direct Support Students

Of the students who received direct support from an itinerant teacher deaf of the hard and hearing, 92.6% were oral/aural, 4.8% used sign & speech, and 2.6% used sign only. The majority (81.9%) of students experienced a bilateral hearing loss (see Table 8). The most common type of hearing loss was a moderate (41-55db) bilateral loss.

Table 8

Frequency of Hearing Loss as a Percent of Total Direct Caseload Numbers

<u>Type of Hearing Loss (unaided in better ear)</u>		<u>Percent of Total Direct Caseload (n=915)</u>
Bilateral	Profound (91+ db) loss	5.8%
	Severe (71-90db) loss	10.4%
	Moderately Severe (56-70db) loss	17.3%
	Moderate (41-55db) loss	29.3%
	Mild (26-40db) loss	15.5%
	Minimal (below 25db) loss	3.6%
Unilateral	Profound (91+ db) loss	7.0%
	Severe (71-90db) loss	3.1%
	Moderately Severe (56-70db) loss	3.2%
	Moderate (41-55db) loss	2.8%
	Mild (26-40db) loss	2.0%
	Minimal (below 25db) loss	0.1%

Itinerant teachers reported that 21.9% of the deaf and hard of hearing students who receive direct support have additional special needs. For the typical itinerant teacher, the average number of students with additional special needs was 3.9 students/FTE. Comparing individuals, the lowest number was 0 students/FTE and the highest was 15 students/FTE (9 students per 0.60 FTE).

The average number of direct support deaf and hard of hearing students whom the itinerant teacher felt was inadequately supported in an itinerant program was

3.8 students/FTE. The numbers ranged from 0 students (on various FTEs) to 12 students (on a 1.0 FTE). The minimum and maximum numbers/FTE were 0 students/FTE (on various FTEs) to 50.0 students/FTE (10 students on a 0.20 FTE). However, 33.8% of the respondents stated that none of their students were inadequately supported in an itinerant program, meaning they felt that all of their students were adequately supported. When compared to all direct students receiving direct support from an itinerant teacher, 20.9% were thought to be inadequately supported in an itinerant program. The teachers provided a number of reasons as to why these students were not adequately supported. Of the teachers that reported inadequately supported students, 80.0% said it was due to the high needs of the student, 53.3% said it was due to caseload numbers, 20.0% mentioned remoteness of or distance to the teaching site, 8.9% attributed it to lack of qualified support, and 22.2% provided other reasons (i.e., scheduling difficulties, additional special needs, lack of time, lack of peer group, and lack of classroom teacher support).

Preparation Time and Paperwork

Each week, the average number of hours spent preparing student lessons was 7.12 hours/FTE. The hours ranged from 0 hours (on a 0.40 FTE) to 18.0 hours (on a 1.0 FTE). However, when converted to a 1.0 FTE basis, the smallest number of hours was 0 hours/FTE and the highest was 20.0 hours/FTE (10 hours at 0.50 FTE). When this preparation time was analyzed in conjunction with direct caseload numbers, it was determined that itinerant teachers, on average, spend 0.40 hours/student (24 minutes/student) each week preparing for lessons.

When asked how many hours each week are designated office/preparation time, the participants replied that they, on average, had 2.3 hours/FTE of designated office/preparation time each week. However, 15% of the respondents reported having no designated office/preparation time. The highest reported amount of designated time was 7.0 hours each week (on a 1.0 FTE), yet the highest converted designated office/preparation time was 10.0 hours/FTE each week (5 hours on a 0.50 FTE).

The average percentage of Individual Education Plans (IEPs) authored or casemanaged by the itinerant teachers of the deaf and hard of hearing was 66.5% with a standard deviation of 34.6%. The percentages ranged from 0% to 100%. The results also indicated that 10.1% of the teachers did not author or casemanage any IEPs, yet 36.2% authored or casemanaged 100% of their direct support students' IEPs.

To find out the time demands of IEPs, itinerant teachers were requested to provide the average number of hours each year spent on an IEP for a typical student. The mean number of hours per year was 5.7 hours/student, with a standard deviation of 3.6 hours. The minimum time provided was 1.0 hour/student and the maximum was 16.0 hours/student.

Itinerant teachers were also asked to rate the usefulness of the IEP process. The percentage of teachers who rated the IEP process as satisfactory, good, or excellent was 92.6% (see Table 9). Only 7.4% rated the usefulness of the IEP process as poor.

Table 9

Rated Usefulness of the IEP Process

Category of Usefulness	Percent of Respondents (<i>n</i> =68)
Excellent	10.3%
Good	60.3%
Satisfactory	22.1%
Poor	7.4%
Very Poor	0.0%

Mileage and Travel

A number of questions were asked to characterize the transportation of itinerant teachers. The first question asked what was the average number of hours each week spent travelling. The hours ranged from 0.5 hours (on a 0.60 FTE) to 20.0 hours (on a 1.0 FTE). The average was determined to be 6.5 hours/FTE each week. When individual data were converted to a 1.0 FTE basis, the lowest was 0.83 hours/week (0.5 hours on a 0.60 FTE) and the highest was 25.0 hours/week (5.0 hours on a 0.20 FTE).

The second question examined the number of kilometres travelled each week. The average distance covered in one week was 173.6 km. The lowest was 23.0 km (on a 0.60 FTE), and the highest was 700 km (on a 1.0 FTE). These numbers remain the same when converted to a per 1.0 FTE basis; the lowest was 38.3 km/FTE each week (23.0 km on a 0.60 FTE) and the highest was 700 km/FTE each week (700 km on a 1.0 FTE).

For the itinerant teacher, the average distance driven from one location to another was 14.7 km, with a standard deviation of 20.6 km. The shortest average distance was 2.0 km and the furthest average distance was 100.0 km.

The fourth question concerning travel asked for the distance from the teacher's office site to the furthest school serviced. The mean was calculated to be 47.3 km, with a standard deviation of 104.9 km. The shortest distance to the furthest school was 5.0 km and the longest was 592 km.

The participants were also asked to provide their modes of transportation used to perform their responsibilities as an itinerant teacher: 100% used automobiles, 7.2% used boats, 1.4% used planes, and 1.4% used kayaks. In addition they asked if weather interfered with their ability to provide support to their students. Of the respondents, 72.8% indicated that the weather rarely or sometimes interfered with their ability to service their students (see Table 10).

Table 10

Frequency of Weather Interference Ratings

Category of Interference	Percent of Respondents (n=70)
Always	0.0%
Frequently	2.9%
Sometimes	21.4%
Rarely	51.4%
Never	24.3%

The final two questions about travel addressed the total number of schools that an itinerant teacher was responsible for and the average number of schools that were visited in one day. The average number of schools itinerant teachers were responsible for was 10.4 schools/FTE. The numbers ranged from 3 schools (on a 0.14 FTE and a 0.20 FTE) to 21 schools (on a 1.0 FTE). When individual numbers were converted to a per 1.0 FTE basis, the minimum was 5.0 schools/FTE (4 schools on a 0.80 FTE and 5 schools on a 1.0 FTE), and the maximum was 50.0

schools/FTE (10 schools on a 0.20 FTE). The mean number of schools that were visited in one day by the itinerant teacher was 3.3 schools/day. The numbers ranged from 2 to 5.5 schools/day.

Personnel

Another question asked for the number of support staff that the itinerant teacher collaborates with, consults with, or provides direction for. Unfortunately, the reply rate for this question was low, 51.4% (36 out of 70 questionnaires received). Table 11 illustrates the average number, minimum, and maximum (per FTE) of school personnel that itinerant teachers collaborate with, consult with, or provide direction for. When the average numbers/FTE were summed, it was determined that the typical itinerant teacher works with approximately 63.4 school personnel per FTE.

Table 11

Number of School Personnel Collaborating, Consulting, or Providing Direction For

<u>School Personnel</u>	<u>Average Number (per FTE)</u>	<u>Minimum (per FTE)</u>	<u>Maximum (per FTE)</u>
Classroom Teacher	27.1	6.0	101.0
Administrator	10.1	0.0	29.2
Learning Assistance Teacher	7.2	0.0	18.0
Counsellor	5.3	0.0	23.0
Special Education Assistant	3.9	0.0	12.9
Speech/Language Pathologist	3.2	0.0	10.0
ESL Teachers	1.6	0.0	15.0
Interpreter	1.0	0.0	10.0
Vision Teacher	0.9	0.0	4.0
Occupational or Physio. Therapist	0.9	0.0	5.0
First Nations Teacher/Worker	0.7	0.0	5.0
Other	1.5	0.0	21.9

Itinerant teachers rated communication between school personnel and themselves, and 22.9 % rated it as excellent, 55.7% good, 17.1% satisfactory, 4.3%

poor, and 0.0% rated it as very poor. In other words, 95.7% indicated that their communication was satisfactory, good, or excellent.

Working Space

Itinerant teachers were asked to rate the overall ability to have specific rooms/space assigned to them and to rate the quality of the rooms/space for their and their students' needs. Table 12 indicates that just over half (53.6%) of the respondents rated the room/space availability as poor or very poor. However, just under half (48.5%) of the respondents rated the quality of room/spaces as poor or very poor (see Table 13). None of the respondents rated room quality as excellent.

Table 12

Rating of Ability to Have Rooms Assigned

Rating	Percent of Respondents (n=69)
Excellent	1.4%
Good	17.4%
Satisfactory	27.5%
Poor	33.3%
Very Poor	20.0%

Table 13

Rating of Room Quality based on Student and Teacher Needs

Rating	Percent of Respondents (n=68)
Excellent	0.0%
Good	14.7%
Satisfactory	36.8%
Poor	26.5%
Very Poor	22.1%

Auditory Training Equipment and Services

Itinerant teachers were asked questions related to time spent dealing with auditory training equipment, student's use of the equipment, and services supporting and repairing the equipment. The data revealed that itinerant teachers spend an average of 2.1 hours/FTE each week dealing with auditory training equipment. The fewest hours was 0.25 hours (on a 0.137 FTE), and the most was 5.0 hours (on a 1.0 FTE). When the numbers were converted to a 1.0 FTE basis, the fewest hours were 0.5 hours/FTE each week (0.5 hours on a 1.0 FTE) and the most were 7.0 hours/week (3.5 hours on a 0.50 FTE).

The direct caseload students used a variety of equipment, with hearing aids being the most commonly used (59.9%). A personal FM was also popular, with 38.8% of the direct students using one. Other ATE used included Free Field FM (8.6%), cochlear implants (0.7%), and others (0.4%) such as conference microphone and bone conduction hearing aid.

Itinerant teachers provided the number of audiological services that they work with. With respect to health units, most teachers (88.6%) worked with one health unit and some (10.0%) worked with two. None of the respondents worked with three or more health units, yet 1.4% worked with no health units. With respect to private clinics, the majority (52.9%) of respondents did not work with private clinics. However, 31.4% worked with one private clinic, 12.9% worked with two private clinics, 1.4% worked with three, and 1.4% worked with four private clinics. In addition, 14.3% worked with other audiological services such as Sunny Hill Hospital, Western Institute for the Deaf, Ear Nose and Throat Specialists, Vancouver Health Department, and District hired Audiologists.

Next, the respondents rated getting repairs done by their audiological services. For the respondents that used health units, 95.6% rated the repairs as satisfactory or better (see Table 14). For those who utilized private clinics, 100% were satisfied with repairs (see Table 14). The same was true for those who used other audiological services; 100% were satisfied with repairs (see Table 14).

Also, the respondents rated the contact and support (i.e., receiving reports, returning phone calls, etc.) from their audiological services. For the respondents that used health units, 97.1% rated the contact and support as satisfactory or better (see Table 15). For those who utilized private clinics, 100% were satisfied with contact and communication and for those who used other audiological services; 87.5% were satisfied with contact and communication (see Table 15).

Table 14

Rating of Repairs by Audiological Services

Rating		Percent of Respondents
Health Unit (n=68)		
	Excellent	38.2%
	Good	33.8%
	Satisfactory	23.5%
	Poor	2.9%
	Very Poor	1.5%
Private Clinic (n=29)		
	Excellent	24.1%
	Good	48.3%
	Satisfactory	27.6%
	Poor	0.0%
	Very Poor	0.0%
Other (n=7)		
	Excellent	42.9%
	Good	42.9%
	Satisfactory	14.3%
	Poor	0.0%

Table 14 (continued)

Rating	Percent of Respondents
Very Poor	0.0%

Table 15

Rating of Contact and Support by Audiological Services

Rating	Percent of respondents
Health Unit (n=69)	
Excellent	59.4%
Good	20.3%
Satisfactory	17.4%
Poor	2.9%
Very Poor	0.0%
Private Clinic (n=31)	
Excellent	29.0%
Good	48.4%
Satisfactory	22.6%
Poor	0.0%
Very Poor	0.0%
Other (n=8)	
Excellent	50.0%
Good	12.5%
Satisfactory	25.0%
Poor	12.5%
Very Poor	0.0%

Support for Itinerant Teachers

Itinerant teachers were asked to rate parental support and 89.9% indicated that they were satisfied or more than satisfied with support from parents (see Table 16). They were also asked if they felt they were acknowledged, recognized, or appreciated by students, parents, administration, district, etc. for their efforts. Of

the respondents ($n=67$), 76.1% felt they were acknowledged, recognized, or appreciated, 6.0% felt they were not, and 17.9% were undecided.

Table 16

Rating of Parental Support

Rating	Percent of Respondents ($n=69$)
Excellent	15.9%
Good	56.5%
Satisfactory	17.4%
Poor	4.3%
Very Poor	5.8%

Demanding Times of the Year

The participants were asked to identify which months of the school year were more demanding (see Table 17). Many itinerant teachers identified September (84.1%) and June (78.6%) as the most demanding times of the school year.

Table 17

Demanding Months of the School Year

Months of the School Year	Percent of Respondents ($n=69$)
All	4.3%
September	84.1%
October	66.7%
November	23.2%
December	11.6%
January	13.0%
February	21.7%
March	24.6%
April	13.0%
May	43.5%
June	78.6%
None	0.0%

Teacher Education

Itinerant teachers were asked to rate their preparedness/training for their role and responsibilities as an itinerant teacher of the deaf and hard of hearing (see Table 18). About 74% of the respondents rated their preparedness/training as satisfactory or better. However, this means that over a quarter (26.9%) rated their preparedness/training as poor or very poor.

Table 18

Rating of Teacher Preparedness/Training

Rating	Percent of Respondents (n=67)
Excellent	16.4%
Good	26.9%
Satisfactory	29.9%
Poor	25.4%
Very Poor	1.5%

The preceding sections of this chapter summarized the results obtained from the raw data of the ITQ. This described the demographic variables and responsibilities of BC itinerant teachers of the deaf and hard of hearing. The intent of the proceeding section is to describe the total stress of these teachers and its relation to the demographic variables and responsibilities.

Itinerant Teacher Stress

A total of sixty-six (n=66) itinerant teachers of the deaf and hard of hearing from British Columbia completed the Teacher Stress Inventory (TSI). Two participants who completed the Itinerant Teacher Questionnaire (ITQ), chose not to participate in the stress inventory. In addition, two participants only partially completed the TSI.

Total Stress Score

The Total Stress Score (TSS) was calculated using the subscale scores for each participant. The TSI provided norms or ranges by significance levels for TSSs (see Table 5). For a normal distribution of TSS Scales, one would expect that about 68% would lie within the *moderate* range and about 16% to lie above and 16% below.

The TSS for each participant was compared to the norms for regular educators and for special educators. However, caution should be exercised when comparing BC itinerant teachers to the norms, because the norms were collected from the northeast, mid-Atlantic, and southeastern states of the US. Nonetheless when compared to regular educators, the itinerant group had only 3.0% who were in the significantly high category (see Table 19). When compared to special educators, the results were similar; 3.0% were significantly high (see Table 19).

Table 19

Percentage of Respondents within Significance Levels for TSSs

<u>Norm</u>	<u>Significantly High</u>	<u>Moderate</u>	<u>Significantly Low</u>
Regular Educator	3.0%	62.1%	34.8%
Special Educator	3.0%	71.2%	25.8%

Note: $n=66$

Demographic Variables in Relation to Total Stress Scores

Analyses of variance (ANOVAs) were completed to determine the amount of variance between various subgroups within the project. The subgroups were compared to determine if a subgroup was significantly more stressed than another, with respect to TSS means. These comparisons were undertaken to examine the relationships that were suggested by the literature concerning teacher stress.

Caution must be exercised when interpreting these repeated ANOVAs because they were exploratory in nature and sample sizes were unequal. The demographic variables that were analyzed within this study included teaching experience, teacher FTE, having two or more roles, district size, and certification.

The TSS means for years of experience of itinerant teachers were compared to determine if the means differed significantly. Three types of years of experience were analyzed: *total teaching experience*, *years of working with Deaf, deaf, and hard of hearing students*, and *years of itinerant teaching*. The subgroups created for this analysis were 0-5 years, 6-10 years, 11-15 years, and 16-40 years, suggested by Retish (1986).

For *total teaching experience* (see Table 20), the ANOVA determined that there was no significant difference among the TSS means for the subgroups. The *F* value was 0.537 which was not statistically significant ($p=.635$).

Table 20

TSS Means for Subgroups based on Total Teaching Experience

Experience Subgroups	<i>n</i>	TSS Mean	Standard Deviation
0 - 5 years	10	2.14	0.51
6 - 10 years	10	2.02	0.53
11 - 15 years	13	2.29	0.62
16 - 40 years	32	2.21	0.48
Total	65	2.19	0.52

For *years of working with Deaf, deaf, and hard of hearing students* (see Table 21), the ANOVA determined that there was no significant difference among the TSS means for the subgroups. The *F* value was 0.586 which was not statistically significant ($p=.626$).

Table 21

TSS Means for Subgroups based on Years Working with Deaf and Hard of Hearing

Experience Subgroups	<i>n</i>	TSS Mean	Standard Deviation
0 - 5 years	16	2.11	0.54
6 - 10 years	14	2.15	0.58
11 - 15 years	11	2.10	0.49
16 - 40 years	24	2.30	0.49
Total	65	2.19	0.52

For *total years of itinerant teaching* (see Table 22), the ANOVA determined that there was no significant difference among the TSS means for the subgroups. The *F* value was 0.513 which was not statistically significant ($p=.675$).

Table 22

TSS Means for Subgroups based on Total Years of Itinerant Teaching

Experience Subgroups	<i>n</i>	TSS Mean	Standard Deviation
0 - 5 years	24	2.14	0.49
6 - 10 years	23	2.29	0.54
11 - 15 years	13	2.15	0.58
16 - 40 years	6	2.08	0.45
Total	66	2.19	0.51

Next, the TSS means for part-time and full time itinerant teachers were compared to determine if these means differed significantly. The analysis determined that there was no significant difference between the mean for part-time teachers ($\bar{x}=2.15$, $n=32$), and the mean for full-time teachers ($\bar{x}=2.23$, $n=34$). The *F* value was 0.431 which was not statistically significant ($p=.514$).

To determine if having two or more roles in a district was stressful, an ANOVA was completed comparing the TSS means of two subgroups: those with two or more

roles and those with one role. Although the subgroup which had two or more roles had a higher mean ($\bar{x}=2.25$, $n=9$) than those with one role ($\bar{x}=2.19$, $n=56$), the means did not differ significantly ($F=0.103$, $p=.749$).

The TSS means for district size were then compared to determine if the size of a district influenced the stress levels of the teachers. A large district was defined as a district with greater than 2.0 FTE teachers of the deaf and hard of hearing, and a small district was defined as a district with less than or equal to 2.0 FTE teachers. The analysis determined that there was no significant difference between the mean for small districts ($\bar{x}=2.15$, $n=26$) and the mean for large districts ($\bar{x}=2.21$, $n=40$). The F value was 0.247 which was not statistically significant ($p=.621$).

To determine whether being CAEDHH certified influenced the stress levels of the teachers, an ANOVA was performed on the TSS means comparing those who were certified and those who were not. Although the mean for those who were uncertified ($\bar{x}=2.38$, $n=7$) was higher than the mean for those who were certified ($\bar{x}=2.17$, $n=59$) the means were not significantly different. The F value was 1.09 which was not statistically significant ($p=.301$).

Sources of Stress in Relation to Total Stress Scores

The sources of stress for itinerant teachers of the deaf and hard of hearing in BC were generated from the data provided by the Teacher Stress Inventory (TSI) and the Itinerant Teacher Questionnaire (ITQ). These sources of stress were examined to determine their influence on the stress level of itinerant teachers of the deaf and hard of hearing.

Teacher Stress Inventory (TSI)

Comparing the means of the subscales for sources of stress, it was evident that *work-related* stressors and *time management* stressors were rated higher than the other subscales (see Table 23). Also, teachers were most in agreement with the rating of *time management*, since its standard deviation was the lowest.

Table 23

TSI Sources of Stress Subscale Means

<u>Subscale</u>	<u><i>n</i></u>	<u>Mean</u>	<u>Standard Deviation</u>
Work-Related Stressors	66	3.17	0.97
Time Management	66	2.90	0.62
Professional Distress	66	2.25	0.99
Professional Investment	68	2.14	0.91
Discipline & Motivation	68	1.78	0.66

Straight comparisons of the subscale means was not a fair test of significance, because the norms indicated that teachers usually rated *work-related stressors* and *time management* sources of stress higher than the others (see Table 6).

Individual scores were compared to the norms provided to determine their significance level (significantly high, moderate, or significantly low, see Table 6). However, caution should be exercised when comparing BC itinerant teachers to the norms, because the norms were collected from the northeast, mid-Atlantic, and southeastern states of the US. For a normal distribution, one would expect that approximately 68% of individual subscale scores to lie within the moderate level and about 16% to lie above and 16% below. Table 24 displays the percentage of respondents within the significance levels for sources of stress subscales.

Table 24

Percentage of Respondents within Significance Levels

Subscale	<i>n</i>	Significantly High	Moderate	Significantly Low
Work-Related Stressors	66	16.7%	65.2%	18.2%
Time Management	66	3.0%	77.3%	19.7%
Professional Investment	68	5.9%	54.4%	39.7%
Professional Distress	66	6.1%	42.4%	51.5%
Discipline & Motivation	68	0.0%	38.2%	61.8%

Compared to the norms, it appeared that all the subscales except *work-related stressors* were skewed to the low end, meaning that BC itinerant teachers were generally responding below the norms provided. However, the *work-related stressors* subscale approximated a normal distribution, meaning that the teachers were responding similarly to the norms.

Means of individual items on the TSI are displayed in Appendix D. The item with the highest mean was item #6, *I feel uncomfortable wasting time*, with a mean of 3.59. The item with the second highest mean was item #7, *There isn't enough time to get things done*, with a mean of 3.53. Both of these items are in the *time management* subscale and contribute to its high rating by itinerant teachers. Three *work-related stressors* (*there is too much work to do*, *there is too much administrative paperwork in my job*, and *my caseload/class is too big*) had the next highest means ($\bar{x}=3.45$, $\bar{x}=3.30$, $\bar{x}=3.27$ respectively).

Itinerant Teacher Questionnaire (ITQ)

The sources of stress from the ITQ which were analyzed included: age levels taught, working in secondary schools, students with other special needs, mandating caseloads, frequency of weather interference, teacher isolation, communication with school personnel, ability to have a room assigned, room quality, parental support, teacher appreciation, and teacher education.

To determine if student diversity influenced itinerant teacher stress levels, subgroups were created based on age groups supported by the itinerant teacher. On the ITQ, teachers indicated which age groups (pre-school, primary, intermediate, secondary) they provided support for. The subgroups created for this analysis were: one age group supported, two age groups supported, three age groups supported, and four age groups supported. The ANOVA determined that there was no significant difference among the TSS means for the subgroups (see Table 25). The *F* value was 0.929 which was not statistically significant ($p=.432$).

Table 25

TSS Means for Subgroups based on Number of Age Groups Taught

Number of Age Subgroups	<i>n</i>	TSS Mean	Standard Deviation
1 age group	4	2.33	0.22
2 age groups	14	2.16	0.53
3 age groups	40	2.13	0.54
4 age groups	7	2.47	0.41
Total	65	2.19	0.52

An ANOVA was completed to determine if teachers who taught in the secondary setting were more stressed than those who did not. The TSS mean of the subgroup which taught secondary ($\bar{x}=2.21$, $n=51$) was compared to the TSS mean of the

subgroup who did not ($\bar{x}=2.10$, $n=14$), and it was determined that the means were not significantly different ($F=0.511$, $p=.477$), even though the TSS mean for the subgroup who taught secondary was higher.

To check if direct support students who have other special needs affected the stress levels of itinerant teachers, the TSS means for subgroups based on the numbers/FTE of such students were compared. Three subgroups (see Table 26) were created: those with few direct support students (0-2) with other special needs, those with some (between 2-4), and those with many (>4). The ANOVA of the TSS means established that the means were not significantly different ($F=2.49$, $p=.091$).

Another ANOVA was performed to determine if mandating caseloads influenced itinerant teacher stress levels. This comparison was suggested by the Itinerant Committee representing itinerant teachers working with deaf and hard of hearing students. The ITQ asked itinerant teachers whether they felt caseloads should be mandated. The analysis determined that there was a significant difference ($p=.003$, Table 26

TSS Means for Subgroups based on Students with Other Special Needs

Subgroup	<i>n</i>	TSS Mean	Standard Deviation
Few (0-2)	34	2.18	0.53
Some ($2 < x < 4$)	12	1.99	0.44
Many (>4)	17	2.41	0.50
Total	63	2.21	0.52

see Table 27) among the TSS means for those who answered *Yes* ($\bar{x}=2.47$, $n=23$), *No* ($\bar{x}=1.98$, $n=23$), and *Undecided* ($\bar{x}=2.10$, $n=19$). Post Hoc tests determined that the *Yes* subgroup (in favour of mandated caseloads) had a significantly higher TSS

mean than both the *No* subgroup (not in favour of mandated caseloads) and the *Undecided* subgroup (see Table 28).

Table 27

ANOVA of TSS Means by Mandating Caseload Subgroups

	Sum of Squares	df	Mean Square	F	Significance
TSS					
Between Groups	2.92	2	1.46	6.35	0.003
Within Groups	14.22	62	0.23		
Total	17.14	64			

Table 28

Post Hoc Comparisons for Mandating Caseloads

Comparison	Mean Difference	Standard Error	Significance
Yes/No	0.49	0.14	0.003
Yes/Undecided	0.37	0.15	0.048
No/Undecided	0.12	0.15	1.000

Note. Dependent Variable was TSS mean, and Bonferroni Post Hoc Test was performed.

With respect to travel, an ANOVA measured whether the TSS means for frequency of weather interference were significantly different. Subgroup means indicated a trend: the more frequent the interruption, the higher the TSS mean (see Table 29). Although, the ANOVA concluded that significant differences existed (see Table 30), the Post Hoc Multiple Comparison Tests indicated that there were no significant differences among the means (see Table 31).

Table 29

TSS Means for Subgroups based on Interference by Weather

Subgroup	<i>n</i>	TSS Mean	Standard Deviation
Always	0	-	-
Frequently	2	2.18	0.39
Sometimes	13	2.40	0.59
Rarely	35	2.25	0.47
Never	16	1.89	0.47
Total	66	2.21	0.51

Table 30

ANOVA of TSS Means by Subgroups based on Interference by Weather

	Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	Significance
TSS					
Between Groups	2.12	3	0.71	2.91	.041
Within Groups	15.02	62	0.24		
Total	17.14	65			

Table 31

Post Hoc Comparisons for Subgroups based on Interference by Weather

Comparison	Mean Difference	Standard Error	Significance
Never/Rarely	0.36	0.15	.133
Never/Sometimes	0.51	0.18	.064
Never/Frequently	0.29	0.37	.895
Rarely/Sometimes	0.15	0.16	.830
Rarely/Frequently	0.07	0.36	.998
Sometimes/Frequently	0.22	0.37	.950

Note. Dependent Variable was TSS mean, and Scheffe Post Hoc Test was performed.

To determine whether teacher isolation influenced the stress level of teachers, an ANOVA was completed. The analysis determined that there was no significant difference between the mean for itinerant teachers who worked alone in a district ($\bar{x}=2.31$, $n=14$) and the mean for those who had colleagues in the district ($\bar{x}=2.16$, $n=52$). The F value was 0.952 which was not statistically significant ($p=.340$).

To ascertain whether communication with school personnel influenced teacher stress levels, an ANOVA examined the TSS means of subgroups based on teacher ratings for this issue. Although the means showed a definite trend (the poorer the rating of communication, the higher the TSS mean, see Table 32), the differences were not significant ($F=1.22$, $p=.312$).

Table 32

TSS Means for Subgroups based on Communication with School Personnel

Subgroup	n	TSS Mean	Standard Deviation
Excellent	15	2.00	0.46
Good	38	2.21	0.54
Satisfactory	11	2.30	0.48
Poor	2	2.53	0.18
Very poor	0	-	-
Total	66	2.19	0.51

Another ANOVA was performed on TSS means for subgroups based on ratings for the ability to have rooms at a school assigned to the teacher. The *good* and *excellent* subgroups were combined, because only one subject rated this item as *excellent* and the running of Post Hoc Tests was desired. The subgroup TSS means illustrated somewhat of a trend (see Table 33), and the ANOVA concluded that some means were significantly different (see Table 34). Post Hoc comparisons

determined that the TSS mean for the *satisfactory* subgroup was significantly different from the TSS means for the *poor* and *very poor* subgroups (see Table 35).

Table 33

TSS Means for Subgroups based on the Ability to have Rooms Assigned

Subgroup	<i>n</i>	TSS Mean	Standard Deviation
Excellent/Good	13	2.09	0.34
Satisfactory	16	1.80	0.53
Poor	23	2.42	0.50
Very poor	13	2.41	0.31
Total	65	2.20	0.51

Table 34

ANOVA of TSS Means by Subgroups based on the Ability to have Rooms Assigned

	Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	Significance
TSS					
Between Groups	4.39	3	1.46	7.27	.000
Within Groups	12.26	61	0.20		
Total	16.65	64			

Table 35

Post Hoc Comparisons for Subgroups based on the Ability to have Rooms Assigned

Comparison	Mean Difference	Standard Error	Significance
Excellent-Good/Satisfactory	0.29	0.17	.392
Excellent-Good/Poor	0.32	0.16	.238
Excellent-Good/Very poor	0.32	0.18	.349
Satisfactory/Poor	0.62	0.15	.001
Satisfactory/Very poor	0.62	0.17	.007
Poor/Very poor	0.00	0.16	.999

Note. Dependent Variable was TSS mean, and Scheffe Post Hoc Test was performed due to unequal sample sizes.

An ANOVA was performed on the TSS means to ascertain whether the rating of room quality influenced teacher stress levels. The ANOVA examined the TSS means of subgroups based on teacher ratings for this issue. Although the means showed a weak trend (the poorer the rating of room quality, the higher the TSS mean, see Table 36), the differences were not significant ($F=1.56, p=.208$).

Table 36

TSS Means for Subgroups based on Ratings of Room Quality

Subgroup	<i>n</i>	TSS Mean	Standard Deviation
Excellent	0	-	-
Good	10	2.20	0.55
Satisfactory	22	2.05	0.58
Poor	18	2.23	0.47
Very poor	14	2.42	0.38
Total	64	2.20	0.51

To determine if parental support affected teacher stress levels, an ANOVA examined the TSS means of subgroups based on teacher ratings for parental support. The means showed no trend (see Table 37), and the differences were not significant ($F=2.17, p=.084$).

Table 37

TSS Means for Subgroups based on Ratings of Parental Support

Subgroup	<i>n</i>	TSS Mean	Standard Deviation
Excellent	11	2.31	0.34
Good	35	2.09	0.55
Satisfactory	12	2.47	0.36
Poor	3	1.72	0.60
Very poor	4	2.17	0.64
Total	65	2.19	0.52

TSS means were analyzed according to the respondents' perceptions of being appreciated or not. The ITQ asked itinerant teachers whether they felt acknowledged, recognized, or appreciated by students, parents, administration, and/or district. The analysis determined that there was no significant difference among the means for those who answered *Yes* ($\bar{x}=2.15$, $n=48$), *No* ($\bar{x}=2.50$, $n=4$), and *Undecided* ($\bar{x}=2.22$, $n=11$). The *F* value was 0.873 which was not statistically significant ($p=.423$).

To determine if teacher training influenced itinerant teacher stress levels, an ANOVA was performed, and subgroups were created based on the respondents rating of their teacher preparation. The subgroups created for this analysis were: *excellent/good*, *satisfactory*, and *poor/very poor*. The *poor* and *very poor* subgroups were combined because there was only one value for the *very poor* group. The analysis determined that there was no significant difference among the means for those rated their teacher preparation as *excellent/good*, *satisfactory*, and *poor/very poor* (see Table 38). The *F* value was 0.400 which was not statistically significant ($p=.672$).

Table 38

TSS Means for Teacher Education Subgroups

Subgroup	<i>n</i>	TSS Mean	Standard Deviation
Excellent/Good	27	2.11	0.51
Satisfactory	19	2.17	0.61
Poor/Very Poor	17	2.26	0.39
Total	63	2.17	0.51

Multiple Regression Analysis of TSS with Demographic Variables and Sources of Stress from the ITQ

Since no literature examined the stress levels of itinerant teachers of the deaf and hard of hearing, there was a need to attempt to identify a set of variables which may be associated with stress for this population. A backwards multiple regression analysis was performed to determine which demographic variables and sources of stress from the ITQ explained the most variation in TSSs. It was decided not to perform a stepwise multiple regression because the sample size of the data was small ($n=70$) and a stepwise multiple regression was too stringent.

First, to test the assumption that part-time and full-time teachers responded similarly to ITQ items, ANOVAs were performed on the means of items which were converted to a 1.0 FTE basis. This was necessary because the raw data were being converted to new values, which were to be used in the preliminary correlations and multiple regression analysis. The results of these ANOVAs indicated that all items, except two, could be converted and used in the analysis (see Appendix E). The two items that had significant differences in the way part-time and full-time teachers responded to them were: *time spent dealing with auditory training equipment* and *total number of schools the teacher was responsible for*. These two items could not be used in correlational and regression analyses.

Second, a matrix of intercorrelations between items from the ITQ and the TSSs was constructed (see Table 39 and Appendix F), and highly correlated sources of stress were selected for the regression. Then, using the selected sources of stress as the independent variables and the TSS as the dependent variable, a backwards multiple regression analysis was run, and the model with the highest adjusted R^2 was selected as the best model to use.

Table 39

Correlations of TSSs to Demographic Variables and Sources of Stress

Variable	Correlational coefficient	Significance	<i>n</i>
<i>Pearson r Correlations</i>			
Number/FTE of support staff worked with	.43**	.01	34
Number/FTE of direct students inadequately supported	.31**	.01	64
Number/FTE of students on consult caseload	-.25*	.05	61
Total FTE of teachers of the deaf and hard of hearing in the district	.14	.25	66
Number of teachers of the deaf and hard of hearing in the district	.13	.31	66
Mileage(km)/FTE each week	.13	.33	64
Number of years working with deaf and hard of hearing students	.12	.36	65
Number/FTE of direct students with other special needs	.11	.38	63
Number of years of total teaching experience	.10	.41	65
Number/FTE of students on direct caseload	.10	.42	66
Number/FTE of hours travelling each week	.10	.46	63
Itinerant FTE	.09	.49	66
IEPs authored as a percent of direct caseload	-.06	.62	65
Number/FTE of hours directly working with students each week	.05	.69	58
Number of years working as an itinerant teacher of the deaf and hard of hearing	-.05	.70	66
Average number of schools directly serviced each day	.04	.74	65
Number/FTE of hours preparing lessons each week	.02	.87	61
Number/FTE of designated office hours each week	.00	.99	63

Table 39 (continued)

Variable	Correlational coefficient	Significance	n
<i>Spearman's Rho Correlations</i>			
Ability to have specific rooms assigned in schools	-.41**	.00	65
Frequency of weather interfering with travel	.32**	.01	66
Room quality	-.26*	.04	64
Communication with school personnel	-.24*	.05	66
Frequency of meeting colleagues	-.16	.20	66
Itinerant teacher training	-.13	.30	63
Number of age groups taught	.04	.78	65
Parental support	.03	.80	65

Note: ** = Correlation is significant at the .01 level (2-tailed)

* = Correlation is significant at the .05 level (2-tailed)

From the first backwards multiple regression analysis, it was determined that coefficients of five sources of stress from the ITQ could be combined in a multiple regression equation to predict the dependent variable, the TSS from the TSI. These five sources of stress were: *the total number/FTE of support staff which a teacher works with, the number/FTE of students on the consultation caseload, the overall ability to have specific rooms assigned, the frequency of weather interfering with travel, and the rating of communication between school personnel and the teacher.* Though an ANOVA determined that the whole model significantly ($F=4.074$, $p=.008$) explains this variance, the calculation of the coefficients found that only one coefficient of a source of stress, *the total number/FTE of support staff which a teacher works with*, was significantly ($p=.004$) non-zero in the multiple regression equation (see Table 40).

Table 40

Backwards Multiple Regression of Variables on TSS Scores

Variable	b*	Beta*	t	Significance
Total number/FTE of support staff worked with	6.80	.48	3.15	.004
Number/FTE of students on consult caseload	-6.11	-.29	-1.70	.102
Ability to have specific rooms assigned in schools	-8.97	-.19	-1.21	.238
Frequency of weather interfering with travel	0.12	.20	1.21	.239
Communication with school personnel	-0.14	-.19	-1.17	.255
Note: Multiple R = .678 $R^2 = .459$ Adjusted $R^2 = .346$ $p = .008$ Standard Error = 0.384 $df = 29$ $F = 4.07$ $n = 30$ b* = Unstandardized B Beta* = Standardized Beta				

Since the sample size for the first multiple regression was low ($n=30$) due to the low response rate of one question, a second regression was performed. To check that a larger sample would produce similar results, the question with the low response rate (*the total number/FTE of support staff which a teacher works with*) was removed, and a second regression was run. From the second backwards multiple regression analysis, it was determined that four similar sources of stress from the ITQ could be combined in a multiple regression equation to predict the dependent variable, the TSS. These four sources of stress were: *the overall ability to have specific rooms assigned, the number/FTE of direct support students who are inadequately supported, the number/FTE of students on the consultation caseload, and the frequency of weather interfering with travel*. Though an ANOVA

determined that the whole model significantly ($F=4.797, p=.002$) explains this variance, the calculation of coefficients found that only one coefficient of source of stress, *the overall ability to have specific rooms assigned*, was significantly ($p=.030$) nonzero in the multiple regression equation (see Table 41).

Table 41

Backwards Multiple Regression of Selected Variables on TSS Scores

Variable	b*	Beta*	t	Significance
Ability to have specific rooms assigned in schools	-0.14	-.28	-2.23	.030
Number/FTE of direct students who are inadequately supported	-2.56	-.20	-1.60	.117
Number/FTE of students on consult caseload	-4.66	-.18	-1.45	.153
Frequency of weather interfering with travel	0.12	.17	1.34	.185
Note: Multiple R = .519 $R^2 = .270$ Adjusted $R^2 = .213$ $p = .002$ Standard Error = 0.468 $df = 56$ $F = 4.80$ $n = 57$ b* = Unstandardized B Beta* = Standardized Beta				

Manifestations of Stress

Stress becomes evident in terms of manifestations which may be exhibited through emotional, fatigue, cardiovascular, gastronomical and behavioral symptoms. Table 42 displays the means and standard deviations for the manifestation of stress subscales. *Emotional* and *fatigue* manifestations had the highest means of the subscales.

Table 42

TSI Manifestations of Stress Subscale Means

Subscale	Mean	Standard Deviation
Emotional	2.48	0.92
Fatigue	2.38	0.93
Cardiovascular	1.72	0.92
Gastronomical	1.62	0.95
Behavioral	1.44	0.53

Note: $n=68$

Individual subscale scores were compared to the norms provided to determine their significance level (significantly high, moderate, or significantly low, see Table 6). The percentage of individuals in each significance level were compared to the normal distribution of subscale scores. For a normal distribution of subscale scores, one would expect that approximately 68% of individual subscale scores to locate within the moderate significance level and about 16% to locate above and 16% below.

Both the *emotional* and *fatigue* manifestations were identified as the most significant for itinerant teachers (see Table 43). Of the respondents, a large portion (73.5%) indicated that *emotional manifestations* were significantly high, 14.7% identified them as moderate, and 11.8% identified them as significantly low.

Fatigue manifestations were another set of manifestation experienced by many of the itinerant teachers. Of the respondents, 66.2% of them identified this subscale as significantly high, 22.1% as moderate, and 11.8% as significantly low.

Table 43

Percentage of Respondents within Significance Levels

Subscale	Significantly High	Moderate	Significantly Low
Emotional	73.5%	14.7%	11.8%
Fatigue	66.2%	22.1%	11.8%
Cardiovascular	41.2%	5.9%	52.9%
Gastronomical	30.9%	11.8%	57.4%
Behavioral	19.1%	42.6%	38.2%

Note: $n=68$

Over half (52.9%) of the respondents reported that the *cardiovascular manifestation* subscale was significantly low. However, almost half (41.2%) reported this subscale as significantly high. Only 5.9% of the respondents indicated that cardiovascular manifestations were moderate.

Again, over half (57.4%) of the itinerant teachers indicated that *gastronomical manifestations* were significantly low, 30.9% as significantly high, and 11.8% as moderate.

Many (42.6%)of the respondents indicated that *behavioral manifestations* were moderate, 38.2% identified them as significantly low, and 19.1% as significantly high.

Means of individual items of the TSI are displayed in Appendix D. The manifestation item with the highest mean was item #34, *I respond to stress by feeling anxious*, with a mean of 3.16. The manifestation item with the second highest mean was item #38, *I respond to stress with physical exhaustion*, with a mean of 2.66. The manifestation item with the third highest mean was item #37, *I*

respond to stress by becoming fatigued in a very short time, with a mean of 2.49. Both of these last two items are in the *fatigue* subscale and contribute to its high rating by itinerant teachers.

Summary

The Typical BC Itinerant Teacher of the Deaf and Hard of Hearing

Demographic Characteristics

The typical itinerant teacher providing service to Deaf, deaf, and hard of hearing students in BC had 15.7 years of total teaching experience, had worked with Deaf, deaf, and hard of hearing students for 13.2 years, and had been an itinerant teacher of the deaf and hard of hearing for 8.6 years.

The typical itinerant teacher worked part-time, approximately 0.80 FTE, had attained CAEDHH certification, worked alongside four teachers of the deaf and hard of hearing, and met frequently (monthly or more often) with colleagues.

Caseload

The typical itinerant teacher (based on a 1.0 FTE) had a direct caseload of 18 students and a consult caseload of 21 students, for a total of 39 students.

The itinerant teacher worked mainly with direct support students who were oral/aural, primary and intermediate aged, and who experienced a bilateral hearing loss. Many (11 out of 18) direct students wore hearing aids, 7 students used a personal FM, and 1 or 2 students used a Free Field FM. Four of the students had additional special needs, and on average, four were thought to be inadequately serviced within an itinerant model.

Responsibilities

The typical teacher was responsible for about 10 schools and visited 3 schools each day.

The typical itinerant teacher authored or casemanaged 12 (out of 18) direct student IEPs, which took approximately 5.7 hours each (for each student per year). The IEP process was considered to be very worthwhile.

Each week, the typical itinerant teacher spent 7.1 hours preparing for student lessons, worked 19.1 hours directly with the students, drove for 6.5 hours, spent 2.1 hours addressing ATE needs, and had 2.3 hours of designated office/preparation time. The total of these responsibilities is 37.1 hours, without taking into account other responsibilities such as report writing, IEPs, phone calls, committee work, and meetings.

Itinerant teachers worked with a large number of professionals within the school and community settings. The typical itinerant teacher worked with approximately 63 school and community personnel, and they felt that communication between school personnel and themselves was good or satisfactory. Also, the typical itinerant teacher worked with at least one health unit and felt the contact, support, and ATE repairs were completed adequately or better.

Mileage and Travel

Travel is a distinguishing trademark of an itinerant teacher. The typical teacher travelled an average of 174 km/week by car, with an average distance of 15 km between locations, and with 47 km to the furthest school. The service to students was never or rarely interrupted by weather or climate.

Issues

Difficulty finding working space in a school was a problem for the itinerant teacher, and when space was found, its quality was usually poor or very poor (based on student and teacher needs).

The most demanding months of the school year for the typical teacher was September, October, and June due to IEPs and scheduling.

The typical itinerant teacher received good parental support and felt acknowledged, recognized, or appreciated by students, parents, administration, district for their efforts.

Sources of Stress Summary.

In summary, the likely sources of stress for BC itinerant teachers of the deaf and hard of hearing were: work-related stressors (i.e., too much work, too much paperwork, etc.), time management stressors (i.e., feeling uncomfortable wasting time, not enough time, overcommitting, etc.), lower consult caseload numbers, frequent interference of travel by weather, larger numbers of support staff worked with, poorer communication with school personnel, poorer ability to have rooms assigned in schools, and poorer quality of rooms to work in.

Manifestations of Stress Summary.

In summary, the predominant manifestations of stress for BC itinerant teachers of the deaf and hard of hearing were emotional manifestations (anxious, insecure, etc.) and fatigue manifestations (physical exhaustion, becoming fatigued in a short time, etc.). These manifestations were rated the highest by the subjects, and they were rated high compared to TSI norms.

CHAPTER 5: DISCUSSION AND RECOMMENDATIONS

Discussion

Assumptions

Most researchers make assumptions and this project was no exception. For this project, the following assumptions were made:

1. Variables that relate to stress levels of itinerant teachers exist and can be measured.
2. The Total Stress Score (TSS) of the TSI accurately measured the stress level for itinerant teachers.
3. Norms provided by the TSI for TSS comparisons were appropriate for BC itinerant teachers of the deaf and hard of hearing.
4. No interaction existed among the cover letter, ITQ, and TSI. They were independent of one another.

Expectations and Comparisons with the Literature on Stress

Total Stress

Was stress a significant issue for BC itinerant teachers of the deaf and hard of hearing? Using the Total Stress Score (TSS) of the TSI and comparing it to norms of American educators, only 3.0% of the teachers had significantly high TSSs when compared to both regular and special educator norms (see Table 19). One reason why these numbers were low could be that the itinerant teachers who did not participate in the project were too stressed to take the time or energy to complete

the questionnaires in May and June, which proved to be one of the most demanding times of the year (see Table 17). None of the previous literature compared the total stress levels of teachers of the deaf and hard of hearing to regular educators or to special educators.

One question that must be asked is whether the TSI accurately measured the stress levels of itinerant teachers of the deaf and hard of hearing. The TSI items were general enough to be relevant for this population, but some questions were more related to classroom teachers. Questions that asked about the lack of promotion/advancement opportunities and feeling frustrated because of discipline problems within the classroom were not particularly relevant for itinerant teachers.

However, the TSI did take into account both sources and manifestations of stress, particular to teachers, to ascertain their stress level. Also, the TSI was one of the few measures normed for regular and special education teacher populations.

Another possible shortfall of using the TSI norms was that they were based on eastern American teachers. Though BC itinerant teachers of the deaf and hard of hearing worked in similar conditions to their American counterparts, the working conditions were certainly not identical.

Another concern with respect to the TSI was a comment written by one subject who, after completing the TSI and recognizing that their TSS score was low (1.5), wrote "But wait!! I'm stressed." It seemed this subject was trying to communicate that the items on the TSI were not necessarily contributing to this individual's level of stress. However, only two subjects (out of 66) made reference to this. This comment also supported the use of the ITQ to further investigate specific sources of stress for itinerant teachers. However, it did raise doubt about the TSI's validity.

To check the validity of the TSS, it would have been astute to ask a direct, 5-point, Likert-type question concerning the stress level of the subjects. This could have been compared to the TSS of the subjects to confirm its validity.

Demographic Variables in Relation to Total Stress Scores

Two statistical operations were performed to determine whether demographic variables from the ITQ had any influence on the stress levels of teachers in this project. The two operations were correlational analysis and analyses of variance among subgroups.

In the analyses of variance for demographic variables, no significant differences among TSS means were found for any of the subgroups for the studied demographic variables: years of experience, part-time/full-time, urban/rural, and certification. These results were consistent with some research (Cichon & Koff, 1980; Hiebert, 1985) but contradicted others (Cedoline, 1982; Farber, 1991; Johnson & Harkins, 1984; Kyriacou, 1989; Meadow, 1981; Retish, 1986; Zabel & Zabel, 1982).

Cichon and Koff (1980) reported findings similar to this project; they found no significant differences among the stress levels for any of the subgroups for their demographic variables (gender, marital status, age, race, type of school, and school size). In his Canadian research summary, Hiebert (1985) reported that demographic variables were not consistent predictors of the stress levels of teachers. He suggested that there could be specific stress related demographic variables for a particular sample, rather than relevant variables across all populations. The results of this project are somewhat consistent with his findings, but this project found no specific stress-related demographic variables.

The first demographic variable analyzed was years of experience. The mean for years working with Deaf, deaf, and hard of hearing students was greater than the mean for years of itinerant teaching. This was consistent with the literature (Luckner & Miller, 1994). A possible explanation for the difference between the means could be the shift in philosophy towards mainstreaming in past years, causing teachers to move from resource rooms, schools, or classes to itinerant teaching.

BC itinerant teachers generally had more experience than their American counterparts. The mean number of years working as an itinerant teacher of the deaf and hard of hearing was 8.6 years for BC teachers and 7.3 years for American teachers. The mean number of years working with deaf and hard of hearing students was 13.2 years for BC teachers and 12.7 years for American teachers. A possible explanation on why these numbers are greater for BC teachers was that the American teachers were surveyed at least three years earlier, closer to the implementation of PL 94-142.

Farber (1991), Johnson and Harkins (1984), Meadow (1981), Retish (1986), and Zabel and Zabel (1982) reported that years of experience influenced the stress level of teachers. However, their results were contradictory. Farber (1991), Retish (1986), and Zabel and Zabel (1982) reported that less experienced teachers had higher stress levels, yet Johnson and Harkins (1984) and Retish (1986) reported that more experienced teachers had higher stress levels. Meadow (1981) found that mid-career teachers were more stressed. In this project, it was hypothesized that less experienced teachers would have higher stress levels (higher TSSs) than more experienced teachers, because they have not established routines and coping techniques in their new positions. Data on three types of years of experience (total

teaching experience; years working with Deaf, deaf, and hard of hearing students; and years working as an itinerant teacher of the deaf and hard of hearing) were collected and analyzed. The correlations to TSSs were extremely weak and not significant (see Table 39). For the analyses of variance, the subgroups created were 0-5 years, 6-10 years, 11-15 years, and 16-40 years, and their TSS means were compared (see Tables 20, 21, and 22). Although the trend was that more experienced teachers had higher stress levels, none of the subgroups had significantly different TSS means (see Chapter 4).

It was found that the numbers of teachers working part-time and full-time were very even. Reasons why this was true could be due to the funding for itinerant programs, which is based on student numbers, and to the gender of the teachers. Most itinerant teachers were female (Jericho Outreach Program, 1997), and they may have preferred part-time teaching due to lifestyle choices.

To determine if a teacher's itinerant FTE had any influence on their stress level, the subjects' itinerant FTEs were correlated to their TSSs and the TSS means for full-time and part-time teachers were compared in an ANOVA. The correlation of itinerant FTEs to TSSs was extremely weak and not significant (see Table 39). The ANOVA determined that the TSS means for part-time teachers was not significantly different from the mean for full-time teachers. These results were consistent with the study by Zabel and Zabel (1982) who examined the length of the work week for special education teachers. Interestingly, these results suggest that working part-time does not reduce one's stress level as generally believed. Two subjects mentioned that they had accepted part-time positions to decrease their stress levels. However, an alternative explanation could be that teachers were working at their appropriate FTE level in relation to stress. This would mean that

if part-time teachers increased their FTE, their stress levels may increase. In support of this explanation, the TSSs for the subjects were below the norms, indicating that many teachers were not stressed within their positions.

It was found that approximately 16% of the respondents had two or more roles in their district. To determine if having two or more roles in a district was stressful, an ANOVA was completed comparing the TSS means of these two subgroups.

Although the subgroup which had two or more roles had a higher mean than those with one role, the means did not differ significantly. A possible explanation for this nonsignificant finding could be the small sample size of the subgroup that had two or more roles, and this contributed to a higher standard error. It could also be that the itinerant teachers with two roles preferred having two roles and enjoyed the job combination. Another explanation could be that the other roles for some teachers were more demanding and for some the other roles were less demanding than the itinerant role. One teacher wrote that "[I] often juggle itinerant paperwork into the 75% of my other position."

Another demographic variable compared in this project was rural teachers versus urban teachers with respect to stress levels. Cedoline (1982) and Farber (1981) stated that urban teachers were more stressed than rural teachers. Therefore, based on the assumption that large districts are predominantly urban in British Columbia, one would expect teachers in large districts (those with greater than 2.0 FTE teachers of the deaf and hard of hearing) to have higher TSSs. Though the TSS mean for large districts was higher than that for small districts, the means were not significantly different. In addition, the correlation of total district FTEs (i.e., total FTE of all the teachers of the deaf and hard of hearing working in the district) to TSSs was weak and not significant (see Table 39). Similarly, based on

the assumption that urban districts would have higher numbers of teachers of the deaf and hard of hearing, one might expect higher stress levels as the number of these teachers increased. Although the increase in the number of teachers of the deaf and hard of hearing was correlated to an increase in TSSs, it was not significant. Therefore, itinerant teachers in large districts did not seem to have higher stress levels as compared to teachers in small districts. In other words, it seemed that teachers in urban areas were not more stressed than teachers in rural areas, and this contradicted the literature. A possible reason for this discrepancy could be that Cedoline (1982) and Farber (1981) reported on data from the United States, where urban issues are much more pronounced. Also, another possible explanation for this finding could be that itinerant teachers choose to work in districts that fit their preferences: those who enjoy living in cities work in urban districts while those who prefer rural living work in rural districts. In addition, itinerant teachers probably service combinations of urban, suburban, and rural schools within their districts. Thus the assumptions to test the rural/urban issue were weak, and thus the analyses were also weak.

One problem with the above ITQ items (i.e., "How many teachers of the deaf and hard of hearing work in your district?" and "What is the total FTE of all these teachers?") was that they could have been misinterpreted to mean only the itinerant teachers. Since the questionnaire regards itinerant teachers, some subjects might have provided only the numbers and FTEs of itinerant teachers. It could be made more clear by stating that they were to report the numbers for all teachers of the deaf and hard of hearing working within their district, not just itinerant teachers.

Nonetheless, the results of the ITQ determined that the mean FTE of all the teachers of the deaf and hard of hearing in a district was 3.63 FTE. However, this was not a good method to ascertain the average district FTE, because large districts, with more teachers of the deaf and hard of hearing, skew the results. A better method to obtain an average would be to sum the FTEs by district and divide by the total number of districts. Using the *Directory of teachers of deaf and hard of hearing students* (Jericho Outreach Program, 1997), the mean was determined to be 2.79 FTE. This was lower than the ITQ method. When this same method was used to determine the average number of teachers of the deaf and hard of hearing in a district, the mean was 3.40 teachers, compared with 4.43 teachers using the ITQ.

Related to the number of teachers of the deaf and hard of hearing was the frequency of meeting with colleagues. Approximately 43% of the participants met weekly or more frequently and about 40% met less than monthly.

Some studies revealed that isolation from other adults or colleagues was a source of stress for teachers (Farber, 1991, and Fimian & Santoro, 1983). This seemed to contradict the literature (Cedoline, 1982; Farber, 1981) which reported that urban teachers (who probably work with more colleagues) were more stressed than rural teachers. An ANOVA was performed on the TSS means of teacher who worked alone and of those who didn't, and it was found that the means did not differ significantly. Also, the frequency of meeting with colleagues was correlated to TSSs, and it was determined that they were weakly, but not significantly correlated. The results were not significant but the trend described in the literature was apparent in the results of this study. One reason why the ANOVA results were not significant could be due to the sample size of the *alone* subgroup which contributed to a high standard error. A reason why the correlation was not

significant could be due to the irregular distribution of the frequency of meeting with colleagues (see Table 7). Furthermore, the literature was contradictory within this area of large/small, urban/rural, and isolated/not isolated. In addition, it could be that itinerant teachers who prefer to work in isolation do so and those who prefer to work amongst colleagues do so.

The last demographic variable that was investigated was the effect of CAEDHH certification on stress levels. The results indicated that 88.6% of the participants were certified. Explanations of this result could be that those who were uncertified felt uncomfortable participating in the project or that previously uncertified teachers had recently attained certification. The results were somewhat lower than the 97% of American itinerant teachers, who had state certification (Luckner & Miller, 1994). A reason for this difference could be that American districts have less difficulty acquiring qualified teachers of the deaf and hard of hearing.

Zabel and Zabel (1982) reported that teacher qualifications had no effect on stress levels of special educators. To test which would be true for itinerant teachers, an ANOVA was performed on the TSS means for subgroups based on self-reported certification status. The results demonstrated that although the TSS mean for the certified subgroup was lower than the mean for the uncertified subgroup, the means were not significantly different. An explanation for the nonsignificant difference could be the small sample size of the uncertified subgroup, contributing to a higher standard error. Also, it could be that the uncertified teachers that participated in the project feel comfortable in this role, possibly due to years of experience in the position or to experience in related work. In addition, some uncertified teachers may qualify for certification but have not applied for it.

Sources of Stress in Relation to Total Stress Scores

The sources of stress for itinerant teachers of the deaf and hard of hearing in BC were generated from the data provided by the Teacher Stress Inventory (TSI) and the Itinerant Teacher Questionnaire (ITQ). These sources of stress were examined to determine their influence on the stress level of itinerant teachers of the deaf and hard of hearing.

Teacher Stress Inventory (TSI). On the TSI, BC itinerant teachers of the deaf and hard of hearing rated *work-related* stressors (i.e., too much work, paperwork, students, etc.) and *time management* stressors (i.e., feeling uncomfortable wasting time, not enough time, overcommitting, etc.) higher than *professional distress*, *professional investment*, and *discipline and motivation* stressors (see Table 23).

Much of the literature supported the finding that *work-related* stressors and *time management* stressors were rated highly by the participants. All studies that examined work overload or lack of time (Cedoline, 1982; Farber, 1991; Fimian & Santoro, 1983; Hiebert, 1985; Johnson & Harkins, 1984; Kyriacou, 1989; Weiskopf, 1980) found that these variables were sources of stress for teachers. Also, Luckner and Miller (1994) reported that American itinerant teachers of the deaf and hard of hearing highly rated factors related to time (i.e., time constraints and caseload numbers) with respect to factors which limited their ability to effectively deliver services. In addition, Farber (1991) and Johnson & Harkins (1984) indicated that the amount of paperwork and/or developing Individual Education Plans were sources of stress for teachers. Related to these two subscales, the finding that high caseloads contribute to higher stress levels for teachers was substantiated by many

researchers (Cedoline, 1982; Cichon & Koff, 1980; Farber, 1991; Fimian & Santoro, 1983; Weiskopf, 1980; Zabel & Zabel, 1982).

However, when compared to the norms of the TSI (see Table 6), it was determined that the patterns of responses to sources of stress subscales were generally lower than the norms (see Table 24). Only the *work-related* stressors subscale approximated a normal distribution of scores with 16.7% in the significantly high range, 65.2% in the moderate range, and 18.2% in the significantly low range. An interpretation of these results could be that BC itinerant teachers of the deaf and hard of hearing had typical *work-related* levels of stress as compared to the norms, and had lower than normal levels of stress within the other subscales. The *time management* subscale was skewed lower than the norms, but it was the next closest approximation of a normal distribution.

Nonetheless, teachers provided anecdotal comments which supported the higher rating of *work-related* stressors and *time management* stressors. For funding of itinerant programs in BC, teachers shared that they were responsible for the appropriate paperwork to qualify for funding. Also, some teachers felt pressured by administrators to have large caseloads to bring in more funding to the district. One teacher wrote:

Without caseloads being mandated, school boards which are always underfunded or strapped for money will load up the caseloads of an itinerant teacher in order to collect the funding for the student without providing the appropriate service to the student.

Another teacher shared, "Some students who don't meet the criteria for funding are put on my caseload (by the school district) and I don't have any control on this."

Higher caseloads could mean more paperwork, more preparation, and a lack of time to meet the needs of and to meet with all students. Therefore, it was not surprising

to find *work-related* stressors and *time management* stressors rated higher than the others.

From the quotes above, it might be expected that *professional investment* stressors would also be rated high, because these stressors included rating the lack of control over decisions. Some studies (Cedoline, 1982; Farber, 1991; Retish, 1986) indicated that this stressor contributed to teacher stress levels. In fact, the lack of control over decisions (TSI item #27) was rated high (see Appendix D), but the other stressors within this subscale were rated lower, bringing the subscale mean lower. Another stressor in this subscale was "my personal opinions are not sufficiently aired" (TSI item #26), and it was rated low, perhaps since itinerant teachers are considered experts within their field. The other stressors had mixed ratings, perhaps because they depended on the individual (emotionally/intellectually stimulated on the job) and their location (opportunities for professional improvement). When compared to the norms, only 5.9% of the respondents scored significantly high in this subscale, indicating it was not a major source of stress (see Table 24).

The literature indicated that student *discipline and motivation* stressors almost always contribute to overall teacher stress (Cedoline, 1982; Cichon & Koff, 1980; Farber, 1991; Fimian & Santoro, 1983; Hiebert, 1985; Johnson & Harkins, 1984; Kyriacou, 1989). However, in fact, student *discipline and motivation* stressors were found to be rated lower than *work-related* and *time management* stressors (see Table 23). When compared to the norms, none of the respondents scored significantly high on the subscale (see Table 24). A possible reason behind this finding could be that itinerant teachers tend to work one-to-one or in small groups with students rather than in classroom settings.

With respect to *professional distress* stressors, a range of stressors were measured. Generally, teachers take training in deaf education to teach Deaf, deaf, and hard of hearing students, not to progress rapidly, pursue promotions, increase their salary, or seek advancement opportunities (see TSI *professional distress* subscale, Appendix C). However, since an itinerant teacher works independently with little supervision and since school personnel may not understand the nature of an itinerant's job, itinerant teachers may feel that they lack recognition and respect for the job they do. Many studies indicated that *professional distress* stressors (i.e., inadequate salary, lack of promotion or advancement, lack of recognition, low status of teachers, and lack of perceived success) influenced teacher stress levels (Cedoline, 1982; Cichon & Koff, 1980; Dunham, 1992; Farber, 1991; Fimian & Santoro, 1983; Johnson & Harkins, 1984; Kyriacou, 1989; Retish, 1986; Weiskopf, 1980; Zabel & Zabel, 1982). When compared to the norms, the distribution of the scores for the *professional distress* subscale were skewed to the low end, and only 6.1% scored significantly high (see Table 24). This indicated that *professional distress* sources of stress were less of a concern for itinerant teachers than regular education teachers for the reasons aforementioned.

Itinerant Teacher Questionnaire (ITQ). A number of items on the ITQ were examined to determine if they were correlated with higher teacher stress levels. These items concerned an itinerant teacher's caseload, preparation time and paperwork, mileage, personnel and working space, auditory training equipment, and the support for and role of the itinerant teacher.

(i) Caseload

The results of the ITQ determined that the average *direct* caseload was 18.0 students/FTE. The spread of the numbers was surprising with the lowest at 7.0 students/FTE and the maximum at 65.0 students/FTE (13.0 students on a 0.20 FTE). This spread in the data calls attention to the need for more consistency in caseload numbers. However, it should be stated that caseload numbers do depend on the needs of the students and the quality of service provided. The direct caseload average for BC itinerant teachers was higher than the mean for American itinerant teachers, who averaged 10.8 students (Luckner & Miller, 1994).

It was hypothesized that as caseloads increased, the stress levels of itinerant teachers would increase. Literature supported this hypothesis (Cedoline, 1982; Cichon & Koff, 1980; Farber, 1991; Fimian & Santoro, 1983; Weiskopf, 1980; Zabel & Zabel, 1982). However, the results of this project suggest that an increasing *direct* caseload was not a significant source of stress; an itinerant teacher's *direct* caseload numbers/FTE were very weakly and not significantly correlated to their TSSs. This finding contradicts the literature. The reason for this contradiction could be that *direct* caseload numbers were not as important as the needs of the students which were supported. In other words, itinerant teacher stress levels could be more related to such things as: modifications/adaptations to and preparing of programs, assessments, family support, classroom teacher support, and dealing more with and providing direction for other professionals. Also, it could be that different numbers of students were stressful for individuals (i.e., 10 was stressful for one individual, yet 25 was not stressful for another individual). In other words, individuals responded differently to the numbers on their *direct* caseload. Another explanation could be that many teachers were working with the appropriate

number of students related to their individual tolerance to stress. This would be consistent with the total stress levels of the itinerant group who scored below the norms for TSSs (see Table 19).

It was assumed that consult caseload was a part of caseload numbers associated with stress reported within the literature (Cedoline, 1982; Cichon & Koff, 1980; Farber, 1991; Fimian & Santoro, 1983; Weiskopf, 1980; Zabel & Zabel, 1982). The results indicated that an itinerant teacher's *consult* caseload numbers per FTE were significantly and negatively correlated to their TSSs. This meant that higher stress levels were correlated to lower numbers of consult students/FTE. One possible reason for this correlation could be that students placed on the *consult* caseload reduces the *direct* caseload for itinerant teachers, and thus reducing the work load and stress levels. In other words, increasing your consult caseload could reduce your stress level, since there is not as much work involved with consult students as compared to direct students.

It was determined that the average consult caseload was 20.7 students/FTE. However, there was a very wide range of consult numbers; the lowest was 0.0 students/FTE and the highest was 80.0 students/FTE. This indicated a need for a better understanding of the definition for consult students. Possibly, some teachers need clarification on which students should and should not be on the consult caseload. When compared to their American colleagues, BC itinerant teachers had higher consult caseload numbers. American teachers had a mean of only 6.7 students (Luckner & Miller, 1994). A possible explanation for this difference could be that American itinerant teachers defined consult caseloads differently than BC teachers.

The data collected from questions #12, 13, and 14 (see Appendix B) should have provided the numbers describing the respondents direct caseload and how it changes. Tracking caseloads can be a difficult task with students' needs changing or students moving within or out of district throughout the school year. One difficulty with these questions was that many teachers of the deaf and hard of hearing do not necessarily utilize the Ministry definition for categorizing students as *direct* or *consult*. Also, many teachers do not necessarily know which students were claimed deaf and hard of hearing students by the district, which students should qualify for funding, or which students were claimed under another Ministry funded category. On the other hand, part of the problem could be the wording of the questions. For example, the time period for question #12 could be interpreted to mean either presently or for Sept. 30th. The intention was for the numbers to be for Sept. 30th, because then the numbers for questions #11 would correspond to the numbers for questions #12 plus #13 plus #14, except for those that moved away. Also, it seemed that some teachers considered students who studied English as a Second Language to be funded under another Ministry category, since the teachers' entire direct caseloads were funded under both deaf and hard of hearing and another category. So, because of the possible misinterpretations, this process was considered too complicated and, as a result, the data were not reported. One way to prevent this difficulty in the future would be to provide subtotal and total lines so that the participants could clearly see that the numbers correspond to *direct* caseload numbers. Another question to add to the questionnaire, to make the data collected more accurate, would be to specifically request the number of students who were removed from the direct caseload during the year.

Another aspect of caseload that was investigated was the diversity of students, namely the age levels of students supported. With respect to stress levels, some studies (Cedoline, 1982; Farber, 1991; Fimian & Santoro, 1983; Johnson & Harkins, 1984) determined that the diversity of students increased the stress levels of teachers. The means for subgroups were compared, and the results indicated that teachers who taught one age group or four age groups had higher stress levels than the others (see Table 25). However, an ANOVA was performed on the TSS means for the subgroups, and it determined that their means did not differ significantly. The reason for this contradiction with the literature could be that the sample size for the subgroups were quite small (see Table 25). Also, it could be that itinerant teachers prefer the diversity of student ages, because they prefer itinerant teaching, which typically involves the teaching of students from K-12 (rather than one age group in a resource room).

Two studies reported that teachers who teach secondary students were more stressed than teachers who taught other levels of students (Farber, 1991; Zabel & Zabel, 1982). An ANOVA was performed on TSS means to determine if this was true for the subjects in this study. Though the teachers who taught secondary students had a TSS mean higher than those that did not, the means were not significantly different. An explanation for this could be that almost all (92%) of the teachers who taught secondary students also taught other age levels. There were too few teachers ($n=4$) that taught just secondary students to adequately compare to the others.

Another source of stress for itinerant teachers of the deaf and hard of hearing that was investigated was the number of hours/FTE spent working with students each week. It was found that teachers spent 19.1 hours/FTE on average working

with students. This amount of time was higher than the average time spent providing direct service (16.1 hours/week) by American itinerant teachers (Luckner & Miller, 1994). A possible explanation for this difference could be that American teachers offer other services such as workshops, observations, and time for consultation. It was also found that students who were directly supported by BC itinerant teachers received substantially less direct support than American students. BC students received approximately 1.06 hours/week of support from an itinerant teacher, but American students received 2.40 hours/week (Luckner & Miller, 1994). The reason for this difference was the higher numbers of direct support students on the caseloads of BC teachers.

Though none of the literature examined the relationship between stress levels and the time spent working with students, it was an area that the researcher wished to investigate. However, from correlational analysis it was determined that the two were not correlated. A possible explanation of this result could be that teachers were working with the appropriate number of hours related to their stress levels. Another explanation could be that some teachers find the time with students stressful while others enjoy it (i.e., some teachers dread more hours with students, while others look forward to more hours). These explanations suggest that how a teacher reacted to the time spent with students was very individual.

Teachers were asked to provide the numbers of direct support students who used the following communication methods: oral, signing, or sign and speech. It was found that 93% of students were oral, 5% used sign and speech, and 2.6% used signing. It was surprising to find there were not more signing students integrated into their neighbourhood school due to the philosophy of inclusion and the parents desire to keep their children close to home (rather than far from home in provincial

programs). However, it could be that districts find it difficult to find appropriate personnel (i.e., visual language interpreters) to support the needs of students. When compared to the American literature, BC teachers had a slightly higher percentage of oral students but fewer signing students. On average, of the students who American teachers worked with, 89% were oral and 22% utilized sign (Luckner & Miller, 1994). However, comparing these percentages was complicated since the categories for BC teachers were mutually exclusive yet for the categories for the American teachers were not.

With respect to the types of hearing loss of direct support students, the results indicated a wide variety of hearing losses within direct caseloads (see Table 8). However, many participants did not accurately describe the hearing losses of their direct caseload. Often the numbers provided for their direct caseload did not correspond with the total numbers provided for hearing losses. Some subjects included their consult students, and others may have been inaccurately calculated. A subtotal line or a way of indicating that ITQ items #16 and #17 should equal item #11 (see Appendix B) would have assisted the participants in more clearly providing this data. When the types of hearing losses were compared to the American literature, it was determined that BC teachers directly support similar percentages of types of hearing losses, though possibly fewer severe and more minimal or mild (Luckner & Miller, 1994).

Johnson & Harkins (1984) reported that teachers of the deaf and hard of hearing who worked with students with multiple challenges had higher stress levels than teachers who did not. To permit a comparison, the ITQ asked teachers to provide the numbers of direct support students with other special needs. It was found that only about 20% of the direct support students had other special needs. It could be

that students with multiple challenges were funded under other Ministry category since their hearing losses were not the primary educational need. This result was also lower than the American percentage (39%) of students with other special needs (Luckner & Miller, 1994).

Higher numbers per FTE of direct support students with other special needs was hypothesized to increase the stress level of teachers. A correlation of these numbers to TSSs determined that although the numbers were weakly correlated, they were not significant. A second test was done using an ANOVA to compare TSS means of teacher subgroups, which were based on the numbers/FTE of direct support students with other special needs (see Table 26). The mean for the subgroup who had more than four students/FTE was greater than those subgroups which had less than four students/FTE, but the means were not significantly different. One reason why this result was not consistent with the literature could be that frequency of students with other special needs was low (about 20% of direct caseload numbers), so the range of numbers reported by teachers was small.

Farber (1991) indicated that the type of service delivery model was a source of stress for special education teachers. In order to investigate this, teachers were asked to provide the number of direct support students which they felt were inadequately supported in an itinerant program. The results indicated that about 21% of the students were inadequately supported, mainly due to the needs of the student and high caseload numbers. This result was higher than the American study which reported that 15% of students were not provided appropriate services (Luckner & Miller, 1994). This could be partially explained by the lower caseload numbers of American itinerants.

It was hypothesized that teachers who provided higher numbers of direct support students being inadequately supported would have higher stress levels due to the frustration of supporting these students. The correlation between these numbers/FTE and TSSs was determined to be significantly correlated.

Another issue concerning caseloads which was investigated was the issue of mandating caseloads. Although no literature had suggested that this would be related to stress, it has been suggested by some BC itinerant teachers as a solution to unequal caseloads across the province and to high stress levels (Tylka, 1997). It must be frustrating for teachers in some districts when they are expected to service large numbers of students to bring in funding, while in a neighboring districts, the focus is on quality of service to students rather than on high numbers. The results of this project indicated that there was a large range in the *direct* caseload numbers reported: from 7.0 to 65.0 students/FTE. When the results of the mandating caseload question were examined, some interesting findings were made.

First, itinerant teachers of the deaf and hard of hearing were very split on this issue. When asked if caseloads should be mandated, almost equal numbers responded *yes*, *no*, and *undecided*. In a way, this was expected because some teachers would stand to benefit from mandated caseloads, yet others would fear that their workloads could increase.

The subjects who responded yes were concerned about their high caseload numbers and the increased time and work demands associated with these high numbers. One teacher wrote mandated caseloads are necessary "to ensure adequate levels of service to children needing support." Another teacher stated "Class size for teachers is mandated. Caseloads should also be mandated."

Other teachers were concerned about the effect of high caseload numbers on their stress levels. For example, one teacher wrote "some itinerants are complaining of burnout in dealing with a large number of students inadequately." Another mentioned that mandated caseloads were needed "to cut down on stress levels." It was hypothesized that those who were in favour of mandated caseloads would have higher stress levels than those who were not. Indeed, the results supported this expectation. An ANOVA determined that there was a significant difference (see Table 27) among the TSS means for those who answered *yes*, *no*, and *undecided*. Post Hoc tests determined that the *yes* subgroup (in favour of mandated caseloads) had a significantly higher TSS mean than both the *no* subgroup (not in favour of mandated caseloads) and the *undecided* subgroup (see Table 28).

Another reason why teachers were in favour of mandated caseloads was due to administrative pressures to have large caseloads. One teacher shared "We are not truly permitted to use our professional judgement about caseload size because of administrative pressures to bring in the most funding." Another wrote "we are under constant stress trying to find new kids each spring for the following year."

However, some subjects that were in favour of mandated caseloads were concerned about how caseload maximums would be determined. Some subjects that were in favour said yes, but with a need for flexibility or professional judgement. In fact, this concern was consistent with many of the subjects who were not in favour or undecided. This need for flexibility or professional judgement (i.e., based on the needs of the student) was recurrent within the comments provided by those who were not in favour or undecided. One teacher wrote "Mandated caseloads don't take into account individual situations, remote areas, etc." Another teacher stated "No,

as each student's needs are individual - some may need more support than others (i.e., need to be seen more hours/week)."

Therefore, it may mean that caseload maximums are not the answer, rather a weighting of factors could be a better approach. However, to create such a formula would be complex, somewhat subjective, and would be difficult to monitor, as opposed to a caseload maximum clause within a collective agreement. This issue requires more analysis and discussion, and it is recommended that the CAEDHH Itinerant Committee should continue to examine it.

(ii) Preparation time and paperwork

Some research indicated that preparing student lessons and completing paperwork were sources of stress for teachers (Cichon & Koff, 1980; Farber, 1991; and Johnson & Harkins, 1984). It was discovered that the teachers spent an average of 7.12 hours/FTE each week, with a range of 0-20 hours/FTE. However, the results were almost twice as high as the average time spent attaining and adapting materials (3.8 hours/week) by their American colleagues (Luckner & Miller, 1994). Since BC teachers had higher caseloads, they would probably spend more time preparing lessons than their American counterparts.

It was also hypothesized that the more time teachers spent preparing for student lessons each week, the higher their stress levels would be. However, the number of hours/FTE each week was not correlated with the TSSs of teachers. One reason for this could be that individuals respond very independently to the preparation of lessons; some teachers could enjoy preparing lessons and it reduces their stress to do so, while others dread preparing lessons and view it as a major source of stress.

Also, some teachers may use travel time to think about student lessons and others use the time to relax.

Teachers were asked to provide their number of office hours each week, to investigate whether teachers had designated time away from students like regular education students. The data ascertained that the average was 2.3 hours/FTE each week. It was surprising that 15% of the respondents did not have office hours, though some may prefer to prepare lessons at home or at other schools, which may be more convenient. Some teachers wrote that they "have no time for office time/preparation time" due to excessive time demands, and some lack "an office to work out of."

A large portion of the itinerant teacher's responsibility can be the paperwork related to IEPs. The number of hours spent on the average student's IEP involves meetings, writing, distributing, signing, updating, and filing. The data collected demonstrated that there was a wide range, from 1 to 16 hours, related to IEPs. One suggestion would be to share IEPs or their templates to help standardize the time involved and workload associated with them.

It was also hypothesized that the more time teachers spent preparing a student's IEPs each year, the higher their stress levels would be. However, the number of hours/IEP each year was negatively correlated with the TSSs of teachers, though not significantly. An explanation for this could be that spending more time on IEPs generally, but not always, produces higher quality IEPs which meet students needs, sets program goals, delineates responsibilities, and involves all school-based team members and which ultimately reduce the stress for itinerant teachers. One teacher wrote "It sets out my goals very clearly. The role of the teacher is also clear...[it] makes activities very clear and easy."

Another aspect of IEP writing which was examined was the percentage of IEPs authored or casemanaged by the itinerant teacher. About 66.5 % was the average. However the results were very spread, indicating the percentages vary across the province. It was also hypothesized that the higher the percentage of IEPs authored or casemanaged by teachers, the higher their stress levels would be. However, the percentage of IEPs was not correlated with the TSSs of teachers. A reason for this could be that teachers who author or casemanage high percentages of IEPs reduce the stress of this workload by using strategies, such as computer templates and interrupting regular program schedules to complete IEPs. Also, some teachers could feel that IEPs assist with planning and report writing, while others do not.

With respect to the usefulness of the IEP process, which depends on such factors as the school, personnel, district, teachers, parents, etc. Many teachers (70.6%) rated it good or excellent (see Table 9). Teachers might have rated it high because an IEP meeting is the time when all school-based team members involved collaborate and discuss the needs and program goals of the student. One teacher wrote,

Because our district provides funds to release teachers and interpreters from class with TOCs all parties are able to fully participate without time constraints. The IEP is truly a collaborative process and also provides time for giving all members explanations of child's background.

Thus, itinerant teachers found the IEP process to be worthwhile and viewed it as a benefit to the program they provide to their students.

(iii) Mileage and travel

Though none of the literature addressed the issue of mileage in relation to stress levels of itinerant teachers, data were collected regarding transportation, since

travelling is a large component of an itinerant teachers job. It was hypothesized that the more time spent travelling and the greater the distance travelled, the higher the stress level of the teacher, because travel time would compete for hours to directly work with students and prepare lessons and also would put additional wear and tear on the teacher's personal vehicle. However, none of the variables (*mileage each week based on 1.0 FTE, number of hours/FTE travelling each week, and average driving distance from one location to another*) were significantly correlated with the teachers' TSSs (see Table 39). One reason for this could be that individuals respond very independently to travelling. Some teachers seemed to enjoy the break that travelling provided, writing that it was "useful thinking time," while others dread driving and viewed it as a major source of stress writing "it takes away valuable teaching time and gets tiring." In addition, one teacher wrote that "driving is the worst part of the job." Also, some teachers must deal with stressful rush hour traffic while others enjoy relaxing drives in the countryside. The response to increased travelling was probably very dependent on the individual.

The average number of hours travelling each week was calculated to be 6.5 hours. This finding could be due to the participation of more teachers from populated districts (more schools closer together) and the nonparticipation of teachers from less populated areas. Compared to their American colleagues who travel for 5.9 hours/week between schools (Luckner & Miller, 1994), BC itinerant teachers travel an additional 40 minutes/week.

The average number of kilometres travelled each week by BC itinerant teachers was found to be 174 km/FTE. Two possibilities for this finding could be that those who travel great distances did not participate in the survey or teachers within a

district service geographic zones to reduce distances travelled. The range of the data was quite large, from 38.3 to 700 km/FTE each week. However, BC teachers travelled fewer kilometres than their American colleagues, who averaged about 287 km/week (Luckner & Miller, 1994).

The average driving distance from one location to another was determined to be a mean of 14.7 km and the numbers ranged from 2.0 to 100.0 km. To gain an understanding of the maximum distance that itinerant teachers travel to carry out their teaching duties, participants also provided the distance to the furthest school serviced. The mean was determined to be 47.3 km, with a wide range of 5 to 592 km. With such a wide range it was difficult to predict the mean. Teachers have little control from year to year on what will be their furthest school serviced as it depends on the students on their caseload and the school which they attend.

Itinerant teachers were also asked about their mode of transportation it was found that 100% used automobiles, 7.2% used boats, and 1.4% used planes. A surprising result was that 1.4% used kayaks as a mode of transportation.

It was also hypothesized that the more schools in total and the more schools per day which an itinerant teacher was responsible for, the higher the stress levels of these teachers. The data collected, on the other hand, indicated that this was not true; neither variable was correlated to TSSs (see Table 39). One must use caution when interpreting these results, however, because the FTEs of the subjects complicated the interpretation. The correlation used the number of schools an itinerant teacher serviced without taking into account the teacher's FTE. One would assume that as a subject's FTE increases, the number of schools serviced would also increase, but this was not necessarily so. For instance, in a small district a part-time teacher may be responsible for a large number of schools, and if

their FTE was increased they could still service a similar number of schools. To confirm this possibility, an ANOVA was completed on the mean number of schools/FTE for part-time and full-time teachers, and it determined that these means were significantly different. Therefore, one could not use the numbers/FTE to correlate to stress. In addition, the correlation between the number of schools per day and the TSSs was difficult to interpret because most respondents visited three or four school in a day, and thus the range was limited.

The average number of schools/FTE that an itinerant teacher was responsible for was determined to be 10.4 schools/FTE. The average may have been skewed downwards due to a misinterpretation of the question. Some participants may have provided only the schools which have direct caseload students rather than the total number of schools they were responsible for within their district. When asked to provide the number of schools/day, it was determined that BC itinerant teachers have 3.3 schools/day.

Another variable which was investigated for its relation to itinerant teacher stress was the effect of weather problems on travel. It was found that 24% were never affected by weather and 76% in the other three categories (see Table 10). A possible reason for this finding could be that schools in the southern coastal regions shut down during snowfalls, while interior and northern regions continue operation during snowfalls.

It was also hypothesized that the more frequent the travel problems with weather, the higher the stress levels of teachers were expected to be. The investigation determined that the frequency of weather problems was significantly correlated to TSSs of teachers, and the backwards multiple regression analyses (see Tables 39 and 40) determined that it explained some of the variation in TSSs.

However, an ANOVA comparing the TSS means of subgroups based on weather ratings (never, rarely, sometimes, frequently, and always) found that although the ANOVA was significant, the Scheffe Multiple Comparison Test determined that none of the means differed significantly from each other (see Table 31).

(iv) Personnel and working space

It was determined that an itinerant teacher worked with an average of 63 personnel/FTE. The availability of personnel within a district would greatly depend on district resources and student needs.

It was hypothesized that the higher number of personnel that an itinerant teacher deals with, the higher their stress level would be. Two literature studies supported this hypothesis (Cedoline, 1982, Farber, 1991). Unfortunately, due to confusion on how to answer this ITQ question, the reply rate for this question was low, 51.4%. Table 11 provides the average number/FTE of school personnel that itinerant teachers collaborate with, consult with, or provide direction for. When the subjects' total numbers/FTE were correlated to their TSSs, it was determined that these two items were significantly correlated. In fact, it had the highest correlational coefficient of all the variables correlated to the TSSs. When the subjects' total numbers/FTE were included in the backward multiple regression analysis, it was found that it explained the most variation in TSSs, though the sample size was low (see Table 40). This could mean that this variable was the best predictor of stress levels for BC itinerant teachers of the deaf and hard of hearing.

As already mentioned, many subjects did not provide the numbers of support staff worked with (question #40). Although the question asked for numbers, some subjects checked off the personnel rather than providing the numbers. Two

suggestions to improve this question would be to provide an example or to ask for a total at the bottom.

Related to the total numbers of school personnel, Johnson and Harkins (1984) reported inadequate communication among school personnel as a source of stress for teachers of the deaf and hard of hearing. Only 4% responded that communication was poor or very poor. One reason for this could be that teachers had to average the schools they serviced, which tended to skew the results towards satisfactory. However, the results indicated that communication seems to be good among itinerant teachers and the personnel they work with.

It was hypothesized that the poorer the communication among personnel, the higher the stress level of teachers. When the ratings for communication were correlated with TSSs, the correlation was found to be weak and just outside the significant level. An ANOVA was performed on TSS means of subgroups based on communication ratings (very poor, poor, satisfactory, good, and excellent), and even though means illustrated a trend (see Table 32) which was consistent with the hypothesis, the ANOVA was not significant.

Poor working conditions were supported by research as sources of stress for teachers (Dunham, 1992; Farber, 1991; Kyriacou, 1989; Retish, 1986). For itinerant teachers, poor working conditions included the poor ability to have rooms assigned in a school and the poor quality of the rooms they work in. On the questionnaire, one teacher commented that "this is a HUGE PROBLEM - it is not just only finding the space but having the appropriate space/location." It was found that 54% of the teachers rated it poor or very poor (see Table 12). One teacher shared that their experience was "Terrible! I drag the poor kids from room to room looking for a quiet place to work. Often have to work in the noisy hallways!" It was

alarming that 20% rated the ability to have rooms assigned in schools as very poor, meaning that this was very much a concern for itinerant teachers of the deaf and hard of hearing.

Due to limited rooms in schools, itinerant teachers may have to work in medical rooms, book rooms, noisy classrooms, near band rooms, or near gyms. It was found that 48.5% of teachers rated the quality of rooms as poor or very poor (see Table 13). Supporting this finding, a teacher wrote that he/she works with students "usually in office area, or near [the] gym [or] music room - they are noisy or high traffic areas." One particular concern was that 22.1% rated it as very poor, indicating that this too was a problem for itinerant teachers.

It was hypothesized that the poorer the ability to have rooms assigned in schools to itinerant teachers and the poorer the rooms for their needs, the higher the stress level of teachers. This hypothesis was confirmed by correlational analysis; the ability to have rooms in schools assigned to itinerant teachers was definitely and significantly correlated to TSSs, and the rating of the rooms for their needs was also significantly correlated to TSSs. For these two variables, ANOVAs investigated if the TSS means of subgroups (based on the ratings: excellent, good, satisfactory, poor, and very poor) were significantly different. The ANOVA for the ability to have rooms in schools assigned to itinerant teachers was significant (see Table 34), with the TSS means for the very poor subgroup and the poor subgroup being significantly higher than the satisfactory subgroup (see Table 35). The ANOVA for the rating of the rooms for their needs was found to be not significant even though the means for the poor subgroup and the very poor subgroup were higher than the means for the satisfactory subgroup and the good subgroup (see Table 36).

(v) Auditory training equipment (ATE)

The average number hours spent on ATE was determined to be 2.1 hours/FTE each week, with a range from 0.5 to 7.0 hours/FTE. ATE needs are very dependent on the quality of the equipment and how it is used and cared for by the students and school. One subject explained that "This has been a great year for ATE effectiveness - very few breakdowns - some years have been worse - but it changes from year to year."

Though none of the literature mentioned that ATE was associated with stress levels of teachers of the deaf and hard of hearing, it was hypothesized that the more time spent dealing with ATE, the higher the stress levels of teachers would be. For a fair comparison, the number of hours on ATE had to be converted to a per FTE basis, and then an ANOVA was performed on the mean number of hours/FTE of two subgroups, full-time and part-time. It was determined that the means differed significantly (see Appendix E), so the hours/FTE could not be used to correlate with TSSs since part-time and full-time teachers responded differently.

Of the total direct caseload students, the teachers reported that about 60% used hearing aids, 39% used personal FMs, 8.6% used free-field FMs, and about 1% used cochlear implants. Compared to the American itinerant teacher literature, a lower percentage of BC students used hearing aids but a similar percentage used other auditory amplification equipment. Eighty-three percent of American students used hearing aids and 43% used auditory amplification units (Luckner & Miller, 1994). An interpretation of these results could be that more American signing students attended their neighbourhood schools.

With respect to the number of audiological services which an itinerant teacher works with, the results of the survey indicated that 89% worked with 1 health unit,

10% worked with 2 health units, and 47% worked with private clinics. It was surprising that one teacher worked with 3 private clinics and another worked with 4 private clinics.

With respect to the repairs and support from health units and private clinics an itinerant teacher works with, the results of the survey indicated that a trend was apparent, namely private clinics were rated better than health units (see Tables 14 and 15).

(vi) Support for and role of the itinerant teacher

Many studies stated that unreasonable, unconcerned, or uncooperative parents were sources of stress for a variety of teachers (Farber, 1991; Johnson & Harkins, 1984; Weiskopf, 1980; and Zabel & Zabel, 1982). In this project teachers were asked to rate parental support. It was found that 90% of the teachers rated parental support as satisfactory or better (see Table 16). This indicates that parental support was highly rated and not a large concern for itinerant teachers.

It was hypothesized that the poorer the rating of parent support, the higher the stress level of the teacher. A correlational analysis between parental support ratings (excellent, good, satisfactory, poor, and very poor) and TSSs determined that they were not correlated. An ANOVA on the TSS means for subgroups based on the ratings above found that the means did not differ significantly (see Table 37). A reason why the correlation was not significant could be due to the large number of teachers who rated parental support as satisfactory or good because they "averaged" the parental support, meaning teachers could have a parent or a few who raise their stress levels but they report the "average."

The lack of support or recognition was identified as a source of stress by some studies (Cedoline, 1982; Farber, 1991; Fimian & Santoro, 1983; Retish, 1986; Weiskopf, 1980; Zabel & Zabel, 1982). The findings showed that 6.0% of the participants felt that they were not recognized and/or appreciated and 18% were undecided. It seemed that many itinerant teachers felt appreciated by the small things, such as "just the smile on their faces, the pats on the backs, etc." or "the fact that I can always approach people and feel listened to and respected." This contributed to the discrepancy between the literature findings and the results.

It was hypothesized that teachers who did not feel acknowledged, recognized, or appreciated for their efforts would have higher levels of stress. To test this hypothesis, an ANOVA was performed on the TSS means for the three subgroups of respondents: those that answered *yes*, those that answered *no*, and those that were *undecided*. It was determined that these means were not significantly different, although they indicated a trend: the mean for those that answered *no* was higher than the mean for those who were *undecided* and those that answered *yes*. The reason why these differences were not significant could be due to the very small sample size of the *no* subgroup, and this contributed to a relatively large standard error.

Itinerant teachers were also asked to indicate which months of the year were more demanding. Many teachers indicated that "September and October are very busy - meeting teachers, giving workshops, setting up a timetable, and writing IEPs. May and June are also very busy with end of the year reports and placement and IEP meetings."

Teachers were also asked to rate their preparedness or training for itinerant. The results indicated that 74% rated their preparedness or training for itinerant

teaching as satisfactory or better. From the comments written by the participants, it was apparent that the teachers were trained in a variety of settings (i.e., University of BC, Central Institute for the Deaf - St. Louis, Vancouver Oral Centre, Clarke School for the Deaf, Smith University - Massachusetts) and places around the world (i.e., United Kingdom, Australia, Nova Scotia, New York). It would be difficult to be cognizant of the program offerings of deaf education programs around the world.

Cedoline (1982), Farber (1991), and Fimian & Santoro (1983) wrote that poor teacher education contributed to teacher stress. The data in this study were analyzed by correlating ratings of teacher education to TSSs and by running an analysis of variance on subgroup TSS means. Though teacher education was negatively correlated with TSSs (i.e., the higher the rating for training, the lower the TSS), the correlation was not significant. Furthermore, the TSS means were analyzed using the ratings (excellent/good, satisfactory, and poor/very poor) to categorize the subjects into subgroups. Though the means showed a trend (see Table 38), the means did not differ significantly. The reason that the differences were not significant could be that itinerant teachers received their training in a variety of programs at different institutions. Also, the results indicate that the interaction between training and stress level was a complex one and that the way a person responds to training was very individual.

From the comments provided by the participants it was apparent that on the job training was one of the best ways to prepare itinerant teachers for the position. Twenty-one (out of 70) respondents indicated that their experience on the job was very important. One teacher wrote that "most of what I know I learned on the job," and this was echoed by many others. This was consistent with the findings of

Luckner and Miller (1994), who reported that American itinerant teachers rated *on-the-job training* and *other itinerant teachers* higher than *graduate or undergraduate training* with respect to preparing them for their itinerant role. Therefore, practicum placements within itinerant positions may be most beneficial for those planning on becoming itinerant teachers of the deaf and hard of hearing.

In addition, even though most of the respondents rated their preparedness and training as satisfactory or better, many (17 out of 70) mentioned that their deaf education "program focused on deafness and not hard of hearing". One teacher wrote "I felt much more comfortable entering a classroom of profoundly deaf students than I do dealing with the daily issues arising with hard of hearing." These comments suggested that one way to improve itinerant teacher training programs would be to include education around issues surrounding hard of hearing students (i.e., ATE, speech training, language assessments, acoustic environments).

Multiple Regression Analysis of TSS with Demographic Variables and Sources of Stress from the ITQ

Two backwards multiple regression analyses were performed to establish which variables were the best predictors of TSSs.

From the first backwards multiple regression analysis, it was determined that five sources of stress from the ITQ could be combined in a multiple regression equation to predict the dependent variable, the TSS from the TSI. These five sources of stress were: *the total number/FTE of support staff which a teacher works with, the number/FTE of students on the consultation caseload, the overall ability to have specific rooms assigned, the frequency of weather interfering with travel, and the rating of communication between school personnel and the teacher.* These

sources of stress with an R^2 of .346 explain about 35% of the variation in TSSs (see Table 40). Though an ANOVA determined that the whole model significantly ($F=4.074$, $p=.008$) explains this variance, the calculation of coefficients found that only one coefficient of a source of stress, *the total number/FTE of support staff which a teacher works with*, was significantly ($p=.004$) nonzero in the multiple regression equation.

However, after careful scrutiny of the multiple regression analysis, it was discovered that the sample size for the multiple regression was low ($n=30$); over half the data were missing due to the low response rate of ITQ item #40, *the number of support staff worked with*. Therefore, a second regression was run without this variable to check whether other variables' coefficients were important to the multiple regression equation.

From the second backwards multiple regression analysis, it was determined that a model with a larger sample size included similar variables from the first regression (see Table 41). These sources of stress with an R^2 of .213 explain only about 20% of the variation in TSSs, compared with 35% from the first model.

Therefore, although the initial multiple regression analysis contained a lower sample size, it demonstrated to be the stronger of the two models. The ANOVA verified that the model was significant. The coefficient of the *total number/FTE of support staff which a teacher works with* was significant in a multiple regression equation, and as such, it should not be dismissed from any regression equation, even if the sample size was low. The initial model containing five variables fit the accepted ratio of "variables to the number of cases" assumption (1 variable:5 cases; Dr. M. Trache, Statistical Consultant, personal communication, August 17, 1998), which further demonstrated that the model was acceptable. These five sources of

stress (*the total number/FTE of support staff which a teacher works with, the number/FTE of students on the consultation caseload, the overall ability to have specific rooms assigned, the frequency of weather interfering with travel, and the rating of communication between school personnel and the teacher*) from the first model were reasonable predictors of stress levels of BC itinerant teachers of the deaf and hard of hearing. Research (Cedoline, 1982; Cichon & Koff, 1980; Farber, 1981; Fimian & Santoro, 1983; Johnson & Harkins, 1984; Kyriacou, 1989; Retish, 1986; Weiskopf, 1980; Zabel & Zabel, 1982) indicated that caseload, working conditions, and communication affected the stress levels of teachers. The remaining two variables, working with support staff and travelling, were specific and unique working conditions of itinerant teaching, and they were also consistent with research completed by Hiebert, (1985) who highlighted that specialty teaching areas have unique stressors related to their area of specialty.

Manifestations of Stress

Fimian and Santoro (1983) and Hiebert (1985) reported that the manifestations of stress or the response to stress was very dependent on the individual. Though people exhibit general patterns of manifestations, how a person responds to stress is believed to be very individual. The manifestations were analyzed to determine which manifestations of stress were predominantly exhibited by BC itinerant teachers of the deaf and hard of hearing.

Five subscales on the TSI were examined: emotional, fatigue, cardiovascular, gastronomical, and behavioral manifestations.

A number of studies indicated that high levels of unmediated stress can lead to emotional manifestations, such as depression, emotional exhaustion, frustration,

anger, etc. (Cedoline, 1982; Dunham, 1982; Farber, 1991; Fimian & Santoro, 1983; Johnson & Harkins, 1984; Meadow, 1981; Weiskopf, 1980; Zabel & Zabel, 1982).

The results of mean comparisons for each subscale determined that the *emotional* manifestation subscale had the highest mean than any other subscale (see Table 42). This was consistent with the norms (see Table 6) provided by Fimian (1988).

However, the subjects within this project indicated that emotional manifestations were the most prevalent manifestations, with 73.5% of the subjects rating significantly high for this subscale (see Table 43). These results are consistent with Meadow (1981) who found that teachers of the deaf and hard of hearing experienced significantly higher levels of emotional exhaustion than classroom teachers. A possible reason why this subscale was rated highly could be attributed to the great emotional involvement that itinerant teachers have with students. Typically itinerant teachers are involved with students and their families from kindergarten to grade 12, so it is likely an emotional bond and investment is made with each student. Within the subscale, *feeling anxious* (TSI item #34) had the highest mean score, and it had highest overall mean of the manifestation items (see Appendix D).

Another manifestation of stress which was supported by a great deal of literature was physical exhaustion or fatigue (Cedoline, 1982; Dunham, 1982; Farber, 1991; Fimian & Santoro, 1983; Johnson & Harkins, 1984; Weiskopf, 1980). The results of mean comparisons for each subscale determined that the fatigue manifestation subscale had the second highest mean of the subscales (see Table 42). This was consistent with the norms (see Table 6) provided by Fimian (1988). Also, the subjects within this project indicated that fatigue manifestations were very prevalent manifestations, with 66.2% of the subjects rating within the significantly

high level for the subscale (see Table 43). This manifestation was rated highly by subjects possibly because this questionnaire was completed in May and/or June, which were identified as two of the most stressful months of the school year (see Table 17). Within the subscale, *physical exhaustion* (TSI item #38) had the highest mean score (see Appendix D).

Cardiovascular manifestations were identified as typical manifestations of stress by the literature (Cedoline, 1982; Farber, 1991; Fimian & Santoro, 1983). The results of mean comparisons for the subscales determined that the cardiovascular manifestation subscale had the third highest mean of the subscales (see Table 42). This was consistent with the norms (see Table 6) provided by Fimian (1988). Interestingly, the subjects within this project indicated that with respect to cardiovascular manifestations they were very divided: 41.2% of the subjects rated significantly high for the subscale while 52.9% of the subjects rated significantly low (see Table 43). These results support the notion that the response to sources of stress are very individual.

The literature reported that gastronomical manifestations were common symptoms experienced by teachers working in stressful conditions (Cedoline, 1982; Farber, 1991; Fimian & Santoro, 1983; Johnson & Harkins, 1984). In this project, the gastronomical manifestation mean was the second lowest mean of the subscales (see Table 42), and this was consistent with Fimian's research (1988, see Table 6). Like the cardiovascular manifestation subscale, the subjects indicated that with respect to gastronomical manifestations they were very divided: 30.9% of the subjects rated significantly high for the subscale while 57.4% of the subjects rated significantly low (see Table 43). These results again support the notion that the response to sources of stress are very individual.

Behavioral manifestations were also identified within the literature as a symptom of unmediated stress (Cedoline, 1982; Farber, 1991; Johnson & Harkins, 1984; Weiskopf, 1980). In this project, the behavioral manifestation mean was the lowest mean of the subscales (see Table 42), and this was consistent with Fimian's research (1988, see Table 6). Even though the group mean was slightly above the norm, their distribution with respect to significance levels was skewed to the significantly low end (see Table 43). It seemed that using drugs and alcohol and calling in sick were not characteristic responses to stress of BC itinerant teachers of the deaf and hard of hearing.

Limitations of the Study

Though this project uncovered valuable data with respect to BC itinerant teachers of the deaf and hard of hearing, there were some limitations to the study.

1. Parts of this study was correlational, and although a correlational study can effectively demonstrate relationships among specified variables, causation cannot be determined.
2. The study was limited by a relatively small sample size . The small sample size contributed to even smaller subgroup samples for some ANOVAs, which produced high standard errors.
3. There was little variability among the responses to some items. The responses to these items were clustered, so variability was low. Correlational interpretations of these items should be made with caution.
4. The subjects completed the questionnaires during May and June which were determined to be two of the more demanding months of the year. This may have

influenced the responses given by the subjects, caused them to rush through the questionnaires, or in other ways influenced their participation.

5. Though it was assumed that participants understood and answered the questions accurately, there were concerns about some items. Some items may have been misinterpreted, as discussed previously.

6. Some interpretations of the results were speculative, and they may require further research to validate them.

7. This project collected data from BC itinerant teachers of the deaf and hard of hearing. Generalizations to other itinerant populations must be made cautiously.

Recommendations

1. The ITQ should have been piloted more thoroughly. Though Itinerant and Thesis Committee members perused the ITQ for possible problems, there were unfortunately still items which were not analyzed because of possible misinterpretations of the items. More pilot testing of the ITQ with itinerant teachers of the deaf and hard of hearing, who were not directly involved in its development, may have assisted with determining potential problems with the ITQ. Thus, some of these problems could have been averted by rewording or removing items from the questionnaire.

2. Another recommendation would be to collect time-based items on a per student basis, rather than on a per week basis. For instance, it might be better to ask for the average number of minutes each week directly working with a typical student, rather than the average number of hours each week directly working with all students. This would avoid having to convert data to a per FTE basis for

comparisons. However, gathering the data in this format could produce less variation in the numbers, which could hinder analysis.

3. The issue of mandating caseloads should be discussed among teachers of the deaf and hard of hearing, possibly with the lead from the Itinerant Committee of CAEDHH-BC. Cases were made both for and against mandating caseloads, and teachers were very split on the issue.

4. The issues of room availability and room quality in schools should be addressed. In order for the mainstreaming of students who are Deaf, deaf, or hard of hearing to be successful, provisions should be made in schools to ensure an enabling environment for support from itinerant teachers. BC itinerant teachers of the deaf and hard of hearing were frustrated with the lack of room availability and room quality in schools, and these items were significantly correlated with their stress levels, as measured by the TSI. More discussion of these issues is needed.

5. More discussion is also needed to explain why itinerant teachers felt that 21% of direct support students were being inadequately supported in itinerant programs. The reasons most often mentioned were the high needs of the student and high caseload numbers. It would be important to explore why these reasons were frequently supplied by teachers. Is there not enough support provided for the student or is there not enough time to service the needs of the student? The answer to these and other questions should be addressed to find ways to help students succeed in the itinerant service delivery model of support.

6. From the comments provided on the ITQ about itinerant teacher education, a practicum placement within an itinerant position would be most beneficial for those planning on becoming an itinerant teacher of the deaf and hard of hearing. These comments also suggested that one way to improve itinerant teacher training

programs would be to include education around issues surrounding hard of hearing students (i.e., ATE, speech training, language assessments, acoustic environments, etc.).

7. To check the validity of the TSS of the TSI, an item on the ITQ could have asked the participants to rate their stress levels (i.e., from 1 to 5: extremely, very, moderate, mild, no stress), and this could be correlated with TSSs. Though this project assumed the validity of the TSS for this population, this further check would help to establish its validity.

8. One further question which would have assisted the analysis of the sources of stress would be "What three things are the most stressful in your itinerant position?" This could confirm some of the results and possibly add to the sources of stress for this particular group of teachers.

Summary

When compared to TSI norms, BC itinerant teachers of the deaf and hard of hearing experienced lower than normal levels of stress, but again caution should be exercised when comparing BC itinerant teachers to the norms of American teachers. Also, much of the results suggest that how itinerant teachers reacted to sources of stress was very individual. Though many trends were evident in the demographic variables related to stress, none were found to significantly contribute to the stress levels of itinerant teachers.

Work-related stressors and time management stressors were determined to be concerns for teachers, though they were not significantly high concerns. Trends in the data and multiple regression analyses suggested that significantly higher stress levels were associated with: decreased numbers on consultation caseloads, more

inadequately supported direct caseload students, increased frequency of weather interference with travel, increased number of support staff worked with, inability to have rooms assigned within schools, and poorer quality of workspace in schools.

An issue that proved to be of concern to itinerant teachers was the issue of mandating caseloads. Teachers who felt caseloads should be mandated had significantly higher stress levels and voiced concerns about high student numbers, workload, and administrative pressures. Issues that were not much of a concern for itinerant teachers were related to IEPs, ATE, and most aspects of travelling.

The highest manifestations of stress of itinerant teachers were emotional manifestations (anxious, depressed, insecure, etc.) and fatigue manifestations (physical exhaustion, weakness, etc.). Almost three-quarter (74%) of the respondent identified emotional manifestations as significantly high and 66% identified fatigue manifestations as significantly high.

REFERENCES

British Columbia Ministry of Education. (1994). A manual of policies, procedures and guidelines: Response draft document. Victoria: Ministry of Education, Special Education Branch.

Broiles, P. H. (1982). An inquiry into teacher stress: Symptoms, sources, and prevalence in public school. Unpublished doctoral dissertation, Claremont Graduate School, Claremont, CA.

Brown, N. J. (1983). An analysis of stress factors as perceived by elementary teachers. Unpublished doctoral dissertation, University of Arkansas.

Carnegie Foundation for the Advancement of Teaching. (1988). The condition of teaching: A state-by-state analysis. Princeton, NJ: Carnegie Foundation for the Advancement of Teaching.

Cedoline, A. (1982). Job burnout in public education: Symptoms, causes, and survival skills. New York: Teachers College Press.

Cichon, D. J., & Koff, R. H. (1980, March). Stress and teaching. NASSP Bulletin, 91-104.

Cole, M., & Walker, S. (1989). Teaching and stress. Milton Keynes, UK: Open University Press.

Conference of Executives of American Schools for the Deaf. (1975). Report of the ad hoc committee to define deaf and hard of hearing. American Annals of the Deaf, 120, 509.

Dolnick, E. (1993, September). Deafness as culture. The Atlantic, 272 (3), 37-53.

Dunham, J. (1976). Stress in schools. Hemel Hempstead, UK: National Association of Schoolmasters.

- Dunham, J. (1992). Stress in teaching (2nd ed.). London: Routedledge Press.
- Esteve, J. (1989). Teacher burnout and teacher stress. In M. Cole & S. Walker (Eds.), Teaching and stress, (pp.4-25). Milton Keynes, UK: Open University Press.
- Farber, B. A. (1984, Winter). Teacher burnout: assumptions, myths, and issues. Teachers College Record, 86 (2), 321-338.
- Farber, B. A. (1991). Crises in education: Stress and burnout in the American teacher. San Francisco: Jossey-Bass Publishers.
- Feistritzer, C. E. (1985). The condition of teaching. Princeton, NJ: Carnegie Foundation for the Advancement of Teaching.
- Feitler, F. C., & Tokar, E. B. (1981, April 13-17). Teacher stress: Sources, symptoms and job satisfaction. Paper presented at the annual meeting of the American Educational Research Association, Los Angeles.
- Fimian, M. J. (1982, November). What is teacher stress? The Clearing House, 56, 101-105.
- Fimian, M. J. (1984). The development of an instrument to measure occupational stress in teachers: The teacher stress inventory. Journal of Occupational Psychology, 57, 277-293.
- Fimian, M. J. (1986a). Note on reliability of the teacher stress inventory. Psychological Reports, 59, 275-278.
- Fimian, M. J. (1986b, February). Social support and occupational stress in special education. Exceptional Children, 52 (5), 436-442.
- Fimian, M. J. (1987, January). Teacher stress: An expert appraisal. Psychology in the Schools, 24, 5-14.
- Fimian, M. J. (1988). Teacher stress inventory. Brandon, VT: Clinical Psychology Publishing Co., Inc.

Fimian, M. J., & Fastenau, P. S. (1990). The validity and reliability of the teacher stress inventory: A re-analysis of aggregate data. Journal of Organizational Behavior, 11, 151-157.

Fimian, M. J., & Santoro, T. M. (1983). Sources and manifestations of occupational stress reported by full-time special education teachers. Exceptional Children, 49 (6), 540-543.

Fiske, E. B. (1982, September 19). Survey of teachers reveals morale problems. New York Times, ppA1, A52.

Gable, R. K. (1986). Instrument development for the affective domain. Boston: Kluwer-Nijhoff.

Gold, Y., & Roth, R. A. (1993). Teachers managing stress and preventing burnout: The professional health solution. Washington, DC: The Falmer Press.

Goodlad, J. I. (1984). A place called school. New York: McGraw-Hill.

Harris, L., & Associates. (1987). The Metropolitan Life survey of the American teacher. New York: Metropolitan Life Insurance Company.

Harris, L., & Associates. (1988). The Metropolitan Life survey of the American teacher. New York: Metropolitan Life Insurance Company.

Hiebert, B. (1985). Stress and teachers: The Canadian scene. Toronto: Canadian Education Association.

Holmes, T., & Rahe, R. (1967). The social readjustment rating scale. Journal of Psychometric Research, 11, 213-218.

Jericho Outreach Program. (1997). Directory of teachers of deaf and hard of hearing students [Directory]. Gift, J: Author.

Johnson, J. & Harkins, J. (1984, January). Research reports: Stress. Perspectives for Teachers of the Hearing Impaired, 2 (3), 19-21.

Kottkamp, R. B., Provenzo, E. F., Jr., & Cohn, M. M. (1986). Stability and changes in a profession: Two decades of teacher attitudes, 1964-1984. Phi Delta Kappan, 67 (8), 559-567.

Kyriacou, C. (1989). The nature and prevalence of teacher stress. In M. Cole & S. Walker (Eds.), Teaching and stress, (pp.27-34). Milton Keynes, UK: Open University Press.

Kyriacou, C., & Sutcliffe, J. (1977). Teacher stress: A review. Educational Review, 29 (4), 299-306.

Kyriacou, C., & Sutcliffe, J. (1978a). Teacher stress: Prevalence, sources, and symptoms. British Journal of Educational Psychology, 48, 159-167.

Kyriacou, C., & Sutcliffe, J. (1978b, March). A model of teacher stress. Educational Studies, 4 (1), 1-6.

Lewis, J. (1983). Burnout: An issue among teachers of the hearing impaired. ACEHI, 9 (2), 115-123.

Luckner, J. L. (1989). Suggestions for dealing with stress. Perspectives for Teachers of the Hearing Impaired, 7 (4), 20-22.

Luckner, J. L. (1990). Strategies for alleviating teacher stress. ACEHI, 16 (1), 4-12.

Luckner, J. L. & Miller, K. J. (1994, March). Itinerant teachers: Responsibilities, perceptions, preparation, and students served. American Annals of the Deaf, 139 (2), 111-118.

Maslach, C. & Jackson, S. E. (1979). The measurement of experienced burn-out. Berkeley, CA: University of California Department of Psychology.

McGrath, M. Z. (1995). Teachers today: A guide to surviving creatively. Thousand Oaks, CA: Corwin Press, Inc.

McNeill, J. H., & Jordan, L. J. (1993, July). Factors that contribute to stress as reported by teachers of deaf students at residential schools. American Annals of the Deaf, 138, 284-287.

Meadow, K. P. (1981). Burnout in professionals working with deaf children. American Annals of the Deaf, 126 (1), 13-22.

Retish, P. (1986). Burnout and stress among special educators and others. BC Journal of Special Education, 10 (3), 267-270.

Tylka, T. (1997, June). [letter to the association president]. FORUM, p. 15.

Weiskopf, P.E. (1980, September). Burnout among teachers of exceptional children. Exceptional Children, 47 (1), 18-23.

Zabel, R.H. & Zabel, M.K. (1982, November). Factors in burnout among teachers of exceptional children. Exceptional Children, 261-263.

APPENDIX A

Cover Letter Requesting Participation and Describing Study

APPENDIX B

Itinerant Teacher Questionnaire (ITQ)

Itinerant Teacher Questionnaire

Instructions: Please respond in the spaces provided, based on your Itinerant Teacher position. If additional room is needed for comments, please use the back of the sheet.

*Please do **NOT** write your name anywhere on these forms to ensure confidentiality*

You have the right to refuse to participate and you may withdraw from the study at any time without prejudice

Demographic Information

1. What is your Full Time Equivalent (FTE) in the district? (0 to 1.0).....
2. What part of your FTE is itinerant? (i.e. 0.6).....
3. How many Teachers of the Deaf and Hard of Hearing work in your district?
4. What is the total FTE of all these teacher(s)? (include yourself).....
5. Your certification: ☐ACEHI/CAEDHH Certification (Interim or Permanent)
 ☐Letter of Permission
 ☐Other

Your teaching experience: (Note: count 3 part-time years as 3 full years)

6. Years of total teaching experience.....
7. Years of working with Deaf and Hard of Hearing (D/HH) students
8. Years of working as an Itinerant teacher of the D/HH.....

Itinerant Caseload Information (1997-1998)

9. Age of students supported: ☐Pre-school ☐Primary ☐Intermediate ☐Secondary

Descriptions of Intervention:

Direct support is provided for students whose hearing loss is affecting their education and who do need intervention on a regular, frequent, and ongoing basis.

Consultative support is provided for students whose hearing loss is not adversely affecting their education and who do not need direct support. The Teacher of the deaf and hard of hearing monitors these students.

(Ministry of Education, 1994)

10. Number of D/HH students presently on your consultation caseload
11. Number of D/HH students presently on your direct support caseload
12. Number of funded/claimed D/HH students (on 118 forms, as of Sept. 30, 1997) that you provide direct support for.....
13. Number of D/HH students you provide direct support to that are claimed/funded under another Ministry category (as of Sept. 30, 1997)
14. Number of D/HH students that you provide direct support to and would have qualified for funding (on 118 forms) but arrived or were identified after Sept. 30, 1997.....
15. Number of D/HH students awaiting your support (due to lack of time, etc)

Caseload Description: (include all sensorineural, conductive, and mixed losses)

16. Bilateral Loss: Number of direct support students with (in better ear – unaided):

Profound (91+ db) loss.....	Moderate (41 - 55 db) loss..
Severe (71 - 90 db) loss.....	Mild (26 - 40 db) loss.....
Moderately Severe (56 - 70 db) loss.....	Minimal (below 25 db) loss.....

17. Unilateral Loss: Number of direct support students with (unaided):

Profound (91+ db) loss.....	Moderate (41 - 55 db) loss..
Severe (71 - 90 db) loss.....	Mild (26 - 40 db) loss.....
Moderately Severe (56 - 70 db) loss.....	Minimal (below 25 db) loss.....

18. Number of direct support D/HH students who communicate with:

Sign.... Aud./Oral.... Sign & Speech....

19. Number of direct support D/HH students with other special needs:

20. Average number of hours each week directly working with
(i.e. teaching) students hours

21. a) Number of direct support D/HH students whom you feel are inadequately supported in an itinerant program?.....
- b) Why are these students inadequately supported? (check all that apply)
☐ High Needs of Student ☐ Remoteness of site/distance
☐ Lack of Qualified Support ☐ Caseload Numbers ☐ Other _____

22. Do you feel caseloads should be mandated? ☐ Yes ☐ No ☐ Undecided
Explain. _____

23. Additional Comments about Caseloads: _____

Preparation Time and Paperwork

24. On average, how many hours each week do you spend preparing for student lessons (e.g. paperwork, collecting resources, planning)..... hours

25. How many hours each week is designated as Office/Prep time..... hours

26. On average per student, how many hours each year do you spend on an IEP? (e.g. planning, meeting, writing, updating)..... hours

27. Of your direct support students, approximately what percentage do you author or case manage the IEP? ☐ 100% ☐ 75% ☐ 50% ☐ 25% ☐ 0%

28. How would you rate the usefulness of the IEP process?
☐ Excellent ☐ Good ☐ Satisfactory ☐ Poor ☐ Very Poor
Explain. _____

29. Additional Comments about Preparation and Paperwork: _____

Mileage

30. Your average number of hours each week travelling hours

31. Your average mileage each week..... km

32. Your average driving distance from one location to another..... km

33. The distance from your office site to the furthest school serviced?..... km

34. What is the total number of schools you provide direct service in?.....

35. In a day, what is the average number of schools you work in?.....

36. Modes of transportation (check all): ☐ Car ☐ Boat ☐ Plane ☐ Other _____

37. Does weather/climate interfere with your ability to provide support:
☐ Always ☐ Frequently ☐ Sometimes ☐ Rarely ☐ Never

38. Additional Comments about Mileage: _____

Personnel and Working Space

39. How often do you meet other Teachers of the Deaf and Hard of Hearing (formally and informally): ☐Daily ☐Weekly ☐Monthly ☐Other_____
40. Number of support staff you collaborate with, consult with, or provide direction for:
- | | |
|------------------------|--|
| Classroom Teacher..... | Learning Assistance Teacher..... |
| ESL Teacher..... | Special Education Assistant..... |
| Interpreter..... | Speech/Language Pathologist..... |
| Administrator..... | First Nations Teacher/Worker..... |
| Counsellor | Occupational or Physio. Therapist..... |
| Vision Teacher..... | Other |
41. How would you rate the communication between school personnel and yourself?
☐Excellent ☐Good ☐Satisfactory ☐Poor ☐Very Poor
42. How would you rate the overall ability to have specific rooms/space assigned to you.
☐Excellent ☐Good ☐Satisfactory ☐Poor ☐Very Poor
43. How would you rate the rooms/spaces for you and your students' needs?
☐Excellent ☐Good ☐Satisfactory ☐Poor ☐Very Poor
44. Additional Comments about Personnel and Working Space:_____
- _____
- _____

Auditory Training Equipment (ATE)

45. How many hours each week is spent dealing with ATE?..... hours
46. How many direct support students use:
- | |
|-----------------------|
| Hearing aids..... |
| Personal FM |
| Free Field FM..... |
| Cochlear Implant..... |
| Other |
47. Number of Audiological services you work with: Health Unit(s).....
Private Clinic(s).....
Other
48. How would you rate getting repairs done by your Audiological services:
- | | |
|------------------------|---|
| a) Ministry of Health: | <input type="checkbox"/> Excellent <input type="checkbox"/> Good <input type="checkbox"/> Satisfactory <input type="checkbox"/> Poor <input type="checkbox"/> Very Poor |
| b) Private Clinic: | <input type="checkbox"/> Excellent <input type="checkbox"/> Good <input type="checkbox"/> Satisfactory <input type="checkbox"/> Poor <input type="checkbox"/> Very Poor |
| c) Other: | <input type="checkbox"/> Excellent <input type="checkbox"/> Good <input type="checkbox"/> Satisfactory <input type="checkbox"/> Poor <input type="checkbox"/> Very Poor |
49. How would you rate the contact and support (e.g. receiving reports, returning phone calls, etc.) from your Audiological services:
- | | |
|------------------------|---|
| a) Ministry of Health: | <input type="checkbox"/> Excellent <input type="checkbox"/> Good <input type="checkbox"/> Satisfactory <input type="checkbox"/> Poor <input type="checkbox"/> Very Poor |
| b) Private Clinic: | <input type="checkbox"/> Excellent <input type="checkbox"/> Good <input type="checkbox"/> Satisfactory <input type="checkbox"/> Poor <input type="checkbox"/> Very Poor |
| c) Other: | <input type="checkbox"/> Excellent <input type="checkbox"/> Good <input type="checkbox"/> Satisfactory <input type="checkbox"/> Poor <input type="checkbox"/> Very Poor |
50. Additional Comments about ATE:_____
- _____
- _____

Support for and Role of the Itinerant Teacher

51. How would you rate parental support?
☐Excellent ☐Good ☐Satisfactory ☐Poor ☐Very Poor

52. Do you feel you are acknowledged, recognized, or appreciated (by e.g. students, parents, AO's, District, etc.) for your efforts? Explain.

☐Yes (If yes, describe how you are acknowledged or recognized for your efforts.)

☐No (If no, describe how you could be acknowledged or recognized for your efforts.)

53. Which months of the school year do you find more demanding?

☐None

☐September

☐October

☐November

☐December

☐January

☐All

☐February

☐March

☐April

☐May

☐June

Explain.

54. How would you rate your preparedness/training for your role and responsibilities as an Itinerant Teacher of the Deaf and Hard of Hearing?

☐Excellent

☐Good

☐Satisfactory

☐Poor

☐Very Poor

Explain.

55. Describe the changes you have observed/experienced since you started in this role.

56. Describe further changes you see forth-coming (needed and/or imposed).

57. Describe the strategies you have in place to help manage with the demands and pressures of your job?

58. Please make any additional comments:

Thank you for your time and cooperation!

APPENDIX C

Teacher Stress Inventory (TSI) (Teacher Concerns Inventory)

TEACHER CONCERNS INVENTORY

The following are a number of teacher concerns. Please identify those factors that cause you stress in your present position. Read each statement carefully and decide if you ever feel this way about your job. Then, indicate how strong the feeling is when you experience it by circling the appropriate number on the 5-point scale. If you have not experienced this feeling, or if the item is inappropriate for your position, circle number 1 (no strength; not noticeable). The rating scale is shown at the top of each page.

Examples No How Strong? Major
 Strength Strength

I feel insufficiently prepared for my job 1 2 3 4 5

If you feel very strongly that you are insufficiently prepared for your job, you would circle number 5.

I feel that if I step back in either effort or commitment, I may be seen as less competent.

1 2 3 4 5

If you never feel this way, and the feeling does not have noticeable strength, you would circle number 1.

HOW STRONG? ?	1 no strength; not noticeable	2 mild strength; barely noticeable	3 medium strength; moderately noticeable	4 great strength; very noticeable	5 major strength; extremely noticeable
------------------	-------------------------------------	--	--	---	--

TIME MANAGEMENT

- | | | | | | |
|--|---|---|---|---|---|
| 1. I easily overcommit myself | 1 | 2 | 3 | 4 | 5 |
| 2. I become impatient if others do things too slowly. | 1 | 2 | 3 | 4 | 5 |
| 3. I have to try doing more than one thing at a time. | 1 | 2 | 3 | 4 | 5 |
| 4. I have little time to relax/enjoy the time of day. | 1 | 2 | 3 | 4 | 5 |
| 5. I think about unrelated matters during conversations. | 1 | 2 | 3 | 4 | 5 |
| 6. I feel uncomfortable wasting time. | 1 | 2 | 3 | 4 | 5 |
| 7. There isn't enough time to get things done. | 1 | 2 | 3 | 4 | 5 |
| 8. I rush in my speech. | 1 | 2 | 3 | 4 | 5 |

Add items 1 through 8; divide by 8; place score in the circle.

WORK-RELATED STRESSORS

- | | | | | | |
|--|---|---|---|---|---|
| 9. There is little time to prepare for my lessons/responsibilities. | 1 | 2 | 3 | 4 | 5 |
| 10. There is too much work to do. | 1 | 2 | 3 | 4 | 5 |
| 11. The pace of the school day is too fast. | 1 | 2 | 3 | 4 | 5 |
| 12. My caseload/class is too big. | 1 | 2 | 3 | 4 | 5 |
| 13. My personal priorities are being shortchanged due to time demands. | 1 | 2 | 3 | 4 | 5 |
| 14. There is too much administrative paperwork in my job. | 1 | 2 | 3 | 4 | 5 |

Add items 9 through 14; divide by 6; place score in the circle.

PROFESSIONAL DISTRESS

- | | | | | | |
|--|---|---|---|---|---|
| 15. I lack promotion and/or advancement opportunities. | 1 | 2 | 3 | 4 | 5 |
| 16. I am not progressing in my job as rapidly as I would like. | 1 | 2 | 3 | 4 | 5 |
| 17. I need more status and respect on my job. | 1 | 2 | 3 | 4 | 5 |
| 18. I receive an inadequate salary for the work I do. | 1 | 2 | 3 | 4 | 5 |
| 19. I lack recognition for the extra work and/or good teaching I do. | 1 | 2 | 3 | 4 | 5 |

Add items 15 through 19; divide by 5; place score in the circle.

HOW STRONG? ?	1 no strength; not noticeable	2 mild strength; barely noticeable	3 medium strength; moderately noticeable	4 great strength; very noticeable	5 major strength; extremely noticeable
---------------------	---	--	--	---	--

DISCIPLINE AND MOTIVATION

I feel frustrated ...

- | | | | | | |
|---|---|---|---|---|---|
| 20. ... because of discipline problems in my classroom. | 1 | 2 | 3 | 4 | 5 |
| 21. ... having to monitor pupil behavior. | 1 | 2 | 3 | 4 | 5 |
| 22. ... because some students would do better if they tried. | 1 | 2 | 3 | 4 | 5 |
| 23. ... attempting to teach students who are poorly motivated. | 1 | 2 | 3 | 4 | 5 |
| 24. ... because of inadequate/poorly defined discipline problems. | 1 | 2 | 3 | 4 | 5 |
| 25. ... when my authority is rejected by pupils/administration. | 1 | 2 | 3 | 4 | 5 |

Add items 20 through 25; divide by 6; place score in the circle.

PROFESSIONAL INVESTMENT

- | | | | | | |
|--|---|---|---|---|---|
| 26. My personal opinions are not sufficiently aired. | 1 | 2 | 3 | 4 | 5 |
| 27. I lack control over decisions made about classroom/school matters. | 1 | 2 | 3 | 4 | 5 |
| 28. I am not emotionally/intellectually stimulated on the job. | 1 | 2 | 3 | 4 | 5 |
| 29. I lack opportunities for professional improvement. | 1 | 2 | 3 | 4 | 5 |

Add items 26 through 29; divide by 4; place score in the circle.

EMOTIONAL MANIFESTATIONS

I respond to stress ...

- | | | | | | |
|------------------------------------|---|---|---|---|---|
| 30. ... by feeling insecure. | 1 | 2 | 3 | 4 | 5 |
| 31. ... by feeling vulnerable. | 1 | 2 | 3 | 4 | 5 |
| 32. ... by feeling unable to cope. | 1 | 2 | 3 | 4 | 5 |
| 33. ... by feeling depressed. | 1 | 2 | 3 | 4 | 5 |
| 34. ... by feeling anxious. | 1 | 2 | 3 | 4 | 5 |

Add items 30 through 34; divide by 5; place score in the circle.

FATIGUE MANIFESTATIONS

I respond to stress ...

- | | | | | | |
|--|---|---|---|---|---|
| 35. ... by sleeping more than usual. | 1 | 2 | 3 | 4 | 5 |
| 36. ... by procrastinating. | 1 | 2 | 3 | 4 | 5 |
| 37. ... by becoming fatigued in a very short time. | 1 | 2 | 3 | 4 | 5 |
| 38. ... with physical exhaustion. | 1 | 2 | 3 | 4 | 5 |
| 39. ... with physical weakness. | 1 | 2 | 3 | 4 | 5 |

Add items 35 through 39; divide by 5; place score in the circle.

CARDIOVASCULAR MANIFESTATIONS

I respond to stress ...

- | | | | | | |
|--|---|---|---|---|---|
| 40. ... with feelings of increased blood pressure. | 1 | 2 | 3 | 4 | 5 |
| 41. ... with feeling of heart pounding or racing. | 1 | 2 | 3 | 4 | 5 |
| 42. ... with rapid and/or shallow breath. | 1 | 2 | 3 | 4 | 5 |

Add items 40 through 42; divide by 3; place score in the circle.

HOW STRONG? ?	1 no strength; not noticeable	2 mild strength; barely noticeable	3 medium strength; moderately noticeable	4 great strength; very noticeable	5 major strength; extremely noticeable
---------------------	---	--	--	---	--

GASTRONOMICAL MANIFESTATIONS

I respond to stress . . .

43. . . . with stomach pain of extended duration.	1	2	3	4	5
44. . . . with stomach cramps.	1	2	3	4	5
45. . . . with stomach acid.	1	2	3	4	5

Add items 43 through 45; divide by 3; place score in the circle.

BEHAVIORAL MANIFESTATIONS

I respond to stress . . .

46. . . . by using over-the-counter drugs.	1	2	3	4	5
47. . . . by using prescription drugs.	1	2	3	4	5
48. . . . by using alcohol.	1	2	3	4	5
49. . . . by calling in sick.	1	2	3	4	5

Add items 46 through 49; divide by 4; place score in the circle.

TOTAL SCORE (add all circles; divide by 10)

APPENDIX D

Means of Items on the Teacher Stress Inventory (TSI) (Table D1)

Table D1

Means of Items on the Teacher Stress Inventory (TSI)

Item #	Stem	<i>n</i>	Mean	Standard Deviation
6	I feel uncomfortable wasting time.	66	3.59	1.23
7	There isn't enough time to get things done.	66	3.53	1.11
10	There is too much work to do.	66	3.45	1.11
14	There is too much administrative paperwork in my job.	66	3.30	1.29
12	My caseload/class is too big.	66	3.27	1.31
1	I easily overcommit myself.	66	3.18	1.04
34	I respond to stress by feeling anxious.	68	3.16	1.29
9	There is little time to prepare for my lessons/responsibilities.	66	3.15	1.22
4	I have little time to relax/enjoy the time of day.	66	3.09	1.29
11	The pace of the school day is too fast.	66	2.97	1.05
13	My personal priorities are being shortchanged due to time demands.	66	2.89	1.30
3	I have to try doing more than one thing at a time.	66	2.86	1.16
38	I respond to stress with physical exhaustion.	68	2.66	1.31
27	I lack control over decisions made about classroom/school matters.	68	2.60	1.28
19	I lack recognition for the extra work and/or good teaching I do.	66	2.55	1.37
2	I become impatient if others do things too slowly.	66	2.52	1.07
37	I respond to stress by becoming fatigued in a very short time.	68	2.49	1.17
30	I respond to stress by feeling insecure.	68	2.46	1.35
36	I respond to stress by procrastinating.	68	2.37	1.16
23	I feel frustrated attempting to teach students who are poorly motivated.	68	2.35	1.14
33	I respond to stress by feeling depressed.	68	2.34	1.18
8	I rush in my speech.	66	2.29	1.11
18	I receive an inadequate salary for the work I do.	66	2.27	1.28
15	I lack promotion and/or advancement opportunities.	66	2.26	1.30
22	I feel frustrated because some students would do better if they tried.	68	2.25	1.18
32	I respond to stress by feeling unable to cope.	68	2.24	1.22

Table D1 (continued)

Item #	Stem	<i>n</i>	Mean	Standard Deviation
35	I respond to stress by sleeping more than usual.	68	2.24	1.36
31	I respond to stress by feeling vulnerable.	68	2.21	1.18
29	I lack opportunities for professional improvement.	68	2.18	1.29
5	I think about unrelated matters during conversations.	66	2.17	1.00
17	I need more status and respect on my job.	66	2.15	1.00
39	I respond to stress with physical weakness.	68	2.15	1.21
16	I am not progressing in my job as rapidly as I would like.	66	2.03	1.07
41	I respond to stress with feeling of heart pounding or racing.	68	1.97	1.27
26	My personal opinions are not sufficiently aired.	68	1.93	1.12
28	I am not emotionally/intellectually stimulated on the job.	68	1.85	1.05
49	I respond to stress by calling in sick.	68	1.74	1.06
25	I feel frustrated when my authority is rejected by pupils/administration.	68	1.71	0.98
45	I respond to stress with stomach acid.	68	1.69	1.16
42	I respond to stress with rapid and/or shallow breath.	68	1.66	1.05
43	I respond to stress with stomach pain of extended duration.	68	1.60	1.12
44	I respond to stress with stomach cramps.	68	1.59	1.08
24	I feel frustrated because of inadequate/poorly defined discipline problems.	68	1.57	0.92
40	I respond to stress with feelings of increased blood pressure.	68	1.53	1.03
21	I feel frustrated having to monitor pupil behavior.	68	1.50	0.68
48	I respond to stress by using alcohol.	68	1.44	0.92
46	I respond to stress by using over-the-counter drugs.	68	1.38	0.91
20	I feel frustrated because of discipline problems in my classroom.	68	1.32	0.56
47	I respond to stress by using prescription drugs.	68	1.22	0.64

APPENDIX E

Variable Labels and Descriptions (Table E1)

Descriptive and Oneway ANOVAs of *Number/FTE* Subgrouped by Part-time and Full-Time FTE Status (Tables E2 and E3)

Table E1

Variable Labels and Descriptives

Variable Label	Variable
TSS	Total Stress Score
YRSTEACH	Number of years of total teaching experience
YRSDHH	Number of years working with deaf and hard of hearing students
YRSITIN	Number of years working as an itinerant teacher of the deaf and hard of hearing
ITINFTE	Itinerant full-time equivalent
MEETTDHH	Frequency of meeting colleagues
R.AGE.TE	Range of age groups taught
COMMSCHO	Communication with school personnel
PARSUPP	Parental support
ABILROOM	Ability to have specific rooms assigned in schools
RATEROOM	Room quality
IEP.AUTH	IEPs authored as a percent of direct caseload
TRAINING	Itinerant teacher training
AVGDRIVE	Average driving distance from one location to another
WEATHER	Frequency of weather interfering with travel
N.SCHOOL	Number of schools responsible for
N.SCHDAY	Average number of schools directly serviced each day
N.OFTDHH	Number of teachers of the deaf and hard of hearing in the district
N.WW.TOT	Number/FTE of support staff worked with
N.HRSATE	Number of hours each week spent with ATE
Z.DIRECT	Number/FTE of students on direct caseload
Z.CONsul	Number/FTE of students on consult caseload
Z.HRS.DW	Number/FTE of hours directly working with students each week
Z.HRSATE	Number/FTE of hours spent working on ATE each week
Z.INAD.S	Number/FTE of direct students inadequately supported
Z.OTHSPN	Number/FTE of direct students with other special needs
Z.HRTRAV	Number/FTE of hours travelling each week
Z.WKMILE	Mileage (km)/FTE each week
Z.HR.PREP	Number/FTE of hours preparing lessons each week
Z.HRSOFF	Number/FTE of designated office hours each week
Z.SCHOOL	Number/FTE of schools responsible for
Z.WWAO	Number/FTE of administrators worked with
Z.WWCOUN	Number/FTE of counsellors worked with
Z.WWCT	Number/FTE of classroom teachers worked with
Z.WWESL	Number/FTE of ESL teachers worked with
Z.WWLRT	Number/FTE of learning resource teachers worked with
Z.WWSEA	Number/FTE of special education assistants worked with
Z.WWSLP	Number/FTE of speech and language pathologists worked with

Table E2

Descriptives of Numbers/FTE Subgrouped by Part-time and Full-time FTE Status

Experience Subgroups		<i>n</i>	Mean	Standard Deviation	Minimum	Maximum
Z.CONSUL	Part-time	30	22.35	23.32	0.00	72.50
	Full-time	35	20.60	21.63	0.00	80.00
	Total	65	21.41	22.27	0.00	80.00
Z.DIRECT	Part-time	34	19.75	9.55	10.00	65.00
	Full-time	36	17.67	4.36	7.00	27.00
	Total	70	18.68	7.37	7.00	65.00
Z.HRPREP	Part-time	32	8.73	5.49	0.00	20.50
	Full-time	33	6.42	3.80	0.50	18.00
	Total	65	7.56	4.82	0.00	20.00
Z.HRS.DW	Part-time	27	19.87	4.31	13.75	30.00
	Full-time	34	18.77	4.67	10.00	30.00
	Total	61	19.26	4.51	10.00	30.00
Z.HRSATE	Part-time	29	3.23	1.91	0.63	7.00
	Full-time	29	1.60	1.06	0.50	5.00
	Total	58	2.41	1.74	0.50	7.00
Z.HRSOFF	Part-time	32	2.72	2.70	0.00	10.00
	Full-time	35	2.25	1.67	0.00	7.00
	Total	67	2.47	2.21	0.00	10.00
Z.HRTRAV	Part-time	32	7.10	5.29	0.83	25.00
	Full-time	33	6.65	4.23	1.50	20.00
	Total	65	6.87	4.75	0.83	25.00
Z.INAD.S	Part-time	33	5.04	9.32	0.00	50.00
	Full-time	35	3.71	3.54	0.00	12.00
	Total	68	4.36	6.95	0.00	50.00
Z.OTHSPN	Part-time	33	4.15	2.91	0.00	15.00
	Full-time	34	3.86	2.73	0.00	10.00
	Total	67	4.00	2.81	0.00	15.00
Z.SCHOOL	Part-time	34	13.62	8.21	5.00	50.00
	Full-time	36	9.81	3.47	5.00	21.00
	Total	70	11.66	6.48	5.00	50.00
Z.WKMILE	Part-time	32	170.18	102.51	38.33	500.00
	Full-time	36	178.26	136.06	40.00	700.00
	Total	68	174.46	120.62	38.33	700.00

Table E2 (continued)

Experience Subgroups		<i>n</i>	Mean	Standard Deviation	Minimum	Maximum
Z.WWAO	Part-time	14	11.89	8.73	0.00	29.20
	Full-time	22	9.95	5.46	0.00	21.00
	Total	36	10.71	6.87	0.00	29.20
Z.WWCOUN	Part-time	14	4.72	6.67	0.00	21.90
	Full-time	22	5.73	6.71	0.00	22.00
	Total	36	5.33	6.62	0.00	22.00
Z.WWCT	Part-time	14	28.10	21.56	13.75	98.75
	Full-time	22	26.27	22.23	6.00	101.00
	Total	36	26.98	21.68	6.00	101.00
Z.WWESL	Part-time	14	1.21	1.80	0.00	6.25
	Full-time	22	1.59	3.20	0.00	15.00
	Total	36	1.44	2.72	0.00	15.00
Z.WWLRT	Part-time	14	7.51	6.00	0.00	18.00
	Full-time	22	7.32	4.50	1.00	16.00
	Total	36	7.39	5.05	0.00	18.00
Z.WWSEA	Part-time	14	3.55	4.27	0.00	12.86
	Full-time	22	3.95	3.09	0.00	12.00
	Total	36	3.80	3.54	0.00	12.86
Z.WWSLP	Part-time	14	2.74	1.98	0.00	6.00
	Full-time	22	3.36	2.52	1.00	10.00
	Total	36	3.12	2.31	0.00	10.00

Table E3

Oneway ANOVAs of *Numbers/FTE* Subgrouped by Part-time and Full-time FTE Status

	Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	Significance
Z.CONSUL					
Between Groups	49.31	1	49.31	0.098	.755
Within Groups	31686.89	63	502.97		
Total	31736.20	64			
Z.DIRECT					
Between Groups	76.03	1	76.03	1.408	.240
Within Groups	3672.54	68	54.01		
Total	3748.57	69			
Z.HRPREP					
Between Groups	86.67	1	86.67	3.903	.053
Within Groups	1398.93	63	22.21		
Total	1485.60	64			
Z.HRS.DW					
Between Groups	18.11	1	18.11	0.889	.350
Within Groups	1202.68	59	20.38		
Total	1220.80	60			
Z.HRSATE					
Between Groups	38.47	1	38.47	16.093	.000
Within Groups	133.86	56	2.39		
Total	172.33	57			
Z.HRSOFF					
Between Groups	3.62	1	3.62	0.736	.394
Within Groups	319.72	65	4.91		
Total	323.34	66			

Table E3 (continued)

	Sum of Squares	df	Mean Square	F	Significance
Z.HRTRAV					
Between Groups	3.23	1	3.23	0.141	.709
Within Groups	1442.70	63	22.90		
Total	1445.92	64			
Z.INAD.S					
Between Groups	29.88	1	29.88	0.616	.435
Within Groups	3202.00	66	48.52		
Total	3231.88	67			
Z.OTHSPN					
Between Groups	1.44	1	1.44	0.181	.672
Within Groups	517.85	65	7.97		
Total	519.29	66			
Z.SCHOOL					
Between Groups	253.82	1	253.82	6.528	.013
Within Groups	2643.76	68	38.88		
Total	2897.56	69			
Z.WKMILE					
Between Groups	1107.10	1	1107.10	0.075	.785
Within Groups	973626.40	66	14751.92		
Total	974733.50	67			
Z.WWAO					
Between Groups	31.93	1	31.93	0.671	.418
Within Groups	1618.74	34	47.61		
Total	1650.68	35			
Z.WWCOUN					
Between Groups	8.74	1	8.74	0.195	.662
Within Groups	1525.46	34	44.87		
Total	1534.20	35			

Table E3 (continued)

	Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	Significance
Z.WWCT					
Between Groups	28.54	1	28.54	0.059	.809
Within Groups	16422.02	34	483.00		
Total	16450.56	35			
Z.WWESL					
Between Groups	1.25	1	1.25	0.166	.687
Within Groups	257.22	34	7.57		
Total	258.47	35			
Z.WWLRT					
Between Groups	0.32	1	0.32	0.012	.913
Within Groups	893.09	34	26.27		
Total	893.41	35			
Z.WWSEA					
Between Groups	1.38	1	1.38	0.107	.745
Within Groups	438.36	34	12.89		
Total	439.74	35			
Z.WWSLP					
Between Groups	3.29	1	3.29	0.608	.441
Within Groups	184.21	34	5.42		
Total	187.50	35			

APPENDIX F

Correlational Matrix of Total Stress Scores (TSSs), Selected Itinerant Teacher Questionnaire (ITQ) Items, and Numbers/FTE (Table F1)

Table F1

Correlational Matrix of TSSs, Selected ITO Items, and Numbers/FTE

Correlations:	TSS	IEP.AUTH	N.SCHDAY	YRSDHH	YRSITIN	YRSTEACH	ITINFTE	AVGDRIVE
Pearson r Correlations								
TSS	1.00							
IEP.AUTH	-.063	1.00						
N.SCHDAY	.123	.091	1.00					
YRSDHH	.116	.197	.147	1.00				
YRSITIN	-.048	.350**	.091	.763**	1.00			
YRSTEACH	.103	.211	.125	.888**	.673**	1.00		
ITINFTE	.086	-.024	-.014	.080	.094	.103	1.00	
AVGDRIVE	-.001	-.226	-.092	-.237	-.210	-.315*	.208	1.00
N.WW.TOT	.426*	-.002	.190	.172	.079	.165	-.022	-.215
N.HRSATE	-.025	.032	.321*	-.010	-.140	.092	-.082	.060
N.SCHOOL	.116	-.067	.355**	.014	-.112	.063	.524**	.080
Z.CONSUL	-.253*	-.335**	-.089	-.193	-.210	-.212	-.099	-.123
Z.DIRECT	.100	.024	.469**	-.132	-.200	-.106	-.271*	-.126
Z.HRS.DW	.053	.133	.183	.027	.001	.082	-.201	-.036
Z.HRTRAV	.095	-.026	.195	-.079	-.092	.006	-.220	.055
Z.INAD.S	.311*	.149	.544**	-.131	-.091	-.141	-.250*	-.014
Z.OTHSPN	.111	-.128	-.101	-.102	-.102	-.103	-.063	-.242
Z.WKMILE	-.125	-.128	-.049	-.229	-.136	-.233	-.019	.544**
Z.HR.PREP	.021	.210	.144	-.041	-.001	-.017	-.263*	.029
Z.HRSOFF	-.001	-.037	-.182	-.281*	-.262*	-.157	-.265*	.139
N.OFTDHH	.126	.221	-.019	.125	.024	.132	-.014	-.265*
Spearman's Rho Correlations								
ABILROOM	-.413**	.083	-.139	.138	.112	.188	-.107	-.149
COMMSCHO	-.239	.311**	-.054	.015	.259*	.002	.001	.016
MEETTDHH	-.159	.002	.141	.008	.013	.035	.025	-.125
PARSUPP	-.032	.156	-.041	.170	.276*	.125	.102	.078
R.AGE.TE	.036	-.242*	-.161	-.327**	-.234	-.281*	.195	.235
RATEROOM	-.262*	.051	-.188	.065	.043	.128	-.101	-.187
TRAINING	-.134	.090	-.281*	.007	.011	-.055	.075	.208
WEATHER	.323**	.111	.131	.040	.071	-.006	.061	.264*

Table F1 (continued)

Correlations:	N.WW.TOT	N.HRSATE	N.SCHOOL	Z.CONSLT	Z.DIRECT	Z.HRS.DW	Z.HRSTRV	Z.INAD.S
Pearson r Correlations								
TSS								
IEP.AUTH								
N.SCHDAY								
YRS.DHH								
YRS.ITIN								
YRS.TEACH								
ITIN.FTE								
AVG.DRIVE								
N.WW.TOT	1.00							
N.HRSATE	-.222	1.00						
N.SCHOOL	-.012	.169	1.00					
Z.CONSLT	.018	.137	.087	1.00				
Z.DIRECT	.113	.245	.091	.013	1.00			
Z.HRS.DW	.051	.142	.038	.072	.008	1.00		
Z.HRTRV	-.166	.191	-.061	-.001	.127	-.166	1.00	
Z.INAD.S	.203	.254	.059	-.129	.719**	.128	.321**	1.00
Z.OTHSPN	.233	-.124	.054	-.025	.308*	.078	-.140	.165
Z.WKMILE	-.255	.047	-.061	-.054	-.185	.035	.233	-.046
Z.HR.PREP	.313	-.104	-.160	-.068	-.068	.366**	.148	.052
Z.HRSOFF	-.012	.190	-.036	.128	.091	.022	.111	-.017
N.OFTDHH	.271	-.075	-.129	-.140	.131	.026	-.281*	-.039
Spearman's Rho Correlations								
ABILROOM	-.034	.165	-.137	.068	-.022	.036	-.210	-.392**
COMMSCHO	.068	-.264*	-.227	-.202	-.328**	-.107	-.138	-.200
MEETTDHH	.311	-.135	.083	.389**	-.010	-.026	-.103	-.189
PARSUPP	.252	-.026	-.098	-.021	-.285*	-.051	-.010	-.029
R.AGE.TE	-.014	-.138	.105	.005	-.250*	-.107	.026	.038
RATEROOM	.017	.086	-.105	.010	.201	.025	-.176	-.187
TRAINING	-.074	.155	-.167	.117	-.072	-.191	.146	-.041
WEATHER	.006	.225	-.026	-.134	-.060	.136	.284*	.329**

Table F1 (continued)

Correlations:	Z.OTHSPN	Z.WKMILE	Z.HR.PREP	Z.HRS.OFF	N.OFTDHH	ABILROOM	COMMSCHO	MEETTDHH
Pearson r Correlations								
TSS								
IEP.AUTH								
N.SCHDAY								
YRSDHH								
YRSITIN								
YRSTEACH								
ITINFTE								
AVGDRIVE								
N.WW.TOT								
N.HRSATE								
N.SCHOOL								
Z.CONsul								
Z.DIRECT								
Z.HRS.DW								
Z.HRTRAV								
Z.INAD.S								
Z.OTHSPN	1.00							
Z.WKMILE	-.217	1.00						
Z.HR.PREP	-.122	.273*	1.00					
Z.HRSOFF	-.150	.096	-.035	1.00				
N.OFTDHH	.294*	-.371**	.068	-.232	1.00			
Spearman's Rho Correlations								
ABILROOM	-.281*	-.081	-.106	.199	.089	1.00		
COMMSCHO	-.264*	.065	.156	-.096	.072	.315**	1.00	
MEETTDHH	-.011	-.107	-.039	.025	.361**	.172	.024	1.00
PARSUPP	-.172	.296*	.404**	-.153	.014	.183	.231	-.047
R.AGE.TE	.075	.159	-.052	.184	-.360**	-.158	.016	-.314**
RATEROOM	-.108	-.071	.063	.189	.071	.725**	.117	.104
TRAINING	.034	-.181	.245*	-.101	.249*	.036	-.104	.006
WEATHER	-.147	.337**	.348**	-.237	-.210	-.150	.082	-.292

Table F1 (continued)

Correlations:	PARRSUPP	R.AGE.TE	RATEROOM	TRAINING	WEATHER
Pearson r Correlations					
TSS					
IEP.AUTH					
N.SCHDAY					
YRSDHH					
YRSITIN					
YRSTEACH					
ITINFTE					
AVGDRIVE					
N.WW.TOT					
N.HRSATE					
N.SCHOOL					
Z.CONSUL					
Z.DIRECT					
Z.HRS.DW					
Z.HRTRAV					
Z.INAD.S					
Z.OTHSPN					
Z.WKMILE					
Z.HR.PREP					
Z.HRSOFF					
N.OFTDHH					
Spearman's Rho Correlations					
ABILROOM					
COMMSCHO					
MEETTDHH					
PARSUPP	1.00				
R.AGE.TE	.007	1.00			
RATEROOM	.290*	-.104	1.00		
TRAINING	.006	.121	.153	1.00	
WEATHER	.266*	.015	-.089	-.033	1.00