

FACTORS THAT CONTRIBUTE TO ATTRITION OF TEACHERS IN  
TEXAS' PUBLIC SCHOOLS

by

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A thesis submitted to the Graduate Council of  
Texas State University in partial fulfillment  
of the requirements for the degree of  
Master of Arts  
with a Major in Psychological Research  
August 2015

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## **ACKNOWLEDGEMENTS**

It is a pleasure to thank those who made this thesis possible. I am heartily thankful to my mentor, Dr. Krista Howard, who provided encouragement, guidance and support from the start to the end of completing this thesis and receiving a Masters in Psychological Research from Texas State University. I am grateful for Dr. Natalie Ceballos for providing guidance and mentoring on the proper procedures for conducting psychological research. I would also like to thank Dr. Kelly Haskard Zolnierek for encouragement and support for pushing me to be the best student possible. I am thankful that Dr. Paul Raffeld, for guidance and mentoring on establishing psychometrics quality of this study. Without the support of Dr. Howard, Dr. Ceballos, Dr. Haskard Zolnierek, and Dr. Raffeld, Dr. Graham and the Masters of Art Program at Texas State University, this thesis would not have been possible. Lastly, I offer my regards and blessings to all of those who supported me in any respect during the completion of the thesis.

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## **ABSTRACT**

The purpose of this study is to systematically evaluate the occupational, health and demographic factors most associated with attrition within the Texas public school system. High attrition rates of teachers are detrimental and costly for schools. 2,588 teachers from 46 public school districts in Texas participated in an occupational health survey. Attrition was assessed by the intent to leave the profession for reasons not related to retirement. Individuals who indicated they were 100% likely to leave teaching profession within a year were compared to individuals that had zero intention to leave the profession. The variables analyzed for contribution towards intention to quit the teaching profession were basic teacher/classroom/school specific demographics, occupational indicators (organizational commitment, job involvement, job support, job control, climate and school problems) and health factors (stress, physical and mental quality of life and Axis I Psychopathology (Depression, Anxiety, Panic, Somatization)). A multivariate logistic regression was used to examine which variables are key predictors of attrition within the Texas public school system. The results of this study suggest a combination of various predictors, organizational commitment, job control, depression and male gender, contribute to overall intention to leave the teaching profession. Organizational commitment was negatively related to attrition, the odds ratios suggest for every one unit increase in organization commitment there is a 28.7% decreased in odds of being part of the attrition group. Job control was also negatively associated with attrition, indicating a 13.9% decrease of being part of attrition group for every unit increase of job control.

Major depression, another significant indicator of attrition within this sample; teachers with major depression were 2.76 times more likely to quit. Male gender was 3.6 times more likely to be part of the Attrition group when compared to women. The results suggest improving occupational factors within the school would be the best way to counter early attrition rates in teachers. Special attention should be directed towards improving the working conditions that lead to teachers wanting to quit the profession, which could ultimately reduce the high attrition rates and also attract individuals into the profession.

# CHAPTER I

## INTRODUCTION

Replacing a valuable employee can be detrimental to an organization because of the high cost and the disruption to the work environment. The distraction of employees exiting or quitting the workplace can reduce productivity, organizational effectiveness and morale (Aarons & Sawitxky, 2006; Boe, Cook & Sunderland, 2008). If the employee is replaced with a less than qualified individual, this can lead to a negative impact on the company (Abelson & Baysinger, 1984; Billingsley, 2004; Blau & Boal, 1987; Boe et al., 2008). A company needs to understand why employees leave and to use this information to incorporate changes to improve the work environment. These changes are necessary in order to retain valuable individuals and to attract future employees to the organization.

This thesis will provide an analysis of an employee's withdrawal process from an organization. In addition, a discussion will demonstrate the related occupational, health and demographic variables that contribute to employees' intentions to quit within the general occupational setting. Specifically, an examination of attrition within the education sector will be reviewed and a narrow focus on variables that are associated with leaving the teaching profession will be examined. The ultimate goal of this study is to identify the variables related to a public school teacher's intention to quit, which will highlight opportunities for change and improvement in retention.

## CHAPTER II

### LITERATURE REVIEW

#### **Withdrawal Process**

There are various ways an employee can withdraw or remove his or herself from a job or an organization (Landy & Conte, 2013). This act of separation is called turnover and is comprised of both employee transfer and employee attrition (Boe, Bobbit, Cook, Whitener, & Weber, 1997; Landy & Conte, 2013). When one moves to a new position but remains within the same organization, this is the action of transferring. Attrition is when the employee quits the organization or occupation completely (Boe et al., 1997; Landy & Conte, 2013). The focus of this review will be on attrition.

Employees typically contemplate leaving the organization. The best predictor of any subsequent behavior is the expressed intention to do that behavior (Arnold & Feldman, 1982; Mobley, 1977; Mobley et al., 1979; Mobley, 1982; Porter & Steers, 1973; Shore & Martin, 1989; Steel & Oval, 1984). Thinking about quitting is the step before taking action, which explains why many studies use intent to leave as a way to measure attrition (Billingsley, 2004; Cotton & Tulle 1986; Mobley, 1977; Mobley et al., 1979). Leaving intentions have a strong positive correlation with turnover (Cotton & Tulle 1986; Mobley et al., 1979; Shore & Martin 1989). Intent accounts for the most variance in turnover; a combination of other factors, including occupational, health and demographic variables, contributes to the rest of the variance in turnover (Cotton & Tulle 1986; Mobley et al., 1979). A multitude of factors have been shown to contribute to the overall prediction of intention to quit (Arnold & Feldman, 1982; Mobley, 1977; Mobley et al., 1979; Mobley 1982; Porter & Steers, 1973; Steel & Oval, 1984). Finding a way to decrease an employee's likelihood to quit can lower the rate of attrition.

## **Occupational Factors Associated with Attrition**

There are many factors in the occupation setting that are known to contribute to attrition; some of those factors are organizational commitment, job satisfaction, and workplace climate (Cotton & Tulle, 1986; Mobley et al., 1979; Porter & Steers, 1973). Commitment in the workplace is associated with the psychological and emotional connections that an employee has with his or her job; these are displayed as the acceptance of organization goals and the desire to be part of the company (Billingsley, 2004; Landy & Conte, 2013; Wunder, Dougherty, & Welsh, 1982). Level of commitment is measured by the employee's identification and involvement with the organization. Engaging in enthusiastic work, putting in extra effort, and displaying pride in one's work are characteristics of individuals who identify with, or are highly involved in his/her job (Cheloha & Far, 1980; Landy & Conte, 2013; Lawler & Hall, 1970; Price 2001). People with stronger identification and involvement with the job are less likely to leave the occupation, indicating a negative relationship between occupational commitment and attrition (Angle & Perry, 1981; Billingsley, 2004; Blau & Boal 1987; Cotton & Tulle, 1986; Mobley et al., 1979; Porter & Steers, 1973). Organizational commitment accounts for the most variance in attrition when compared to the other occupational factors, making commitment the best predictor of attrition within the general occupational setting (Mobley et al., 1979; Shore & Martin, 1989). There is a need to explore the variables that impact commitment when reviewing attrition.

In addition to commitment, employee satisfaction is a focus of study when discussing attrition. Satisfaction is the result of an employee's appraisal of a positive job experience, while a negative perception results in dissatisfaction (Landy & Conte, 2013).

Level of satisfaction towards one's job depends on the amount of control and support an employee has within his or her job (Mondal, Shrestha & Bhaila, 2011). Feeling in control at work is important. Control has a negative relationship with intention to quit, implying that the more control one perceives the lower likelihood one will intend to quit (Barling & Kelloway, 1996; Porter & Steers, 1973). Another workplace factor that promotes satisfaction is feeling supported in the work community, such that a workplace with supportive coworkers has a higher retention rate (Billingsley, 2004; Elshout, Scherp, & Van Der Feltz-Cornelis, 2013; Price, 2001; Porter & Steers, 1973). Non-support from coworkers can make one feel alienated in the workplace and can lead to dissatisfaction towards the job. Job satisfaction has a negative relationship with intent to leave, implying that the less satisfied a person is with his/her job, the higher likelihood they will quit (Cotton & Tulle, 1986; Mobley et al., 1979; Porter & Steers, 1973). Both satisfaction and commitment are related to attrition.

It is generally known that every workplace has a culture or climate. Occupational climate is the employee's perception of the basic character of the workplace environment; this character is comprised of the culture, the ethics, and interactions between people (Aarons & Sawitzky, 2006; Billingsley, 2004; Landy & Conte, 2013). Shared meanings, expectations, norms and behaviors of all employees within the workforce refers to the culture of the organization and affects the climate (Landy & Conte, 2013). Individuals who demonstrate unequal treatment, who are abusive, and use untrusting behaviors will negatively impact the organizational climate (Aarons & Sawitzky, 2006; Billingsley, 2004; Porter & Steers, 1973). However, a positive supportive interaction between individuals can aid in dealing with the changes of the workplace and improve perceptions

of the climate (Porter & Steer, 1973). These attributes have an impact on attrition. Individuals who perceive the workplace climate as being positive will have lower attrition rates, while a negative perception can lead to a higher likelihood of leaving (Aarons & Sawitxky, 2006; Porter & Steer, 1973). There are indirect workplace climate predictors of attrition; positive cultures and climates relate to more satisfaction and commitment, which, in turn, can make employees less likely to quit (Aarons & Sawitxky, 2006; Porter & Steer, 1973). There is value in examining how organizational commitment, job satisfaction and climate interplay with other variables in relation to attrition.

### **Health Factors Associated with Attrition**

Stress is a typical experience in most workplace settings. Stress is an event in which the well-being of an individual is endangered due to an imbalance of resources between the environment and the individual (Lazarus & Folkman, 1984). When demands experienced by an individual are more than they can handle, this imbalance creates stress (Lazarus & Folkman, 1984; Price, 2001). Stress is not always seen as negative; stress can be helpful to workers. There are two types of stress, eustress and distress. Eustress, the good stress, motivates employees to meet the demands of the workplace. The negative outcomes related to demanding situations are considered to be a bad type of stress, called distress (Landy & Conte, 2013). The relationship between employee performance and stress follows an inverted U-shape distribution. Little or moderate stress (eustress) can have positive outcomes for both the individual and the organization while chronic or long-term exposure to stress (distress) can be detrimental (Landy & Conte, 2013). Stressors are the factors that are directly related to the onset of stress. For example, time

constraints and an overwhelming workload are the most commonly noted workplace stressors (Landy & Conte, 2013). Stressors within the job directly relate to individuals' quitting (Wunder et al., 1982). These job strains can reduce satisfaction and commitment, indirectly leading to attrition (Dworkin, Haney, & Telschow, 1990; Landy & Conte, 2013; Mobley et al., 1979; Porter & Steers, 1973; Shore & Martin 1989; Wunder et al., 1982). Being able to identify these stress factors has importance in other ways in addition to affecting workplace attrition.

For example, quality of life is of value within and outside the workplace. Quality of life refers to the mental and physical well-being of an individual, which is attributed to the absence of a mental disorder or ill health (Danna & Griffen, 1999; Landy & Conte, 2013; Van Dierendonck, Haynes, Borrill & Stride, 2004). Reduction of an individual's well-being is related to higher rates of attrition (Danna & Griffen, 1999; Van Dierendonck et al., 2004). The mental health of individuals is often assessed by examining the presence of Axis I psychological disorders: anxiety, depression, somatization and panic, which are documented to increase attrition rates (Baba et al., 1998; Porter & Steers, 1973). Anxiety disorder is exemplified by excessive worrying and tension created by the possibility of perceived danger (Baba, Jamal & Tourigny, 1998; Comer, 2010; Porter & Steers, 1973). A person dealing with depression often has negative and sad feelings leading to self-destructive behavior and difficulties handling challenges and problems (Baba., et al 1998; Comer, 2010). Somatization disorder is characterized by a manifestation of physical symptoms with no underlying medical cause (Comer, 2010). Panic disorder involves reoccurring attacks of concern and worrying that affect and change behavior (Comer, 2010). Axis I disorders have been found to be higher

in individuals who intend to quit his/her job (Baba., et al 1998; Comer, 2010; Porter & Steers, 1973).

Little research has been published on the relationship between attrition and physical health. Poor physical function and the presence of physical disabilities of an individual in relation to attrition have yielded inconsistent results (Kemery, Mossholder & Bedian, 1987; Williams, Konad, Scheckler, Pathman, Linzer, McMurray, Gerrity & Schwartz, 2001). Some studies report that as physical health worsens the individual is more likely to quit, while other studies found no significant relationships between physical health and attrition (Kemery et al., 1987; Williams et al., 2001). Most research indicates stress is a mediator between physical health and attrition; the people who perceive greater stress, also report poorer health and a higher likelihood to quit (Dworkin et al., 1990). Identifying stressors has a widespread appeal because of the impact on health and the implications of stress for attrition rates.

### **Demographic Factors Associated with Attrition**

Most attrition studies attempt to explain results in demographic terms. Demographics, specifically, age, gender, marital status, and number of dependents, in relation to attrition, have been explored in great detail (Arnold & Feldman 1982; Cotton & Tulle, 1986; Mobley et al., 1979; Porter & Steers, 1973; Shen, 1997). Age is negatively related to attrition; the older someone gets the less likely they are to quit their job (Arnold & Feldman 1982; Cotton & Tulle, 1986; Mobley et al., 1979; Porter & Steers, 1973). In regards to gender, some studies indicate women have higher rates of attrition while no relationships are found in other studies (Arnold & Feldman 1982; Cotton & Tulle, 1986; Mobley et al., 1979; Porter & Steers, 1973; Shen, 1997). In

addition, individuals who are single have a higher likelihood to quit than those who are married (Arnold & Feldman, 1982; Mobley et al., 1979). Some studies indicate people with zero dependents have higher rates of attrition, while other studies find gender to mediate the effects between dependents and attrition (Arnold & Feldman 1982; Cotton & Tulle, 1986; Mobley et al., 1979; Porter & Steers, 1973; Shen, 1997). One study identified a unique gender finding; men are more likely to stay when family size increases to supply financial support, while women are more likely to leave to take care of children (Porter & Steers, 1973). Work-family conflict mediates the differences in genders when discussing number of dependents and attrition. Individuals without children reported similar attrition rates between the genders. There is a difference in genders when examining Individuals with dependents; only mothers reported leaving due to work-family conflict (Deutsch & Yao, 2014). This suggests that individuals with children may revert to traditional gender roles to counter the stress of the double burden women face when balancing family and work (Deutsch & Yao, 2014). Tenure, length of service or experience, is negatively associated with attrition, indicating that the longer a person has stayed with an employer, the less likely he/she will quit (Cotton & Tulle, 1986; Mobley et al., 1979; Porter & Steers, 1973). Individuals who have been with an organization for a limited time have a higher likelihood to quit compared to individuals with more years of service. Tenure is documented to be the best predictor of attrition within the general occupational setting, meaning length of service accounts for more variance in attrition when compared to the other demographic variables (Cotton & Tulle, 1986; Mobley et al., 1979; Porter & Steers, 1973). This finding suggests that more years working at the same job predicts lower likelihood of attrition.

### **CHAPTER III**

#### **ATTRITION IN TEACHERS**

Excessive turnover within the teaching profession is creating a critical shortage of teachers in schools (Boe, Cook, & Sunderland, 2008). Approximately 230,000 teachers leave the profession yearly, while approximately the same amount transfer to other school districts (Haynes, 2014; Shen, 1997). These turnover rates are creating high costs for the school community in terms of recruiting, replacing and training new faculty. Turnover (attrition and transfer) within the teaching occupation costs approximately \$7 billion a year in the United States (Amos, 2008; Boe et al., 2008; Shen, 1997). Texas spends approximately \$505 million yearly in turnover, the most in the nation (Haynes, 2014; Shakrani, 2008), half the amount spent can be contributed to attrition (Haynes, 2014). Examining the key variables that contribute to intent to leave the teaching profession can be beneficial to counter the high attrition rates and associated expenses within Texas public schools.

A shortage of teachers is not due to an inadequate supply because many individuals with teaching degrees choose not to teach (Boe et al., 2008). Specifically, teachers with higher academic scores enter the teaching profession far less frequently and quit sooner than any other group (Billingsley, 2004; Shen, 1997). Teachers often cite reasons for quitting to be the working conditions or the desire for something better (Billingsley, 2004; Shen, 1997). Specific conditions that are reported for reasons of teachers' attrition are: no involvement in decision making, no administration support, salary, and high stress levels. Shortages of teachers within the school system are related to conditions that make an individual choose not to teach (Billingsley, 2004; Shakrani, 2008; Shen, 1997). Finding ways to attract quality teachers is one way to counter the

shortage problem but incorporating improvements to the educational environment is the best way to retain teachers (Billingsley, 2004; Boe et al., 2008).

### **Teacher Occupational Factors Associated with Attrition**

The connection a teacher has with the job signifies level of commitment to the organization (Billingsley & Cross, 1992). The more one is invested in his/her job, the more committed one feels, the higher the likelihood to remain in the current position (Billingsley, 2004; Billingsley & Cross, 1992). Hausman and Goldring (2001), found a teacher to be more committed when he/she has authority over decisions within the classroom and in the schools. Feelings of being successful with students' learning and high efficacy are related to higher commitment in teachers and leads to a teacher remaining in their job (Hausman & Goldring, 2001). Opportunities for teachers to learn and grow and cooperative relationships between colleagues are other factors that contribute to more commitment towards the job (Hausman and Goldring, 2001). Conflict and stress within the job reduce commitment, and lower the likelihood for a teacher to remain in his/her job (Billingsley & Cross, 1992). One's level of commitment within the job is associated with performance and attrition. Commitment increases effort towards the job and leads to a lower likelihood for a teacher to leave the profession (Billingsley & Cross, 1992).

An internal sense of control and external support from others have been sources of review in attrition studies. Teachers' satisfaction is based on the appraisal of how much control and support one has within the job (Landy & Conte, 2013; Mondal et al., 2011). The freedom to handle problems within the school and classroom is associated with higher satisfaction in teachers (Pearson & Moomaw, 2005; Shen, 1997). Examples of low control include the following: not having influence over present curriculum,

decision making and/or policies. These factors affect the level of satisfaction in teachers and lead to dissatisfaction (Billingsley & Cross, 1992; Mondal et al., 2011; Pearson & Moomaw, 2005; Shakrani, 2008; Shen, 1997; Yang et al., 2009). Lower satisfaction in teachers is related to higher attrition rates.

Besides control, satisfied teachers see principals and colleagues as sources of support (Billingsley, 2004; Dworkin et al., 1990; Mondal et al., 2011, Pearson & Moomaw, 2005; Shakrani, 2008; Shen, 1997). Acknowledgement and support from the principal and peers leads to greater job satisfaction within teachers and results in higher retention rates (Billingsley, 2004; Pearson & Moomaw, 2005; Shen, 1997). While research in general occupations indicates a negative relationship between supportive colleagues and employee's intention to quit, this relationship has not been substantiated within the teaching profession, such that teachers rarely report unsupportive peers as a reason for wanting to quit (Billingsley, 2004).

Within the teaching profession, job satisfaction is found to be the biggest contributor to attrition, which is contradictory to findings in the general occupational setting where commitment accounts for more variance in attrition. Increasing satisfaction is one of the best ways to reduce attrition in teachers (Billingsley, 2004; Mobley et al., 1979; Shore & Martin 1989). Many studies examine satisfaction and commitment as precursors or outcomes of each other. This study will address satisfaction and commitment as two separate factors to determine their influences on attrition within Texas public schools.

School climate, the character of the environment, is based on treatment from individuals, specifically, students, principals and peers (Billingsley, 2004). In particular,

student interaction can impact the immediate work environment and teachers' attrition in diverse ways. Problems with student's attitude, progress, needs and/or discipline can lead to dissatisfying environments with higher attrition rates (Billingsley, 2004; Mondal et al., 2011; Shakrani, 2008; Trendal, 1989; Yang et al., 2009). Teachers who work with students who have learning disabilities, physical disabilities and/or mental disabilities have lower attrition rates (Billingsley, 2004). Some students require an individual educational plan to facilitate learning, teachers that work with students that need additional assistance are less likely to quit. Emotional problems in students are related to a higher likelihood for teachers to quit (Billingsley, 2004). A principal shapes the culture by establishing what he/she believes as appropriate behavior within the schools (Pearson & Moomaw, 2005). If the principal condones disruptive or abusive behaviors and doesn't provide support, then these actions can lead to a teacher's negative perception of the climate. Lack of collegiality between colleagues leads to dissatisfaction with the environment and is associated with a lower likelihood to remain (Billingsley, 2004; Buchannan, 2012; Hausman & Goldring, 2001). Collaboration within the school community is present when teachers share expertise and create and manage common goals with each other (Hausman & Goldring, 2001). Teachers that perceive the school climate to be collaborative, supportive and positive have a lower likelihood of quitting (Billingsley, 2004; Buchannan, 2012; Hausman & Goldring, 2001). The climate characterizes the teacher's experience within the school, the teacher's perceptions impacts the attrition rates, warranting review in the current study.

## **Teacher Health Factors Associated with Attrition**

Research has shown that certain demographics are associated with differences in stress levels. Teachers between the ages of 25 and 35 or those who have a postgraduate degree report the most stress (Haverman, 2007; Mondal et al., 2011; Trendal, 1989). The literature on experience (tenure) suggests that teachers with 5 to 10 years of service have more stress than any other groups. This finding seems inconsistent because studies have indicated that approximately half of the new teachers quit within five years of service (Boe et al., 2008; Haverman, 2007; Shakrani, 2008; Shen, 1997).

Teaching is a highly stressful occupation and teachers who reported feeling stressed daily or weekly have higher rates of attrition (Billingsley, 2004; Kyriacou, 1987). The location of the school, specifically if the school is located in urban communities, has been shown to correlate with more teacher stress (Haverman, 2007). The type of school the teacher taught in resulted in different amounts of stress, such that teachers from all levels (elementary, middle or high school) indicated more stress (Haverman, 2007; Trendal, 1989). Results regarding type of school and attrition also indicated ambiguous results on which level of school had teachers remain in the profession longer (Billingsley, 2004; Boe et al. 1997; Shen, 1997). In addition, general education teachers were found to have less stress and lower attrition rates when compared to special education teachers (Billingsley, 2004; Shakrani, 2008; Trendal, 1989). Aspects of the school contribute to different levels of stress in teachers.

Additional sources of stress can occur based on the experiences the teacher has within his/her school (Pearson & Moomaw 2005; Yang et al., 2009). Overpopulated classrooms, lack of resources, burdensome workload and infringement of personal time

are typical stated stressors within the teaching profession (Billingsley, 2004; Haverman, 2007; Guglielmi & Tatrow, 1998; Mondal et al., 2011; Trendal, 1989; Yang et al., 2009). Interactions from colleagues, in the form of public criticism or lack of support, is related to higher stress and attrition rates in teachers (Guglielmi & Tatrow, 1998; Mondal et al., 2011; Trendal, 1989; Yang et al., 2009). Teachers' perceived stress is positively related to intention to quit (Billingsley, 2004; Guglielmi & Tatrow, 1998). The more stress one perceives the higher likelihood to quit.

Stress can affect the health of the teacher, and the prevalence of stress-induced illnesses is high within the teaching profession (Dworkin et al., 1990; Yang et al. 2009). Teachers report more physical health issues (hypertension, headaches and cardiovascular disease) and mental health issues (anxiety, depression and somatic disorders) in comparison to other occupations (Dworkin et al., 1990; Yang et al., 2009). Those within the teaching profession also report lower quality of life and shorter life expectancy in comparison to those in other vocations (Shakrani, 2008; Yang et al., 2009). Thus, stress impacts the psychological and physical health of the teacher; indirectly influencing attrition rates.

### **Teacher Demographics Associated with Attrition**

Demographic factors, including age, gender, ethnicity, number of/presence of dependents, tenure and education level, that influence attrition in teachers have been explored in great detail (Billingsley, 2004; Boe et al., 1997; Boe et al., 2008; Shakrani, 2008; Shen, 1997). In attrition research, the teaching profession yields different predictor demographics when compared to other occupations. To begin, age has a U-shape curvilinear effect, such that young and old teachers are more likely to leave compared to

middle aged teachers (30-50) (Billingsley, 2004; Boe et al., 1997; Boe et al., 2008; Shakrani, 2008; Shen, 1997). There is a consensus on age and attrition in teaching, such that age has been shown to be the best demographic predictor of attrition.

Conversely, there are inconsistent findings in regards to gender. Teaching is a female- dominated profession for which the majority of studies on attrition indicate women have a higher likelihood to quit, while others studies found no differences based on gender (Billingsley, 2004; Boe et al., 1997; Shen, 1997). When ethnicity is explored, some studies indicate no differences while others find Caucasians to have higher attrition rates (Billingsley, 2004; Boe et al., 1997; Shen, 1997). Any change in marital status, divorce or marriage, is associated with higher rates of attrition (Boe et al., 1997; Shen, 1997). An individual that has a child while teaching or have dependents under the age of six are more likely to quit his/her jobs (Boe et al., 1997). Although the gender and ethnicity studies are inconclusive, change in family status suggests higher attrition.

High attrition rates occur early in the career of teachers, considering that one-third of teachers leave within 3 years and half of the novice teachers quit the profession within the first 5 years (Billingsley, 2004; Boe et al., 2008; Shakrani, 2008; Shen, 1997). Teachers with more experience or seniority remain in the profession longer than inexperienced teachers (Billingsley, 2004; Boe et al., 1997; Shen, 1997). In contrast, education plays a key factor in the shortage of teachers, such that teachers with higher levels of education, those who were top performers, and those who had better grades and higher test scores were more likely to leave the teaching profession sooner (Billingsley, 2004; Shen, 1997). In fact, those with higher levels of education were less inclined to enter the profession at all (Billingsley, 2004; Shen, 1997).

Teachers can be certified in two ways: traditional (4 year Bachelor's education degree) or alternative (post baccalaureate). The former route is most common in Texas, with the traditional degree focusing on education and including a semester of student teaching (Combs, 2006). Alternative certification provides diverse experiences to the teaching profession by allowing individuals with college degrees to obtain a teaching certification without the traditional coursework in education. Teachers with alternative certifications can experience challenges, prejudices, lack of support, and lack of respect from colleagues for not being certified the traditional way (Combs, 2006). To date, no research has shown a relationship between the method of certification and attrition (Boe et al., 1997; Saylor, 2003). More research on certification method is warranted.

Additional studies yield varying results when discussing school demographics and class subjects in relationship to attrition. Schools in impoverished or poor communities have higher attrition rates (Shakrani, 2008; Shen, 1997). Urban areas have teachers that leave the profession sooner in comparison to non-urban areas, which contributes to urban schools spending approximately \$40,000 more a year on turnover (Amos, 2008; Boe et al. 1997; Dworkin et al., 1990; Shakrani, 2008; Shen, 1997). Different academic subjects yield differences in attrition rates. Math and Science teachers are more likely to leave the profession sooner compared to other core classes or elective classes (Billingsley, 2004; Shakrani, 2008; Shen, 1997).

In conclusion, many studies have singled out demographic, occupational and health factors related to attrition in general vocations. A few studies have assessed attrition in a teacher population, but the scope of those studies was limited. The proposed

study is a comprehensive occupational health analysis to determine the key factors most associated with attrition in a teacher population.

## **CHAPTER IV**

### **PURPOSE OF THESIS**

Utilizing data from an online comprehensive occupational health survey, this study aims to systematically evaluate the factors most strongly associated with attrition for public school teachers. The following factors will be considered for association with intent to leave the teaching profession: basic demographics, teacher-demographics, occupational and health variables. This study will examine variables that have limited supporting research to expand the literature on attrition of teachers in public school systems.

### **Hypotheses**

Occupational indicators hypothesized to be associated with intent to leave include the following:

1. Low Organizational Commitment
2. Low Job Involvement
3. Low Job Support
4. Low Job Control
5. Poor School Climate
6. More School Problems

Health indicators hypothesized to be associated with intent to leave include the following:

7. High Perceived Stress
8. Poor Mental Quality of Life
9. Poor Physical Quality of Life
10. Presence of Axis I Psychopathology (Depression, Anxiety, Panic,

Somatization)

Demographic indicators hypothesized to be associated with intent to leave include the following:

11. Female Gender
12. Younger Age
13. Fewer Years Teaching
14. Alternative Certification
15. More Hours Required Daily
16. Core Courses Taught
17. More Students in Individual Education Plans (IEP)
18. Urban Area Location
19. High School Level
20. Lower School Accountability Rating
21. Teachers' Perceived to be Punished for School Accountability Rating

## CHAPTER V

### RESEARCH DESIGN AND METHOD

#### **Design**

Teachers from 46 randomly chosen districts in Texas were asked to voluntarily participate in an online comprehensive occupational health study. Email addresses for current K-12 public school teachers were obtained through the Public Information Act and through the various school districts' administrative offices and websites. A one-time email was sent containing a link to the survey asking for voluntary participation; 3,361 teachers agreed to participate. This study was approved by the Texas State University Institutional Review Board.

#### **Participants**

The present study used a subset of the data collected from the comprehensive occupational health teacher study. Only teachers who responded to the "how likely he/she were to leave the teaching profession after the school year" question were included in this study (n = 2588). To control for teachers leaving due to retirement, individuals that report retiring to the question "If you are likely to leave the teaching profession, what would your next career be", were removed (n=37). A sliding scale (0-10) was used to assess the "how likely he/she were to leave the teaching profession after the school year" question (See Appendix A). The "intent to leave profession" variable distribution is U-shaped and only teachers who indicated "0 = Not Likely" or "10 = "100% Likely" were included in the analyses. Those who reported 0, not likely to leave, were identified as the no intent group, the remain group (n=949). The participants with scores of 10, who were 100% likely to leave were included in the intent group, the

attrition group (n=198). The variables examined in the study were used to predict membership into either the intent to leave the profession group or no intent to leave the profession group.

## **Measurements**

### **Occupational Factors**

Occupational variables were examined to see how well they predicted intention to leave the teaching profession. A proportion of the scales used in this current study were extracted from the 2007-2008 Schools and Staffing Survey (SASS) conducted by the U.S. Department of National Center for Education Statistics (2010). This established survey covers an array of topics: characteristics of the teacher, students and administrations, the conditions and context within the school and any problems within the school (student, administration, or school related).

### **Organizational Commitment and Job Involvement**

The commitment an individual has towards his/her school and job was analyzed. The organizational commitment survey has seven questions that address general commitment to the school, refer to Appendix B (U.S. Department of National Center for Education Statistics, 2010). “The stress and disappointments involved in teaching at this school aren’t really worth it” and “I don’t seem to have as much enthusiasm now as I did when I began teaching” are questions from the organizational commitment survey that ask for the degree to which one agrees with the statement. Lodahl and Kejnar (1965) designed a 20-item Job Involvement scale, which measures how a person connects to the job and the relationship the job has with an individual’s total self-image (see Appendix C). The questions on the scale ask how strongly one agrees with certain statements. For

example, “I’ll stay over time to finish a job, even if I’m not paid for it” and “I live, eat and breathe my job.” The internal reliability of the scale is .79 (Ramsey, Laask & Marshall, 1995).

### **Job Satisfaction (Support and Control)**

The scales for support, control and climate were all extracted from the 2007-2008 Schools and Staffing Survey (SASS) (U.S. Department of National Center for Education Statistics, 2010). The support variable was comprised of ten items that asked teachers to rate satisfaction with support from a variety of sources (parents, grade-level teachers, community, district administration, etc.) within the teaching environment (See Appendix D). Conditions of control were assessed by six questions that asked teachers to rate how much control they have over certain aspects within the classroom. “Selecting textbooks and other instructional material,” “selecting teaching techniques,” and “disciplining students” are examples of questions from the scale (refer to Appendix E). The composite scores for support and control are used to determine job satisfaction, and to predict attrition rates.

### **School Climate and School Problems**

Climate is another factor that was assessed. “Necessary materials such as textbooks, supplies, and copy machines are available as needed by the staff” and “Most of my colleagues share my beliefs and values about what the central mission of the school should be” are examples of the 17 questions that comprised the scale for climate (see Appendix F). Problems teachers perceive were also assessed. A composite score was made from 10 questions that ask teachers to rate the strength of problems within the school, such as student absenteeism, students dropping out and lack of parent

involvement (See Appendix G). Problems within the school and perception of the environment constituted the overall character of the climate.

## **Health Factors**

### **Perceived Stress**

The health variables examined included stress, quality of life, and psychological and physical health factors. Stress was assessed by the Perceived Stress Scale (PSS), a well-established measure that addresses which life situations are appraised as stressful (Cohen & Williamson, 1988). The PSS-10 is comprised of 10 questions that asks how often one has felt stressed in the last month. Examples of these questions are “been able to control irritations in your life” and “found that you could not cope with all the things that you had to do” (see Appendix H). Cronbach’s alpha for reliability of this established scale is between .84 and .86 (Cohen, Kamarck, & Mermelstein, 1983).

### **Mental and Physical Quality of Life**

The well-being of the individual was explored by analyzing health-related quality of life, both mental and physical, which was measured by the Short- Form 36 Health Inventory (SF-36) (refer to Appendix J). Individuals were asked to “indicate if your current health limits you in the following activities that might occur during a typical day”. Examples of activities are “vigorous activities, such as running, lifting heavy objects, participating in strenuous sports”, “moderate activities such as moving a table, pushing a vacuum cleaner, bowling, or playing golf” and “climbing several flight of stairs” are examples of questions that depict the physical quality of life of an individual. The mental quality of life questions asked individuals to “indicate how often during the past 4 weeks have you experience or felt these items”; examples of items are “have you felt calm and peaceful” and “have you felt downhearted and blue”. Composite scores

were produced for both scales of quality of life; the reliability ranges between .77 and .94 (Ware, Gandek & the IQOLA Group; 1994).

### **Psychopathology and Physical Health**

The Patient Health Questionnaire (PHQ) is a validated instrument used for measurement of the psychological health and physical health of an individual in primary care settings. The PHQ addresses Axis I psychopathology by determining if an individual meets the criteria for mental disorders, specifically depression, anxiety, somatization, and panic disorders (See Appendixes K, L, M, & N). The internal consistency of these scales is between .86 and .89 (Spitzer, Kroenke, Williams & the Patient Health Questionnaire Primary Care Study Group, 1999). The General Health History questionnaire was used to assess the current physical health of the teacher (refer to Appendix P). This 60-item checklist of current health conditions was created and used by hospitals (Spitzer et al., 1999).

### **Demographic Factors**

The study evaluated the basics demographics of the teacher, his/her classroom experience and the basic demographics of the school in which the teacher worked within the Texas' public school system. Age, gender and years of teaching were the basic demographics examined. The method of certification (traditional or alternative) was also assessed. Classroom experience included the type of classes taught (core or elective) and the number of students with an individual education plan (IEP). The teacher's daily schedule was examined by combining the number of hours in the following questions: "how many hours are required to be at school each day," "beyond school each day," and "how many hours spent at home grading papers or planning curriculum."

The location of the school, the type of school and basic information of the school's accountability ratings, were the school's basic demographics variables assessed. The school's location was examined by assessing the "area of school" (rural, suburban, urban) and the "type of school" (elementary, middle, and high). Texas schools' accountability ratings are based on the students' test scores on state-mandated testing. The accountability ratings are: Exemplary, Recognized, Acceptable, and Unacceptable. Teachers' attitudes toward the mandatory state testing were also assessed. To examine if teachers are punished for accountability ratings, a yes or no question was asked: "if teachers were penalized for poor student performance on state wide assessments."

### **Statistical Analysis**

Univariate statistics were conducted comparing those who did not intend to leave the profession (0%) to those who fully intended to leave profession (100%), controlling for retirement. Independent t-tests were used for comparisons of variables measured on a continuous scale and chi-square tests of independence were used to assess categorical variables. A simultaneous multivariate binary logistic regression was then used to identify the key variables most associated with the intent to leave the profession within the Texas public school system. Variables significant at the univariate level were included in the final regression model. Effect size measures included Cohen's *d* and odds ratios. The alpha level was set at  $p = .05$ .

## CHAPTER VI

### RESULTS

All data were prescreened for outliers and missing data prior to analyses. Table 1 shows the reasons for attrition; which were determined by the free response question: “if you are likely to leave the teaching profession, what would your next career be?” All responses were coded and grouped into the following categories: retirement, quit for another career, quit for another job in academics, quit for anything else that isn’t teaching or quit but not sure or undecided on what the next career would be. All individuals who reported retirement as next career were removed from subsequent analyses.

The univariate analyses were conducted to determine if the differences between individuals stating no intent to leave the profession (Remain group) and those stating they are 100% likely to leave the profession (Attrition group). The results of the analyses of occupational indicators are displayed in Table 2. All occupational factors were significant at the univariate level. The teachers in the Remain group reported significantly better scores in organizational commitment, job involvement, job support, job control all occupational factors when compared to the individuals in the Attrition group (all  $p < .001$ ). More school problems were related to higher likelihood to quit ( $p < .001$ ). Hypothesis one proposed that poorer organizational commitment would be related to attrition was supported. Hypothesis two predicting less job involvement would be related to desire to quit was supported. Hypothesis three indicated that less support in the job would be connected to attrition and was also retained. Poorer job control in relation to attrition was significant, providing support for hypothesis five. Lastly, hypothesis six that more school problems would be associated with higher likelihood to quit was also

supported. Large effect sizes were identified for organizational commitment (Cohen's  $d = 1.81$ ), job involvement (Cohen's  $d = .85$ ), job support (Cohen's  $d = .94$ ), job control (Cohen's  $d = .75$ ), and school climate (Cohen's  $d = 1.17$ ), indicating a large difference between the Attrition group means to the Remain group means. For the variable school problems, a small effect size was found (Cohen's  $d = .38$ ). These results show that occupational factors were associated with attrition within this teacher sample, which led to retaining hypotheses one through six.

The health indicators examined for association with intent to quit the profession are displayed in Table 3. Individuals in the Attrition group reported significantly higher levels of stress compared to individuals with no intention to leave the teaching profession ( $p < .001$ ). The hypothesis 7 that higher perceived stress would be related to attrition was supported. Significantly higher mental quality of life scores were reported for the Remain group ( $p < .001$ ). Hypothesis 8 was retained- poorer mental quality of life was related to attrition. The effect sizes for the differences in means for both perceived stress and mental quality of life were large ( $d = .94$  and  $d = .92$ , respectively). Physical quality of life, however, was not significantly associated with intent to quit ( $p > .05$ ), which lead to rejecting the hypothesis that poorer mental quality of life would be associated with attrition. All comparisons of Axis I psychological disorders were significant, such that individuals who met the criteria for depression, anxiety, panic or somatization disorders were significantly more likely to belong to the Attrition group (all  $ps < .001$ ). Teachers with depression were 4.63 times more likely to quit compared to individuals that do not suffer from depression. The odds ratio for teachers with anxiety (3.22), panic (2.51) and somatization (3.49) indicate that individuals that suffer from these disorders are more

likely to be part of the Attrition group when compared to teachers without any Axis I psychological disorder. All the hypotheses related to Axis I psychological disorders were supported. Depression, anxiety, panic and somatization disorder were related to intention to leave the profession. Results of the health indicators analyses supported retaining hypotheses 7, 8 and 10, but hypothesis 9 was rejected. The univariate tests supported including perceived stress, mental quality of life and Axis I psychological disorders in the multivariate analyses; while physical quality of life was not supported, therefore not included in the final regression equation.

Results of the univariate comparisons of the demographic factors are displayed in Table 4. Non-significant findings were noted for the following variables: total hours required daily, whether teach core or elective classes, and the number of students with individual education plans (IEP) (all  $p$ s > .05). Hypothesizing that more hours of work required daily would be related to attrition was not supported (Hypothesis 15). Hypothesis 16 was also not retained. Teaching core classes was not related to attrition. The prediction that teaching more students in IEP plans would be associated with attrition was not supported. The question assessing IEPs identified three IEP categories: learning disabilities, discipline, and other. Differences in IEPs for discipline was a trend approaching significance ( $p = .07$ ), such that teachers in the Attrition group had greater number of students with IEPs for discipline. The comparisons for IEPs for learning disabilities and other disabilities were not significant at the univariate level. Hypotheses 15, 16, and 17 were not supported.

The other demographic variables analyzed were significant at the univariate level (see Table 4). Male gender, younger age, years of teaching and certificate method, were

significantly associated with intent to quit the profession. Males were 1.5 times more likely to quit compared to females ( $p < .05$ ). The hypothesis that female gender would be associated with attrition was not supported. Teachers who were younger in age were significantly more likely to quit ( $p < .05$ ), supporting the hypothesis that younger age would be related to attrition. Total years teaching was evaluated and teachers with more years of service were more likely to remain in teaching instead of quitting the occupation completely. The predicting that fewer years teaching would be related to intention to quit was supported, retaining hypothesis 13. The relationship with older age and more years of service to attrition could be related to individuals waiting to retire rather than changing career paths. Age (Cohen's  $d = 2.16$ ) and years of teaching (Cohen's  $d = .22$ ), both have small effect sizes. In examining whether the type of teaching certification affected intent to quit, teachers with an alternative certificate were 2.12 times more likely to have early attrition compared to teachers who were certified traditionally ( $p < .05$ ). The hypothesis that people with alternative certification would be more likely to quit was supported. Hypothesis 11 was not supported, but hypotheses 12 through 14 were retained. Significant univariate results of the demographic indicators suggests teachers' basic demographics (male gender, younger age, fewer years teaching and alternative certificate) were associated with intention to quit the profession.

All the hypotheses based on school's demographics were supported, except for school level (elementary, middle or high school) (refer to Table 4). School level was not significant, which led to rejecting the hypothesis that teaching at the high school level would be associated with attrition. Analysis of area location indicated that teachers in rural and urban areas were more likely to quit, while teachers from suburban areas were

predominate in the Remain group ( $p < .05$ ). The hypothesis that teachers in urban area would be more likely to quit was supported, but according to the contingency coefficient less than one percent (.62%) of the variance between Attrition and Remain group was attributed to school's area location (Hypothesis 18). When school accountability was assessed, teachers in low performing schools had higher intentions to quit. Schools with acceptable ratings had approximately the same number of individuals in both groups. Teachers in schools with exemplary and recognized accountability were more likely to remain ( $p < .05$ ), suggesting that schools that perform better or have higher ratings, have teachers who are more likely to stay. Effect size indicated that school accountability rating contributed 1.32% of the variance between attrition groups. The prediction that lower school accountability would be associated with attrition was supported and hypothesis 20 was retained. Teachers who perceived that they would be punished for poor school accountability ratings were 2.12 times more likely to be part of the attrition group when compared to teachers who did not perceive punishment ( $p < .001$ ). The hypothesis that teachers would be punished for poor school accountability ratings was supported. Hypotheses 18, 20, and 21 were supported at the univariate level, while hypothesis 17 was not supported.

Variables significant at the univariate level were considered for the final regression model. Due to multicollinearity issues, some variables were excluded. The Axis I psychological disorders were inter-correlated, therefore, only depression and somatization disorder were included, while panic disorder and anxiety disorder were removed from the final regression model. Age and years of teaching were strongly correlated ( $r(3193) = .726, p < .001$ ), therefore, years of teaching was not included in the

multivariate analysis. To focus on what happens within the school and not on location, school area type (rural, suburban and urban) was also excluded from the final regression. The rest of the significant factors at the univariate level were used to determine which key variables contributed the most to the intent to quit the teaching profession.

A simultaneous multivariate binary logistic regression was conducted to determine which independent variables (organization commitment, job involvement, job support, job control, school climate, school problems, perceived stress scale, mental quality of life, major depression, somatization disorder, age, gender, certificate method, school accountability rating and perception of punishment for school rating) were significantly associated with attrition. Attrition was distinguished into two categories, intent to quit (attrition) or no intent to quit (remain). Regression results indicated an overall model of 4 significant predictors organization commitment, job control, major depression and female gender, predict membership into the attrition group [-2 Log Likelihood =258.982,  $X^2(17) = 198.972, p < .05$ ]. These significant variables correctly classified 88.3% of the cases. The final regression model (N=567) is presented in Table 5.

Half of the significant predictors of teacher's attrition were occupational factors: organizational commitment and job control. The regression results indicated a negative relationship between these occupational variables and attrition, suggesting that lower levels of the occupational factors are more associated with attrition (refer to Table 5). The odds ratios were used to predict the probability of membership into the attrition group. The odds ratio from table 5 indicated when organization commitment (1-.722/27.8%), and job control (1-.861/13.9%) increase by one unit, the likelihood to be part of the intent

to quit group would reduce by the respective ratios. For example, for every one unit increase in organization commitment there is a 28.7% decreased odds of being part of the attrition group. When job control increases by one unit, the likelihood of exiting the career is reduced by 13.9%. Job involvement was approaching significance ( $p < .055$ ), with a likelihood of quitting reduced by 4.6% for each unit increase in job involvement ( $1 - .954/4.6\%$ ). Major depression is another significant indicator of attrition within this teacher sample. In examining the odds ratio, individuals with major depression were 2.76 times more likely to quit. Gender was also significant at the multivariate level ( $p < .05$ ). Men were 3.6 times more likely to be part of the Attrition group. Due to the amount of variables included in the final regression model the sample size was reduced to  $N = 567$ .

## CHAPTER VII

### DISCUSSION

The goal of this study was to understand which factors contribute to early attrition of teachers, specifically, which occupational, health, and demographic variables are significantly associated with attrition in a sample of Texas public school teachers. The main findings suggested that four key indicators, organization commitment, job control, depression and male gender, predicted attrition in this sample

Even though only four factors were significant in the multivariate analysis, the significant results at the univariate level are also important. The relationship between occupational factors and attrition has been explored in great detail (Billingsley, 2004; Billingsley & Cross, 1992; Dworkin et al., 1990; Hausman & Goldring, 2001; Mondal et al., 2011, Pearson & Moomaw, 2005; Shakrani, 2008; Shen, 1997). Organization commitment and job satisfaction (control and support) are documented as key factors in attrition throughout the literature. According to Billingsley (2004) and Billings and Cross (1992), teachers with higher commitment are more likely to remain in the profession. This current study supports the prior findings with organization commitment being a key predictor of teacher's attrition. Both job control and job support were significant at the univariate level, confirming results of past research stating low levels of both job control and job support contribute to attrition in teachers (Billingsley, 2004; Pearson & Moomaw, 2005; Shen, 1997). According to Mondal et al. (2011), the less control over the classroom, students, decisions, curriculum, and policies the teacher has, the higher his or her intentions to quit teaching. The current study supports these prior findings, in that job control was significant at the univariate and multivariate levels. Increasing's teacher job

commitment and control to his/her job was related to reduction of intention to leave the profession in this study. Past research indicated that job satisfaction is the biggest contributor toward attrition in teachers when comparing organization factors (Billingsley, 2004; Mobley et al., 1979; Shore & Martin 1989). Based on the multivariate model, higher organization commitment decreased the odds of being part of the attrition group by 27.8%, whereas greater job control decreased the odds by 13.9%. The current study suggests organization commitment predicts attrition more when compared to the other organizational factors simultaneously, not confirming past research in attrition of teachers.

According to Billingsley (2004) and Porter and Steers (1973), the more involved one is with his/her job the less likely one is to leave the occupation. Job involvement, assessed in the multivariate model, was marginally significant at predicting job attrition ( $p = .055$ ). The odds ratio suggests improvement in job involvement only slightly reduced the odds (4.6%) of being in the attrition group. The significant results of all the occupational factors at the univariate level confirm past research, while the multivariate results contribute a new understanding of the relationship between the occupational predictors of attrition.

While many of the health factors significantly differentiated the Remain and Attrition groups at the univariate level, once entered into a multivariate model, many of the health indicators were not key predictors of attrition within this sample. Neither perceived stress nor mental quality life were significant in the multivariate model. The results are surprising based on the evidence that teaching is highly stressful and many stress-induced physical and mental disorders are common in the teaching profession

(Billingsley, 2004; Dworkin et al., 1990; Yang et al., 2009). Also, teachers report lower quality of life when compared to other occupations (social services, medicine, mental health and law enforcement) (Maslach, Schaufeli & Leiter, 2001; Shakrani, 2008; Yang et al., 2009). The univariate results suggest that higher levels of perceived stress and lowers scores on quality of life are associated with intention to quit. Suggesting more stress and lower perception of quality life predicts higher intention of attrition, confirming past research (Dworkin et al., 1990; Shakrani, 2008; Yang et al., 2009).

Multicollinearity between stress and other variables (occupation and quality of life) could have contributed to stress not being significant at the multivariate level. According to Landy and Conte (2013) and Dworkin et al. (1990), stressors can reduce satisfaction and commitment, suggesting stress indirectly relates to attrition. Stress can also affect the mental and physical quality life of a teacher (Shakrani, 2008; Yang et al., 2009). To examine multicollinearity, correlations were conducted between stress and the continuous occupational (occupational commitment, Job involvement, job support, job control, school climate, and school problems) and health factors (mental and physical quality of life) was created and displayed in Table 6. All correlations were significant at  $p < .001$ .

Organization commitment [ $r(2626) = -.53, p < .001$ ] and mental quality [ $r(2439) = -.75, p < .001$ ] life were strongly correlated with perceived stress. Following was Job support [ $r(2054) = -.39, p < .001$ ] and school climate [ $r(2584) = -.45, p < .001$ ] which were moderately negatively associated with stress. Job involvement [ $r(2539) = -.08, p < .001$ ], school problems [ $r(2584) = .19, p < .001$ ] and physically quality of life [ $r(2439) = -.14, p < .001$ ] were weakly associated with perceived stress. The significant correlations between variables indicated that stress impacts and affects an assortment of occupational

and health factors related to the teaching profession. Multicollinearity could explain why stress was not significant at the multivariate level. Further research needs to explore the relationship between stress, teaching and attrition, with variables that have limited multicollinearity. One way to counter to multicollinearity would be to evaluate how occupational, health and demographics factors relate to perceived stress and then evaluate how stress is related to attrition.

Depression was the only health indicator that was significantly associated with attrition at the multivariate level. Depression has been reported in teaching more often than in other occupations (Dworkin et al., 1990; Yang et al., 2009). Results of this study suggested that an individuals that suffer from depression are 2.78 times more likely to quit his/her career in the next year. Teachers may believe the job contributes to the presence of depressive symptoms and quitting may be perceived as a way to reduce the symptoms. Limited past research has been conducted on mental illness and attrition. More research is needed to examine the presence of Axis I mental disorders and other health issues in connection with early attrition rates in teachers.

Prior findings on teacher attrition suggests that a variety of teacher and school demographic factors contribute to early attrition (Billingsley, 2004; Boe et al., 1997; Boe et al., 2008; Shakrani, 2008; Shen, 1997). It was predicted that female gender would be a significant indicator of attrition, due to the large proportion of a females within the teaching profession. This study did not support past findings. Individuals that suffer from depression are 2.78 times more likely to quit his/her career in the next year. Younger age was only significant at the univariate level. Past research comprehensively shows age as a

key contributor to early attrition, yet this current study did not confirm this at the multivariate level.

The other univariate demographic variables were not significant at the multivariate level, but the significant results at the univariate level warrant further research. Standardized State testing and its impact on teachers, students and the school should not only be further explored in relation to attrition, but also compared to other occupational and health factors of the teacher. This study does explore standardized testing, but a more detailed analysis of the impact of standardized testing would be beneficial. Specifically, more information about how standardized testing detracts from regular curriculum teaching, and how teachers and schools are impacted by the ratings should be explored in more detail. Also, the differences between alternative certification and traditional certification should be examined further in relation to attrition. According to Boe et al. (1997) and Sayler (2003), alternative certified teachers typically have more experiences outside the field of education, providing more employment opportunities. This could account for higher attrition rates in this study. The univariate results of this study indicated alternative certificate teachers were 2.12 times more likely to have early attrition compared to teachers who were traditionally certified ( $p < .05$ ). No significant relationship between method of certification and attrition has been found in prior research (Boe et al., 1997; Sayler, 2003). Future research should examine in more detail how the different certification processes affect attrition outcomes.

Although this study indicated key predictors of attrition within the teaching profession, there were limitations. First, the study was based on teachers who volunteered to complete the survey, which may lead to volunteer bias. Because only teachers within

the state of Texas were asked to participate in the study, other locations or regions may contribute different predictors of attrition. The demographics of the teachers within the sample, being primarily female and Caucasian, could limit generalizability to the larger population. A frequency distribution of gender and ethnicity is displayed in Table 7. Further research should examine more diverse populations in a variety of settings within the teaching profession.

Further, the current study used a subset of data collected from the comprehensive occupational health teacher study. The time it took to complete the comprehensive study is another limitation. This was countered by allowing teachers to finish at their own pace and to return to the survey many times before submitting. There is the possibility that the accuracy of results could be skewed based on boredom or fatigue. The study used self-report measures which may lead to response biases from the teachers. The teachers may not have answered all the questions truthfully based on social desirability and demand characteristics, suggesting some teachers may have responded based on what they think is wanted or socially acceptable. These types of distortions of answers can threaten the validity of the study.

Another limitation of this study is how the variables were measured, which also affects the validity of the study. Attrition was measured by one question that asked the intent to quit after one year; with no supporting evidence to suggest that intent to quit actually led to attrition. All of the health and psychological factors were self-reported; no official medical records were used. The majority of the scales used in this current study were extracted from the 2007-2008 Schools and Staffing Survey (SASS) conducted by the U.S. Department of National Center for Education Statistics (2010), for which there is

limited data on the psychometric properties. These types of test bias can reduce the reliability of measurement procedures.

A better understanding of what key factors contribute to attrition could be used to reduce the high rates of attrition and counter the shortage of teachers. The desire for better working conditions is consistently stated as the main reason for quitting the teaching profession (Billingsley, 2004; Shen, 1997). This study suggests improving occupational factors within the school would be the best way to counter early attrition in teachers. Improving the working conditions that lead to teachers wanting to quit the profession could ultimately reduce the high attrition rates and could also attract individuals into the profession.

TABLE 1

*Next Career Responses*

<b>List of Responses for Next Career After Quit the Teaching Profession</b>		
<b>Variables</b>	<b>Frequency</b>	<b>Percent</b>
<b>Retire</b>	37	5.1
<b>Quit</b> For another career	94	40.2
<b>Quit</b> Back to original career	11	4.6
<b>Quit</b> For another job in academics	23	9.8
<b>Quit</b> For anything that is not teaching	20	8.3
<b>Quit:</b> Don't Know Unsure/ undecided/	24	10.1

TABLE 2

*Univariate Analysis of Occupational Indicators*

<b>Univariate Analysis Evaluating Occupational Indicators Most Associated with Intent to Quit the Teaching Profession</b>				
Variables	<b>Remain</b> (0% Not Likely to Quit N = 949)	<b>Attrition</b> (100% Likely to Quit) N = 198	Statistical Comparison <i>p</i> value	Cohen's <i>d</i> , Odds Ratio, or Contingency coefficient <i>r</i>
<b>Organizational Commitment:</b> Mean (St. Dev)	19.71 (4.8)	11.8 (3.9)	<i>p</i> <.001	<i>d</i> = 1.809
<b>Job Involvement:</b> Mean (St. Dev)	55.10 (7.1)	48.33 (8.8)	<i>p</i> <.001	<i>d</i> =.8467
<b>Job Support:</b> Mean (St. Dev)	63.00 (20.3)	44.96 (17.9)	<i>p</i> <.001	<i>d</i> =.9426
<b>Job Control:</b> Mean (St. Dev)	18.14 (3.8)	15.07 (4.4)	<i>p</i> <.001	<i>d</i> =.7468
<b>School Climate:</b> Mean (St. Dev)	45.41 (8.1)	36.34 (7.4)	<i>p</i> <.001	<i>d</i> =1.169
<b>School Problems:</b> Mean (St. Dev)	24.23 (6.2)	26.69 (6.8)	<i>p</i> <.001	<i>d</i> =.3781

TABLE 3

*Univariate Analysis of Health Indicators*

<b>Univariate Analysis Evaluating Health Indicators Most Associated with Intent to Quit the Teaching Profession</b>				
Variables	<b>Remain</b> (0% Not Likely to Quit) N = 949	<b>Attrition</b> (100% Likely to Quit) N = 198	Statistical Comparison <i>p</i> value	Cohen's <i>d</i> , Odds Ratio, or Contingency coefficient <i>r</i>
<b>Perceived Stress:</b> Mean (St. Dev)	16.20 (7.0)	23.13 (7.8)	<i>p</i> <.001	<i>d</i> =.9351
<b>SF-36 Mental Quality of Life:</b> Mean (St. Dev)	46.01 (11.8)	34.00 (14.2)	<i>p</i> <.001	<i>d</i> =.9199
SF-36 Physical Quality of Life Mean (St. Dev)	50.38 (9.4)	49.73 (10.1)	<i>NS</i>	
<b>Major Depression:</b> % Yes No	10.2% 89.8%	47.7% 52.3%	<i>p</i> <.001	8.053 [5.549, 11.687]
<b>Anxiety Disorder:</b> % Yes No	11.5% 88.5%	38.0% 62.0%	<i>p</i> <.001	3.215 [2.482, 4.164]
<b>Panic Disorder:</b> % Yes No	6.0% 94.0%	17.9% 82.1%	<i>p</i> <.001	2.509 [1.831, 3.439]
<b>Somatization:</b> % Yes No	24.9% 75.1%	60.9% 39.1%	<i>p</i> <.001	3.493 [2.642, 4.617]

TABLE 4

*Univariate Analysis of Demographic Indicators*

<b>Univariate Analysis Evaluating Demographic Indicators Most Associated with Intent to Quit the Teaching Profession</b>				
Variables	<b>Remain</b> (0% Not Likely to Quit) N = 949	<b>Attrition</b> (100% Likely to Quit) N = 198	Statistical Comparison <i>p</i> value	Cohen's <i>d</i> , Odds Ratio, or Contingency Coefficient <i>r</i>
<b>Gender:</b> %				
Male	15.9%	23.9%	<i>p</i> < .05	1.499 [1.122, 2.002]
Female	84.1%	76.1%		
<b>Age:</b> Mean (St. Dev)	46.29 (11.1)	43.82 (11.8)	<i>p</i> < .05	<i>d</i> = .2156
<b>Years Teaching:</b> Mean (St. Dev)	15.30 (9.9)	13.22 (9.3)	<i>p</i> < .05	<i>d</i> = .2166
<b>Certificate:</b> %				
Alternative	25.2%	46.1%	<i>p</i> < .001	2.117 [1.646, 2.723]
Traditional	74.8%	53.9%		
Hours/Day Work Mean (St. Dev)	12.00 (3.8)	12.92 (6.0)	<i>NS</i>	
Core Classes: %				
No	46.8%	40.9%	<i>NS</i>	
Yes	53.2%	59.1%		
IEP Learning: Mean (St. Dev)	9.09 (11.9)	10.41 (12.6)	<i>NS</i>	
IEP Discipline: Mean (St. Dev)	2.9 (6.4)	3.88 (8.5)	<i>NS</i> <i>p</i> = .07	
IEP Other issues: Mean (St. Dev)	2.23 (5.4)	2.15 (4.5)	<i>NS</i>	
<b>Area Location:</b> %				
Rural Area	11.3%	11.6%	<i>p</i> < .05	<i>r</i> = .079 .62%
Sub-Urban Area	34.9%	25.3%		
Urban Area	53.8%	63.1%		
School Level: %				
Elementary	46.3%	47.9%	<i>NS</i>	
Middle School	18.8%	23.4%		
High School	35.0%	28.7%		

TABLE 4-Continued

*Univariate Analysis of Demographic Indicators*

<b>Univariate Analysis Evaluating Demographic Indicators Most Associated with Intent to Quit the Teaching Profession</b>				
Variables	<b>Remain</b> (0% Not Likely to Quit) N = 949	<b>Attrition</b> (100% Likely to Quit) N = 198	Statistical Comparison <i>p</i> value	Cohen's <i>d</i> , Odds Ratio, or Contingency Coefficient <i>r</i>
<b>Accountability Rating: %</b>				
Exemplary	19.1%	15.0%	<i>p</i> < .05	<i>r</i> = .115 1.32%
Recognized	34.6%	28.1%		
Acceptable	33.9%	34.4%		
Low Performing	12.4%	22.5%		
<b>Teachers Punished:</b>				
%           Yes	37.1%	59.4%	<i>p</i> < .001	2.119 [1609, 2.789]
No	62.9%	40.6%		

TABLE 5

*Multivariate Analysis of Occupational, Health and Demographic Indicators*

<b>Multivariate Analysis Evaluating Occupational, Health and Demographic Indicators Most Associated with Intent to Quit the Teaching Profession</b>				
N =567	B	Wald X <sup>2</sup>	p-value	Odds Ratio/ 95% CI
<u>Occupational Factors</u>				
<b>Organization Commitment</b>	<b>-.325</b>	<b>31.894</b>	<b>.000</b>	<b>.722 [.645, .809]</b>
Job Involvement	-.047	3.682	.055	.954 [.909, 1.001]
Job Support	-.002	.016	.898	.998 [.974, 1.024]
<b>Job Control</b>	<b>-.149</b>	<b>10.735</b>	<b>.001</b>	<b>.861 [.788, .942]</b>
School Climate	.052	2.002	.157	1.053 [.980, 1.131]
School Problems	-.012	.140	.709	.988 [.929, 1.052]
<u>Health Factors</u>				
Perceived Stress Score	-.012	.102	.750	.989 [.921, 1.061]
SF-36 Mental Composite	-.011	0.327	.568	.989 [.953, 1.027]
<b>Major Depression Disorder</b>	<b>1.014</b>	<b>5.312</b>	<b>.021</b>	<b>2.758 [1.164, 6.535]</b>
Somatization Disorder	.461	1.530	.216	1.585 [.764, 3.290]
<u>Demographic Factors</u>				
<b>Female Gender</b>	<b>1.282</b>	<b>9.180</b>	<b>.002</b>	<b>3.604 [1.573, 8.259]</b>
Age	-.001	.003	.957	.999 [.968, 1.031]
Alternative Method	.267	0.564	.453	1.306 [.650, 2.624]
<u>School Accountability Rating</u> (Ref: Low Performing)		.884	.829	
Exemplary	-.506	.563	.453	.603 [.161, 2.260]
Recognize	-.268	.276	.600	.765 [.281, 2.079]
Acceptable	-.431	.749	.387	.650 [.245, 1.725]
Teacher Penalized	.263	.567	.452	1.300 [.656, 2.576]
Constant	6.501	7.175	.007	665.730

TABLE 6

*Multivariate Analysis of Evaluating Occupational and Health Indicators Correlated with  
the Perceived Stress Scale*

<b>Analyses Evaluating Occupational and Health Indicators Correlated with the Perceived Stress Scale</b>					
	Pearson Correlation <i>r</i>	<i>N</i>	<i>df</i>	p-value	Effect Size <i>r</i> <sup>2</sup> (%)
<u>Occupational Factors</u>					
Organization	-.527	2628	2626	<b><i>p</i> &lt; .001</b>	27.8%
Commitment	-.077	2541	2539	<b><i>p</i> &lt; .001</b>	.59%
Job Involvement	-.385	2056	2054	<b><i>p</i> &lt; .001</b>	14.8%
Job Support	-.264	2635	2633	<b><i>p</i> &lt; .001</b>	7.0%
Job Control	-.445	2543	2541	<b><i>p</i> &lt; .001</b>	19.8%
School Climate	.191	2586	2584	<b><i>p</i> &lt; .001</b>	3.7%
School Problems					
<u>Health Factors</u>					
SF-36 Mental Composite	-.750	2441	2439	<b><i>p</i> &lt; .001</b>	56.3%
SF-36 Physical Composite	-.137	2441	2439	<b><i>p</i> &lt; .001</b>	1.9%

TABLE 7

*Frequency Distribution of Demographics*

<b>Frequency Distribution of Demographics of Entire Data Set</b>		
<b>Variables</b> N=3222	<b>Frequency</b>	<b>Percent</b>
<b>Gender:</b>		
Males	703	21.8
Female	2518	78.2
<b>Ethnicity:</b>		
African American	286	8.9
Asian	24	.7
Caucasian	2119	65.8
Hispanic	697	21.6
Other	96	3.0

## APPENDIX SECTION

### APPENDIX A

#### *Intent to Leave Scale*

Directions: Rate how likely your intention to leave the teaching profession is on a 10 point sliding scale.

Intent is measured by: Not Likely (0-2), Somewhat Likely (3-7), Very Likely (8-10)

1. How likely are to leave the teaching profession?
  - a. After this school year?
  - b. In the next five years?

## APPENDIX B

### *Organizational Commitment*

Directions: Answer on a continuum to what extent do you agree with each of the following statements.

Agree is defined as: Strongly Disagree, Somewhat Disagree, Somewhat Agree, Strongly Agree

1. The stress and disappointments involved in teaching at this school aren't really worth it.
2. The teachers at this school like being here; I would describe us as a satisfied group.
1. I like the way things are run at this school.
2. If I could get a higher paying job I'd leave teaching as soon as possible.
3. I think about transferring to another school.
4. I don't seem to have as much enthusiasm now as I did when I began teaching.
5. I think about staying home from school because I'm just too tired to go.

## APPENDIX C

### *Job Involvement Survey*

Directions: Indicate on a continuum to what extent do you agree with each of the following statements.

Agreement defined as: Strongly Disagree, Disagree, Agree, Strongly Agree

1. I'll stay overtime to finish a job, even if I'm not paid for it.
2. You can measure a person pretty well by how good a job he does.
3. The major satisfaction in my life comes from my job.
4. For me, mornings at work really fly by.
5. I usually show up for work a little early, to get things ready.
6. The most important things that happen to me involve my work.
7. Sometimes I lie awake at night thinking ahead to the next day's work.
8. I'm really a perfectionist about my work.
9. I feel depressed when I fail at something connected with my job.
10. I have other activities more important than my work.
11. I live, eat, and breathe my job.
12. I would probably keep working even if I didn't need the money.
13. Quite often I feel like staying home from work instead of coming in.
14. To me, my work is only a small part of who I am.
15. I am very much involved personally in my work.
16. I avoid taking on extra duties and responsibilities in my work.
17. I used to be more ambitious about my work than I am now.
18. Most things in life are more important than work.

19. I used to care more about my work, but now other things are more important to me.

20. Sometimes I'd like to kick myself for the mistakes I make in my work.

## APPENDIX D

### *Satisfaction of Support*

Directions: Indicate Rate your level of satisfaction of support you receive 10 point sliding scale.

Satisfaction defined as: Dissatisfied (0-2), Somewhat Dissatisfied (2-4), Neutral (4-6)

Somewhat Satisfied (6-8); Satisfied (8-10)

1. Support from District Administrative
2. Support from Community
3. Support from Legislators, Support from Principle
4. Support from Assistant Principle/Dean
5. Support from Counselors
6. Support from Special Education Services
7. Support from Grade-level teachers
8. Support from Subject-level teachers
9. Support from Parents
10. Support from Students

## APPENDIX E

### *Control in the Classroom*

Directions: On a 4 point scale indicate how much actual control you have in planning and teaching in your current classroom?

Control defined as: No Control, Minor Control, Moderate Control, Great Deal of Control

1. Selecting textbooks and other instructional material
2. Selecting content, topics, and skills to be taught.
3. Selecting teaching techniques
4. Evaluating and grading students
5. Disciplining students
6. Determining the amount of homework to be assigned

## APPENDIX F

### *School Climate*

Directions: Indicate on a continuum of agreement to what extent to you agree with the following statements.

Agreement defined as: Strongly Disagree, Somewhat Disagree, Somewhat Agree, Strongly Agree

1. The school administration's behavior toward the staff is supportive and encouraging.
2. I am satisfied with my teaching salary.
3. The level of student misbehavior in this school (such as noise, horseplay or fighting in the halls, cafeteria, or student lounge) interferes with my teaching.
4. I receive a great deal of support from parents for the work I do.
5. Necessary materials such as textbooks, supplies, and copy machines are available as needed by the staff.
6. Routine duties and paperwork interfere with my job of teaching.
7. My principal enforces school rules for student conduct and backs me up when I need it.
8. Rules for student behavior are consistently enforced by teachers in this school, even for students who are not in their classes.
9. Most of my colleagues share my beliefs and values about what the central mission of the school should be.
10. The principal knows what kind of school he or she wants and has communicated to the staff.

11. There is a great deal of cooperative effort among the staff members.
12. In this school, staff members are recognized for a job well done.
13. I worry about the security of my job because of the performance of my students on state and/or local tests.
14. State or district content standards have had a positive influence on my satisfaction with teaching.
15. I am given the support I need to teach students with special needs.
16. The amount of student tardiness and class cutting in this school interferes with my teaching.
17. I am generally satisfied with being a teacher at this school.

## APPENDIX G

### *School Climate Problems*

Directions: Indicate to what extent each of the following are a problem in your current school?

Strength of problem defined as: Serious Problem, Moderate Problem, Minor Problem, Not a Problem

1. Student tardiness
2. Student absenteeism
3. Student class cutting
4. Teacher absenteeism
5. Students dropping out
6. Student apathy
7. Lack of parent involvement
8. Poverty
9. Students come to school unprepared to learn
10. Poor student health

## APPENDIX H

### *Perceived Stress Scale*

Directions: Indicate how often you experience these events in the last month.

Often is defined as: Never, Almost Never, Sometimes, Fairly Often, Very Often

1. Been upset because of something that happened unexpectedly.
2. Felt that you were unable to control the important things in your life.
3. Felt nervous and "stressed".
4. Felt confident about your ability to handle your personal problems.
5. Felt that things were going your way.
6. Found that you could not cope with all the things that you had to do.
7. Been able to control irritations in your life.
8. Felt that you were on top of things.
9. Been angered because of things that were outside of your control.
10. Felt difficulties were piling up so high that you could not overcome them.

## APPENDIX J

### *Mental and Physical Quality of Life Scale*

#### Short Form (36) Health Inventory

Directions: Circle the response to the following questions.

1. In general, would you say your health is
  - a. Excellent
  - b. Very Good
  - c. Good
  - d. Fair
  - e. Poor
  
2. Compared to one year ago, how would you rate your health in general now?
  - a. Much better now than one year ago.
  - b. Somewhat better now than one year ago.
  - c. About the same as one year ago.
  - d. Somewhat worse than one year ago
  - e. Much worse than one year ago.

Directions: Indicated if your current health limits you in the following activities that might occur during a typical day.

Limited indicated as: Yes, Limited a lot, Yes, Limited a Little, No, Not Limited at All

3. Vigorous activities, such as running, lifting heavy objects, participating in strenuous sports
  
4. Moderate activities, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf

5. Lifting or carrying groceries
6. Climbing several flights of stairs
7. Climbing one flight of stairs
8. Bending, kneeling or stooping
9. Walking more than a mile
10. Walking several blocks
11. Walking one block
12. Bathing or dressing yourself

Directions: Answer YES or NO to the following questions addressing your activity.

13. During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of your PHYSICAL HEALTH?
  - a. Cut down on the amount of time you spent on work or other activities
  - b. Accomplished less than you would like
  - c. Were limited in the kind of work or other activities
  - d. Had difficulty performing the work or other activities (for example, it took extra effort)
14. During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of any EMOTIONAL PROBLEMS (such as feeling depressed or anxious)?
  - a. Cut down on the amount of time you spent on work or other activities
  - b. Accomplished less than you would like
  - c. Were limited in the kind of work or other activities

Directions: Circle your response to the following questions:

15. During the past 4 weeks, to what extent has your physical health or emotional problems interfered with your normal social activities with family, friends, neighbors, or groups?

- a. Not at All
- b. Slightly
- c. Moderately
- d. Quite a Bit
- e. Extremely

16. How much bodily pain have you had during the past 4 weeks?

- a. None
- b. Very Mild
- c. Mild
- d. Moderate
- e. Severe
- f. Very Severe

17. During the past 4 weeks, how much did pain interfere with your normal work

(including both work outside the home and housework)?

- a. Not at All
- b. A Little Bit
- c. Moderately
- d. Quite a Bit
- e. Extremely

18. During the past 4 weeks, how much of the time has your physical health or emotional problems interfered with your social activities (like visiting with friends, relatives, etc.)?

- a. All of the Time
- b. Most of the Time
- c. Some of the Time
- d. A Little of the Time
- e. None of the Time

Directions: Indicate how often during the past 4 weeks have you experience or felt these items.

Often defined in terms of time: All of the Time, Most of the Time, A Good Bit of the Time, Some of the Time, A Little of the Time, None of the Time

19. Did you feel full of pep?

20. Have you been a very nervous person?

21. Have you felt so down in the dumps that nothing could cheer you up?

22. Have you felt calm and peaceful?

23. Did you have a lot of energy?

24. Have you felt downhearted and blue?

25. Did you feel worn out?

26. Have you been a happy person?

27. Did you feel tired?

Directions indicate how true or false the following statements are in relation to you.

Truth defined as: Definitely True, Mostly True, Don't Know, Mostly False, Definitely

False

28. I seem to get sick a little easier than other people

29. I am as healthy as anybody I know

30. I expect my health to get worse

31. My health is excellent

## APPENDIX K

### *Depression Scale*

Directions: Indicate how often you have experienced the following problems in the last two weeks.

Often is described in terms of days: Not at all, Several days, More than half the days, Nearly every day

1. Little interest or pleasure in doing things
2. Feeling down, depressed, or hopeless
3. Trouble falling or staying asleep, or sleeping too much
4. Feeling tired or having little energy
5. Poor appetite or overeating
6. Feeling bad about yourself, or that you are a failure, or have let yourself or your family down
7. Trouble concentrating on things, such as reading the newspaper or watching television
8. Moving or speaking so slowly that other people could have noticed? Or the opposite - being so fidgety or restless that you have been moving around a lot more than usual
9. Thoughts that you would be better off dead or of hurting yourself in some way

## APPENDIX L

### *Anxiety Scale*

Directions: Indicate how often you have experience the following problems over the last 4 weeks.

Often defined in terms of days: Not at all, Several days, More than Half the Days

1. Feeling nervous, anxious, on edge, or worrying a lot about different things
2. Feeling restless so that it is hard to sit still
3. Getting tired very easily
4. Muscle tension, aches, or soreness
5. Trouble falling asleep or staying asleep
6. Trouble concentrating on things, such as reading a book or watching TV
7. Becoming easily annoyed or irritable

## APPENDIX M

### *Somatization Scale*

Directions: Indicate how bothered the following problems has been in the last 4 weeks.

Bothered defined as: Not bothered, Bothered a little, Bothered a lot

1. Stomach pain
2. Back pain
3. Pain in your arms, legs, or joints (knees, hips, etc.)
4. Menstrual cramps or other problems with your periods
5. Pain or problems during sexual intercourse
6. Headaches
7. Chest pain
8. Dizziness
9. Fainting spells
10. Feeling your heart pound or race
11. Shortness of breath
12. Constipation, loose bowels, or diarrhea
13. Nausea, gas, or indigestion

## APPENDIX N

### *Panic Disorder Scale*

Directions: Answer Yes or No to the following questions.

1. In the last 4 weeks, have you had an anxiety attack; suddenly feeling fear or panic? Yes/No
  - a. If yes, has this ever happened before?
  - b. If yes, do some of these attacks come suddenly out of the blue, that is, in situations where you don't expect to be nervous or uncomfortable?
  - c. If yes, do these attacks bother you a lot or are you worried about having another attack?
  - d. If no, please move to next survey.

Directions: Answer Yes or No to the following questions about your last bad anxiety attack:

2. Were you short of breath?
3. Did your heart race, pound, or skip?
4. Did you have chest pain or pressure?
5. Did you sweat?
6. Did you feel as if you were choking?
7. Did you have hot flashes or chills?
8. Did you feel dizzy, unsteady, or faint?
9. Did you have tingling or numbness in parts of your body?
10. Did you tremble or shake?
11. Were you afraid you were dying?

## APPENDIX P

### *Health History Questionnaire*

Directions: Circle the problems or conditions you are currently experiencing.

1. General Health

- a. Epilepsy
- b. Diabetes
- c. Stroke Liver disease
- d. Thyroid problems
- e. Multiple Sclerosis
- f. Kidney/bladder problems
- g. Cancer, please specify:

2. Mental Health

- a. Fatigue Anxiety
- b. Changes in appetite
- c. Eating disorder
- d. Depression

3. Allergy

- a. Drug allergies
- b. Hay fever
- c. Food allergies
- d. Skin rashes

4. Ears, Nose, Mouth, Throat

- a. Earaches Ringing in ears
- b. Painful chewing Loss of hearing/deafness

- c. Grind teeth while asleep Sinus infection
- d. Clench jaw while asleep

5. Eyes

- a. Blurred vision
- b. Loss of vision
- c. Double vision

6. Gastrointestinal

- a. Heartburn
- b. Ulcer
- c. Stomach or abdominal pain
- d. Nausea/Vomiting
- e. Persistent diarrhea
- f. Gall bladder condition
- g. Persistent constipation

7. Heart and Lungs

- a. Pain in chest
- b. High cholesterol
- c. High blood pressure
- d. Irregular heart beat
- e. Low blood pressure

8. Muscles, Joints, Bones

- a. Arthritis
- b. Osteoarthritis

- c. Back pain

9. Muscle pain or tenderness

- a. Joint pain

- b. Tingling extremities

- c. Joint stiffness or swelling

- d. Fibromyalgia

- e. Neck pain

- f. Difficulty walking

10. Neurological

- a. Balance trouble

- b. Light-headed or dizziness

- c. Headaches (non-migraine)

- d. Memory loss

- e. Migraines

11. Pulmonary

- a. Asthma

- b. Shortness of breath

- c. Chronic or frequent cough

- d. Tightness in chest

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