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ANTECEDENTS AND CONSEQUENCES OF LIFESTYLE CHOICE IN PUBLIC ACCOUNTING

A dissertation submitted in partial fulfillment of the requirements for the degree of
Doctor of Philosophy in Business at Virginia Commonwealth University

Ambrose Jones III, CPA
Bachelor of Science, King's College, Wilkes-Barre, PA, 1970

Committee Members:

Chair: Dr. Benson Wier
Professor of Accounting,
Virginia Commonwealth University

Co-chair: Dr. Carolyn Strand Norman
Associate Professor of Accounting
Virginia Commonwealth University

Dr. Edward N. Coffman
Professor of Accounting and Department Chair
Virginia Commonwealth University

Dr. Larry J. Williams
University Professor of Management
Virginia Commonwealth University

Dr. Don W. Finn
Professor of Accounting, Garrison/Wilson Chair in Accounting
University of Arkansas

Richmond, Virginia
March, 2007

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TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENT	ii.
TABLE OF CONTENTS.....	iii.
LIST OF TABLES.....	v.
LIST OF FIGURES	vi.
ABSTRACT	vii.
Chapter I: INTRODUCTION	1.
Chapter II: LITERATURE REVIEW.....	9.
Role Theory.....	9.
Role Stress and its Consequences in Public Accounting.....	11.
Empirical Studies of Role Stress in Public Accounting.....	14.
Coping with Stress	26.
Empirical Studies of Healthy Lifestyle and Psychological Well- Being	34.
Chapter III: HYPOTHESES DEVELOPMENT.....	44.
Role Stress and Burnout	44.
Healthy Lifestyle as a Mediating Variable.....	46.
Chapter IV: RESEARCH METHOD	49.
The Sample	49.
The Survey	49.
Measured Variables	52.
Data Analysis	56.
Chapter V: ANALYSIS AND RESULTS	60.
Descriptive Statistics	60.
Confirmatory Factor Analysis	62.
Structural Model.....	64.
Tests of Hypotheses	58.
Additional Analysis.....	68.
Chapter VI: CONCLUSIONS	71.
Discussion	71.
Contribution	75.
Limitations and Potential Future Research.....	76.

REFERENCES	78.
APPENDIX: SURVEY INSTRUMENT.....	105.
VITA	112.

LIST OF TABLES

	Page
Table 1	Role stress studies in public accounting 90.
Table 2	Empirical studies of healthy lifestyle behaviors and psychological well-being 92.
Table 3	Characteristics of Sample 94.
Table 4	Descriptive Statistics of Study Variables 95.
Table 5	Differences in Means of Study Variables across Auditor Position, Gender and Age 96.
Table 6	Reliability and Correlations of Variable Means 97.
Table 7	Results of Confirmatory Factor Analysis 98.
Table 8	Overall Fit Summary..... 99.
Table 9	Test Results and Estimated Coefficients for Hypothesized Model 100.

LIST OF FIGURES

	Page
Figure 1 Coping diagram	101.
Figure 2 Adapted Danna and Griffin framework	102.
Figure 3 Theoretical research model	103.
Figure 4 Structural Equation Model	104.

ABSTRACT

This dissertation examines the effects of healthy lifestyle of auditors in public accounting as a mitigating influence between role stress and job outcomes (performance, satisfaction, and turnover). Based on coping and self-determination theories, the study was designed to investigate the impact of healthy lifestyle as a coping measure that is *within the control of the individual*, regardless of firm policies or the firm's work environment.

To address the research issues, a survey was conducted of professional auditors employed by a large national public accounting firm with offices located throughout the United States. The sample included 1,026 auditors from various regions of the United States and at various levels in the firm. Structural equation modeling was used to analyze the causal effects of role stressors and healthy lifestyle in a fully-mediated model on job outcomes of performance, satisfaction and turnover intentions.

The hypothesized model demonstrated acceptable fit statistics and, generally, the hypotheses were supported. The results indicate that role stress as mediated by job burnout and its effect on psychological well-being will have a negative impact on job outcomes. However, the negative effects of role stress and job burnout can be mitigated by a healthy lifestyle which, mediated by its effect on vitality and psychological well-being, is positively related to job outcomes.

CHAPTER I

INTRODUCTION

The purpose of this study is to test the effects of healthy lifestyle as a mediating influence between role stress and job outcomes (performance, satisfaction, and turnover) of auditors in public accounting. Previous studies offer suggestions for dealing with role stressors at the organizational level (e.g., Senatra 1980; Alderman and Deitrick 1982; Choo 1986; Senatra 1988; Bamber, Snowball, and Tubbs 1989; Rebele and Michaels 1990; Snead and Harrell 1991; Collins and Killough 1992; Collins 1993; Fisher 2001; Viator 2001; Almer and Kaplan 2002). However, at the individual level, few options may be available to change stressors created by the public accounting work environment. The present study examines the contention that through a healthy lifestyle (defined as maintaining a program of regular physical exercise, good diet, good sleep habits, and refraining from excessive alcohol and tobacco consumption) an individual can cope with role stressors, regardless of the firm work environment, thereby enhancing one's job performance. The sustainability of an organization is largely determined by the quality and performance of its human capital. This is especially true of professional service organizations, such as public accounting firms, where revenues are generated primarily by billable hours of their people for a continuous client base. While some stress is normal and helps to maintain alertness, excessive stress can have deleterious consequences for both individuals and organizations (Collins and Killough 1989).

Past studies have drawn attention to the potential for severe stress and burnout in a wide set of occupations and professions exploring both the antecedents and the outcomes of stress (Goolsby 1992; Schiltz and Syverud 1999; Fogarty, Jagdip, Gary, and Ronald 2000; Williams, Konrad, Scheckler, Pathman, Linzer, McMurray, Gerrity, and Schwartz 2001). The relationship of stress to the mental and physical health of individuals has also been studied in a wide variety of occupations. Outcomes include cardiovascular and biochemical problems, along with anxiety, burnout and depression (Williams et al. 2001). For example, an early study of tax accountants revealed significantly higher cholesterol levels during the busy season, consisting of the period when most tax returns are prepared (January to April) compared to after the busy season (Friedman, Rosenman, and Carrol 1958). Excessive stress can have negative effects on both health and performance of the individual accountant as well as on the organization in the form of absenteeism, lower productivity, and turnover (Sanders, Fulks, and Knoblett 1995).

According to Schiltz and Syverud (1999), many lawyers are in remarkably poor health and are quite unhappy. Schiltz asserts that lawyers suffer from extreme rates of anxiety and above average rates of depression, alcoholism, drug abuse, divorce, suicide and poor health. Attorneys reveal that their primary complaint is the long hours they must work. Extreme effort is required to serve existing clients and to attract new ones in a very competitive marketplace. Financial rewards are one of the reasons given for the extreme effort, but even with that, job satisfaction does not appear to be an outcome of that effort.

Physicians also have difficult, challenging and stressful occupations. They are perceived as being surrounded by accommodating subordinates and respectful colleagues in a socially useful profession that is held in high esteem by the public. However, the literature chronicles decreasing job satisfaction corresponding to high levels of stress, leading to outcomes such as higher turnover intentions, burnout, mental health problems, and higher rates of suicide (Williams et al. 2001).

Goolsby (1992) contends that role stress studies form one of the most prevalent research paradigms in the marketing profession because marketing positions require the individual to play many roles involving interactions with people from inside and outside the organization, with diverse needs and expectations. Thus, role stressors for marketing professionals are negatively associated with job outcomes of performance, satisfaction, commitment, and withdrawal.

Smith and Everly (1990) examine the relationship between stress arousal, stress-related illness, and coping behaviors within the context of accounting academicians. Their results indicate that accounting educators report a consistent pattern of stress, illness and coping. That is, reported levels of stress were positively correlated with illness, whereas positive coping behavior was negatively related to illness.

Auditors in public accounting firms are not exempt from the dilemma posed by having a stressful career, and accountants agree that theirs is a high stress profession (Sanders et al. 1995). There is a large body of literature devoted to role stress in a public accounting setting as it impacts job performance and job satisfaction (Sorenson and Sorenson 1974; Senatra 1980; Alderman and Deitrick 1982; Aranya, Lachman, and

Amernic 1982; Choo 1986; Rebele and Michaels 1990; Snead and Harrell 1991; Collins and Killough 1992; Fogarty et al. 2000; Fisher 2001). Also, it is believed that a connection exists between role stress and outcomes such as career success, personal health, decreased effort, and turnover (Senatra 1980).

Role stress has several component factors including role ambiguity, role conflict and role overload, among others. Role ambiguity occurs when a role sender does not provide adequate information to an employee for the effective performance of his or her role in the firm (Senatra 1980). Role conflict arises when there are incompatible expectations from role sender(s), such that if the employee complies with one expectation, it would be difficult to comply with another competing expectation (Kahn, Wolfe, Quinn, Snoek, and Rosenthal 1964; Gaertner and Ruhe 1981). Role overload occurs when an individual perceives an onerous number of role requirements (Schick, Gordon, and Haka 1990).

The work life of many public accountants is characterized by long hours, constant deadlines, a hectic work pace, and limited time for personal life. In many cases, the demands exceed the abilities of the individual (Fogarty et al. 2000). The problem of work-life balance in the United States is demonstrated in a 2004 study conducted for the Big 4 accounting firm, PricewaterhouseCoopers (PwC). Work-life balance is cited as a very strong predictor of turnover at the firm. Results showed that employees chose employment elsewhere, even if they liked their jobs, to increase work-life balance (PwC 2004). Nixon (2004) reveals that long hours and job insecurity seem to be the major contributing factors of high stress levels for public accountants in the United Kingdom

(UK). Chartered accountants in the UK also encounter constant deadlines and expectations making it difficult to balance work and family life.

The work-life balance problems referred to by PwC and Nixon often lead to a condition termed “job burnout,” a condition represented by a specific psychological stress syndrome in which a pattern of negative responses results from work demands or stressors (Maslach 1982). Unlike stress, which can positively influence performance in public accounting (Choo 1986), burnout produces exclusively adverse consequences for both the employee and the organization (Cordes and Dougherty 1993). Burnout takes place over time as a result of increasing work demands. The initial symptom is emotional exhaustion, followed by depersonalization, characterized by a cynical attitude, resulting in less effective job performance (Maslach 1982). The most common employee coping mechanism is to minimize one’s emotional investment in the job (Jackson, Schwab, and Schuler 1986).

Coping with job stress includes behavioral efforts to manage the demands on one’s resources. Coping can take the form of control, escape, or symptom management (Latack 1986). It also can include cognitive efforts such as self-talk or behavioral dependencies, such as smoking, consuming alcohol, or exercising more (Latack and Havlovic 1992). One way of dealing with the high stress level in the public accounting profession might be to enter into a flexible work arrangement. Almer and Kaplan (2002) show that accountants with such work arrangements demonstrate higher levels of job satisfaction and lower turnover intentions. However, adopting a flexible work arrangement is not possible for many.

Lifestyles can also have a significant effect on stress with exercise often suggested as a healthy means of coping with the negative effects of stress (Sanders et al. 1995). Neck and Cooper's (2000) review provides empirical evidence supporting the relationship between physical fitness and mental performance, job performance and enjoyment, higher energy, freedom from illness, longevity and enhanced feelings of well-being (Gettman 1980; Frew and Bruning 1988; Rippe 1989; Brandon and Loftin 1991; Lupinacci, Rikli, Jones, and Ross 1993; Bunce, Barrowclough, and Morris 1996; Shephard 1999). However, none of these studies report on the effect of a healthy lifestyle for public accountants.

The present study expands on previous research by exploring whether healthy lifestyle acts as a mitigating influence between role stress and job outcomes for auditors in a public accounting firm setting. Many studies have examined role stressors as determinants of a public accountant's job satisfaction, job performance and turnover intentions. Invariably, the results demonstrate an inverse relationship between role stress and job performance and job satisfaction, and a positive relationship with turnover intentions (Senatra 1980; Gaertner and Ruhe 1981; Weick 1983; Choo 1986; Bamber et al. 1989; Kelly and Margheim 1990; Rebele and Michaels 1990; Fogarty 1994; Fogarty et al. 2000). Recommendations to mitigate the effects of role stress are usually made at the organizational level (e.g. Senatra 1980; Rebele and Michaels 1990; Collins and Killough 1992; and Almer and Kaplan 2002) suggesting that firms should introduce coping measures to reduce role stressors in the accountants' work environment.

An objective of this study was to investigate the impact of healthy lifestyle as a coping measure that is *within the control of the individual*, regardless of firm policies or the firm's work environment. To address the research issues, a survey was conducted of audit professionals employed by a large national public accounting firm with offices in various locations throughout the United States. The survey instrument was based on several previously validated instruments used to capture the variables of interest. Structural equation modeling was used to analyze the causal effects of role stressors for the public accountant, as mitigated by lifestyle, on job outcomes of performance, satisfaction and turnover intentions.

Results of the study showed that the hypothesized model displayed adequate fit statistics along with the general support of the individual hypotheses. It is likely that other better fitting models are plausible, highlighting implications for practitioners and the opportunity for more research examining role stress among public accountants and mediators of its impact on psychological well-being and job outcomes. There is a vast disjointed body of literature covering diverse fields that relates directly or indirectly to health and well-being in the workplace (Danna and Griffin 1999). This study should provide added clarity for future work in this area and to continue refinement of the framework used here with the ultimate goal of providing a rigorous model.

The remainder of this dissertation is organized as follows. The next chapter reviews previous research on role stress in public accounting and coping with stress with healthy lifestyle. The model and hypotheses are developed in chapter three. Chapter four presents the research methodology and chapter five includes analysis and results.

Conclusions are presented in chapter six, along with limitations of the study and considerations for future research.

CHAPTER II

LITERATURE REVIEW

Role Theory

A person's environment consists largely of formal organizations or groups and the life of an individual can be pictured by the array of roles he/she plays in these organizations or groups (Kahn et al. 1964). Along with organizational roles come organizational responsibilities, expectations, and stress. Role stress has been studied extensively in the accounting, management and organizational behavior literature and consists of role ambiguity, role conflict, and role overload (Jackson and Schuler 1985; Fogarty et al. 2000; Fisher 2001).

Individuals serving an organization must have specific information to perform their job adequately and for their personal comfort and psychological well-being, i.e. an individual must know what kinds of behaviors will satisfy or frustrate his/ her needs or values and what dangers or opportunities exist in the environment (Kahn et al. 1964). Successful performance is defined as meeting or exceeding the expectations of others associated with the organization and it requires the knowledge of rights, duties and responsibilities to fulfill one's office (position in relationship to the system as a whole). Employees need to know what kinds of behaviors will be rewarded and what kinds will be punished, and the likelihood of their occurrence.

According to Kahn et al. (1964), role ambiguity occurs in a work environment when an employee lacks adequate information to accomplish his/her role in a satisfactory

manner. Frequently, public accountants work without much direct supervision and are exposed to new situations, e.g., new clients, new industries, or new technical areas. This may result in uncertainty about the expectations of supervisors or clients with which to guide the employee's behavior (Senatra 1980). With the up-or-out nature of careers in public accounting, ambiguity within one's role can be especially stressful (Gaertner and Ruhe 1981).

Conflict, according to Kahn et al. (1964) develops when the individual is faced with or is "*sent*" two or more sets of pressures (objectives), such that achieving one makes it difficult to achieve the other(s). These incompatible pressures or objectives may be defined as: (1) *intra-sender* - sent from the same individual, (2) *inter-sender* - sent from more than one sender, (3) *inter-role* - whereby the pressures of the organization are in conflict with membership in another organization or group, or (4) *person-role* - such as when role pressures conflict with an individual's own ethics or values (Kahn et al. 1964). Members of service organizations that continually have contact with others in the organization and with customers or clients are often referred to as "boundary spanners" and this frequently leads to conflict (Goolsby 1992; Weatherly and Tansik 1993).

Rebele and Michaels (1990) assert that at most levels auditors interact with many people both within and without the firm. Employees in public accounting firms who have not yet become partners are frequently multi-tasking by serving more than one client at a time, and frequently this involves being subordinate to multiple supervisors. This can even occur at the partner level in large public accounting firms. As a result, role conflict may develop when an employee or a partner faces conflicting expectations from his/her

superiors or clients. Auditors interact with other members of their department (e.g., other members of their audit teams), other departments within the firm (e.g., tax department and consultants), and with organizations in the firm's external environment, such as clients, sources of audit evidence and the SEC. Thus, public accounting professionals as boundary spanners are expected to exhibit technical, interpersonal marketing, and customer service skills.

Role overload occurs when there are an inappropriate and onerous number of role requirements (Schick et al. 1990). This occurs when role senders require an individual to perform a number of tasks, which might be legitimate by themselves, but which, taken together, may be difficult for the person to complete in the given amount of time (Kahn et al. 1964).

Role Stress and its Consequences in Public Accounting

Role stressors, consisting of three dimensions (ambiguity, conflict and overload), have been widely studied in the public accounting profession (Fogarty et al. 2000). Stress among accountants has been examined as both a dependent and an independent variable. Stress can originate in actual or perceived conditions and is produced when there is a demand/capability imbalance, that is demands exceed capabilities (overload) or capabilities exceed demands (underload) and stress is affected by the individual's response to this imbalance (Weick 1983).

According to Weick, accountants' stress levels increase because they routinely set standards that exceed past performance requiring sustained effort. Furthermore, accountants are trained to be critical and many bring work-related stress home from the

workplace, which leads to additional interpersonal stress (Figler 1980). Miller (1979) offers the explanation that stress occurs in many individuals because they lack control of their situation and will attempt to counter with endeavors at gaining control. He refers to this as the “minimax hypothesis,” i.e., individuals wanting to minimize the maximum amount of danger in a situation, attempt to control the situation (Miller 1979). This implies that stress can be removed or diminished by giving options or choices to the accountant as a means of relieving stress, i.e., allow the accountant to participate in decision-making. However, because of the hierarchical nature of firms and client demands, the public accounting environment is not always conducive to such participative management style.

Negative, dysfunctional consequences of stress (“distress”) include psychological reactions (such as anxiety, apathy, depression and fatigue), behavioral reactions (drug use, alcohol abuse, bad temper), and physiological reactions (disease, headaches, insomnia) (Weick 1983). Role stressors are also said to cause burnout (Fogarty et al. 2000). The burnout phenomenon has been studied in a wide variety of occupations and has been thought to represent a unique response to frequent and intense client or patient interactions (e.g., Maslach 1982; Cordes and Dougherty 1993).

Burnout results from the cumulative effect of role stressors (role conflict, role ambiguity, and role overload) that may not be excessive individually, but when experienced together may overwhelm the coping resources of the individual (Feldman and Weitz 1988). Maslach (1982) describes three dimensions of burnout: emotional exhaustion (feelings of depleted energy and sensation), depersonalization (felt distance

from others and an uncaring, callous attitude toward others), and diminished personal accomplishment (inefficacy, low motivation and reduced self-esteem).

The burnout cycle occurs over a period of time and takes on various stages (Kraft 2006). Freudenberger (1980) describes the stages of burnout, some of which an individual may skip or some of which may overlap. These are compulsion to prove oneself, working harder, neglecting needs, displacement of conflicts, revision of values, denial of emerging problems, withdrawal, behavior changes, depersonalization, inner emptiness, depression, and mental and physical collapse.

In their review of burnout studies, Cordes and Dougherty (1993) provide empirical evidence that has shown the many negative consequences of role stress/burnout both to the individual and to the organization, highlighting the need for management to deal with the problem. Burnout can result in consumption behaviors, such as smoking, drug and alcohol use. Burnout consequences to the individual include deterioration of mental health characterized by decreased self-esteem, depression, anxiety, helplessness, and irritability. Physical health can deteriorate with symptoms including headaches, insomnia and gastroenteritis. Deleterious effects become evident in interpersonal relationships with family, friends and co-workers. Organizational outcomes include turnover, absenteeism, and decreased quality and quantity of job performance. Thus, as the evidence indicates, the impact on both the individual and the organization is negative and presumptively costly.

Diminished work product of public accounting firms is illustrated by The Commission on Auditors' Responsibilities of the American Institute of Certified Public

Accountants (also known as the Cohen Commission) conclusions about excessive time pressures, one of the often hypothesized antecedents of stress and burnout (American Institute of Certified Public Accountants 1978). The Cohen Commission concluded that excessive time pressures are one of the most pervasive causes of audit failures. The Commission also found other role stress antecedents in public accounting firms such as inadequate training, too little work experience and overload. One instance of overload cited was a partner supervising fifteen to twenty engagements, many with identical year-ends, and unable to find adequate time to review workpaper files. The Cohen Commission suggested further study of any factors that have the potential to improve auditor performance.

Empirical Studies of Role Stress in Public Accounting

Sorenson and Sorenson (1974) conducted one of the earliest studies demonstrating the significance of role conflict experienced by professionals in public accounting firms. A survey of 264 certified public accountants at all levels (junior accountant to partner) from offices of large public accounting firms dispersed throughout the United States was conducted. Role conflict was operationalized as the conflict that exists between an auditor's professional orientation (orientation to the public accounting profession, generally) as compared to his/her bureaucratic orientation (orientation to the specific firm in which he/she is employed). Their results indicate that role conflict has an adverse impact on the auditor's job satisfaction and leads to higher turnover intentions. This suggests that those intending to leave were overly challenged by the bureaucracy of the firm and viewed the professional climate as being undesirable. CPAs with both high

professional and high bureaucratic orientations were not likely to fulfill their professional and firm goals because the two conflict with each other.

One of the earliest studies to explore role conflict and role ambiguity as separate constructs was conducted by Senatra (1980). The study used measures of role conflict and role ambiguity developed by Rizzo (1970) and surveyed 88 senior accountants from eight offices of one Big Eight public accounting firm. Results showed that role conflict and role ambiguity are distinct constructs in the public accounting (auditing) environment. Further, Senatra studied the impact of these constructs on job related tension, satisfaction and the intention to leave (turnover). Senatra also found that firm environment resulted in sources of stress; there were significant relationships between role conflict and tension; and, role ambiguity led to job dissatisfaction. Implications are that firms could alleviate role stress by making organizational changes and that educators preparing students for future careers should be aware of the problems faced by professionals working in complex organizations such as a large public accounting firms.

Gaertner and Ruhe (1981) examined job stress and strain, and situational moderators using a sample of 193 partners and professional employees representing all levels from seven public accounting firms of varying size. The study was designed to measure differences of each stress and strain among types of firms, functional categories (audit, tax, etc.) and professional level. Their results revealed that national firms have a slightly more stressful work environment than local and regional firms. Also, auditors perceived themselves as having greater work variance than other functional specialists leading to greater work load dissatisfaction than respondents from the other functional

areas (e.g. tax and consulting). While acknowledging the need for some stress as a motivator, many CPAs fail to recognize the symptoms of stress, such as depression and anxiety, and fail to recognize negative personal behaviors adopted to cope with stress. Results included information about costs of stressful environments to firms and to individuals and organizations. Strategies recommended to manage stress included exercise, relaxation techniques, and non-work activities.

In Aranya et al. (1982), job satisfaction and some of its correlates were studied using a sample of 1,174 Canadian chartered accountants (CAs) in three groups: sole practitioners and partners in large firms, employees of large public accounting firms, and CAs employed in private industry. Of the total sample, 597 subjects were CAs that practiced public accounting as either a sole practitioner/partner or an employee of a CA firm. The study was based on path analysis and included relationships between professional and organizational commitment, work need deprivation, job satisfaction and intention to leave the firm (migration tendencies). Findings support the contention that work needs have a direct and indirect influence on job satisfaction and commitment to the organization for the two groups of CAs practicing public accounting. Although no significant association between job satisfaction and migration tendencies was found, they suggest there may have been other reasons for not finding turnover intentions. For example, they argue that the lack of available jobs in the market for similar pay and the impact of non-competition clauses in employment and partner contracts may explain their lack of findings. Thus, it is possible that the factors preventing an escape from the firm could have been adding to stress.

The Cohen Commission documented findings concerning role overload and related time budget pressures experienced by auditors (American Institute of Certified Public Accountants 1978). Most of the evidence for the findings of the Commission was based on a Commission-sponsored survey covering a wide range of topics including time pressures on auditors (Alderman and Deitrick 1982).

The Cohen Commission Report conclusions reported that public accountants use time budgets to manage their administrative and client responsibilities, i.e. auditors are evaluated by their ability to meet time deadlines and budgets, and this represents major criteria for advancement in firms. Misstating time and doing work without recording time were found to cause the loss of several control elements during the planning, performance and evaluation of the audit, since budgets are used to make future plans. As a result of perceived time budget pressures, auditors were found to sign-off prematurely on audit program steps. This, in turn, causes concern related to the quality of the overall audit and the auditors' opinion on the client's financial statements.

The Cohen Commission Report was the impetus for subsequent research concerning the organizational climate of public accounting firms and the behavior exhibited by partners and employees. For example, using a sample of 274 auditors working in Big Eight firms in Texas, Alderman and Deitrick (1982) conducted a survey confirming that premature sign-offs did occur, time pressures on auditors resulted in auditors taking work home without charging the time, time pressures significantly influence auditor job performance, and time pressures were responsible for the turnover of seniors and staff.

Subsequent research has investigated the effects of role stress experienced by auditors (e.g., Kimes 1977; Cooper and Payne 1978; Sapp and Seiller 1980; Helliwell 1982; Strawser, Kelly, and Wise 1982; Kusel and Deyoub 1983; Smith and Katzman 1983; Weick 1983; Choo 1983a, 1983b) These studies examined the impact of role stress on job satisfaction and turnover intentions as well as the impact of various non-personality factors contributing to auditors' role stress. Role stress factors included the type and quality of supervision, promotional procedures, job autonomy, career opportunities, and social supports, however, according to Choo (1986), none of these studies examined personality variables or job performance outcomes. Choo documented two studies exploring determinants and consequences of role stress in the auditing profession using the variables missing from the earlier studies. The first study explored the impact of personality variables, and the second study explored the impact of role stress on job performance.

In his first study, Choo (1986) surveyed practicing auditors from both large and small Chartered Accounting firms. The usable responses were from 172 auditors covering all professional levels of partner through junior accountant. Choo investigated four personality dispositions as they impact the experience of job stress: (1) *Type A* – characterized by extremes such as competitiveness, hard-driving, intense striving for achievement, sense of time urgency, aggressiveness and hostility, (2) *control* – a tendency to believe and act as if one can influence the course of events, (3) *commitment* – a tendency to become involved and to find meaning in one's activities, and (4) *challenge* – a disposition that change rather than stability is normal and that changes are incentives

to growth. Consistent with previous research and theory, Choo found that the Type-A personality was positively associated with job stress, while control, commitment and challenge personality dispositions were negatively related to job stress. These findings suggest that as auditors' personal characteristics of control, commitment and challenge increase, their perceived job stress decreases.

Choo's second study (1986) investigated whether performance and stress follow an inverted U-shape, as previously theorized, in an audit setting. This relationship, called the Yerkes-Dodson Law, predicts that stress in the workplace increases job performance to a point, and thereafter stress overload occurs, which acts as a detriment to performance. A survey of 167 auditors from all professional levels in large and small public accounting firms in a major metropolitan area was used. Because of the paucity of then extant research on auditors' job performance, no standard research instrument measuring auditor performance had been developed. With the assistance of five personnel partners from five national chartered accounting firms developed an instrument with 12 variables. An item was included if it was mentioned by at least two of the partners. Equal weighting was given to each of the twelve variables for each professional level of auditor. Choo's findings supported the inverted U-shape relationship between stress and auditor job performance, suggesting that a certain amount of stress is necessary to maintain auditor performance, but that performance drops once the stress level exceeds a certain threshold (Choo 1986).

Senatra (1988) studied the sources and consequences of role conflict and role ambiguity. As well, he examined differing perceptions between men and women

employed by public accounting firms. He surveyed 54 male and 37 female audit seniors in ten offices of a Big Eight public accounting firm. Organizational stressors (such as conflicting objectives, excessive job and time pressures) as well as personal stressors (including satisfaction with distance from relatives, time to pursue personal objectives) all contributed significantly to role conflict and ambiguity for both men and women. Senatra suggested that executives of public accounting firms need to make organizational changes in order to eliminate or moderate the sources of employee and partner stress.

Bamber et al. (1989) offer empirical evidence supporting the presence of role conflict and role ambiguity as distinct constructs in the audit setting as previously demonstrated by Senatra (1980). Additionally, Bamber et al. offer evidence relating a firm's organizational structure, as operationalized by its audit structure, to role conflict and ambiguity. A firm with a structured approach is one with an audit methodology as defined by Cushing and Loebbecke (1986) and is characterized by a systematic approach using a prescribed, logical sequence of procedures, decision and documentation steps and that incorporate a comprehensive and integrated set of audit policies and tools to assist the auditor. An unstructured approach, on the other hand, was one having implicit goals and direction, inter-group cooperation, decentralized decision making and a low level of formalization. This research was performed with 121 subjects from four Big Eight accounting firms and used audit tools and decision aids as a proxy for audit structure. Audit seniors were surveyed from two firms with structured methodologies and two firms with unstructured methodologies. The study concluded that higher role stress was demonstrated by subjects from the firms with the lower degrees of audit structure,

suggesting that a structured audit approach by the organization might relieve some of the stress experienced by the auditors.

Boundary spanning activity and perceived environmental uncertainty were introduced as potential antecedents to role stress in later research that also examined the effect of the moderating variables of organization level and need for achievement on job outcomes (Rebele and Michaels 1990). The study surveyed 155 auditors at all levels with at least one year experience at four international accounting firms. The study used a path analytic model, and results supported a significant negative relationship for role ambiguity, but not role conflict, on job performance. The findings of the study support the view that perceived environmental uncertainty is a critical variable increasing auditor role stress, as well as negatively affecting outcomes of job satisfaction and performance. Boundary spanning impact was indirect, operating only through perceived environmental uncertainty. Neither organizational level nor need for achievement had significant effects on the relationship between the role stressors and job outcomes. Rebele and Michaels argue that accounting firms cannot eliminate the stress-producing elements, so methods of controlling it are suggested. Those methods include more effective supervision and increased structural formalization to eliminate perceived environmental uncertainty.

The impact of psychological factors on auditor job satisfaction in a large public accounting firm was examined by Snead and Harrell (1991). Using a sample of 38 senior auditors in a large firm and path analytic methods, these authors found that influence orientation (the need for power and the need for affiliation) and achievement motivation positively influence job satisfaction, which in turn positively influenced long-term career

intention in a Big Eight firm. However, generalizability for this study is limited by the small sample size from a single firm.

Collins and Killough (1989; 1992) investigated stress using a national sample of 956 senior or manager level employees in public accounting firms drawn from membership records of the AICPA. They studied the impact of organizational stressors: role ambiguity, role conflict, role overload (quantitative and qualitative), time pressure, career progress, responsibility for people, and job scope, along with an extra-organizational stressor of work/home conflict. Dependent variables consisted of job outcomes, defined as job-related tension, job satisfaction and propensity to leave public accounting. Using canonical correlation analysis, Collins and Killough found that quantitative overload, work/home conflict, time pressure and responsibility for people were associated with job-related tension. Three stressors, career progress, job-scope and role ambiguity were associated with job dissatisfaction and propensity to leave public accounting, while role conflict and qualitative overload were related to all three job outcomes. Thus, this study replicated many of the earlier findings, but added a large sample size and introduced an extra-organizational source of stress – work/home conflict.

Collins (1993) extended the Collins and Killough (1992, 1989) studies to explore gender differences with a follow-up (Phase 2) survey administered to the original respondents one year after the original survey. Phase 2 of the study resulted in 670 responses and examined whether stress is associated with higher levels of departure from public accounting for female compared to male public accountants. The respondents were divided into two groups, those that departed public accounting and those that remained in

the profession. Results based on analysis of variance (ANOVA) and logistic regression analyses showed that job related stress was experienced at significantly higher levels by women compared to men and that stress played a more important role in the decision to leave public accounting for female than for male accountants. Male accountants reported that departures from the profession were related to concerns about future advancement opportunities. The researchers concluded that stress tends to be dysfunctional to both the individual and the organization and suggested that public accounting firms offer formal mentoring programs and flexible work arrangements to relieve sources of stress.

Fogarty (1994) studied the influence of demographic (age, gender, marital status) and organizational attributes (rank and tenure) on job outcomes and work processes of public accountants. Dependent variables included job outcomes (job performance, job satisfaction, turnover intentions and organizational commitment) and work processes (role stress, job characteristics and organizational technology). Data, collected from 460 audit staff members in various U.S. offices of Big 6 public accounting firms, suggested that demographic variables had little influence on the job outcomes and processes of public accountants. Organizational attributes (tenure and rank) demonstrated the most significant effects on job outcomes and processes. These findings suggest auditors are more influenced by their jobs and the opportunities provided by their jobs than by individual characteristics, providing support for an organizational socialization hypothesis. Thus, the results are aligned with the “up or out” personnel policy of most public accounting firms – the individual who stays longer earns promotions and more responsibilities enriching their experience relative to lower positions. This also provides

impetus for firms to direct attention to their performance evaluation process, mentorship programs, and promotion criteria.

Fogarty et al. (2000) developed a job burnout construct for the accounting profession, proposing that it is a key mediator between role stressors and job outcomes. With a survey sample of 188 accounting firm personnel selected from AICPA membership records, they used structural equation modeling to analyze the impact of role stressors on job outcomes as mediated by the burnout construct. Findings supported the contention that burnout partially mediates the influence of role conflict, ambiguity and overload on performance, satisfaction and turnover intentions. The results support the explanatory power of job burnout and the effects of individual role stressors, which in isolation do not significantly influence job outcomes.

Viator (2001) conducted a study with a sample of 794 experienced employees (senior accountants, managers and senior managers) of large public accounting firms selected from AICPA membership records. He examined the association between mentoring (formal and informal), role stress (role conflict, role ambiguity and perceived environmental uncertainty), and job outcomes (job performance and turnover intentions). His survey data was analyzed using structural equation modeling. Results suggest that formal mentoring resulted in limited positive effects on the protégés, and informal mentoring reduced the role ambiguity of protégés by providing career development and psychosocial support. However, mentoring also resulted in higher conflict, perhaps due to the confessional nature of mentoring which might reveal divergent goals. Results did not support the assertion that formal mentoring was positively related to job performance or

negatively related to turnover intention. Informal mentoring was positively associated with job performance but not significantly related to turnover intentions (Viator 2001).

Fisher (2001), with a survey of 123 audit professionals from two offices of Big 4 firms in New Zealand, also studied the relationship between elements of role stress on job satisfaction and job performance. Fisher extends prior research by including the effects of Type-A behavior patterns as a moderating influence on the job outcome variables. Type-A personality traits, such as achievement striving, competitiveness, time-urgency, hostility, aggressiveness, irritability and impatience are based on Glass (1977) and were measured using two previously developed instruments, the Vickers Scale (Vickers 1975) and the Jenkins Activity Survey (Jenkins, Zyzanski, and Rosenman 1979).

Fisher hypothesized that those auditors exhibiting Type-A behavior patterns will intensify the negative relationship between elements of role stress and job performance and job satisfaction. However, the study's findings failed to support the moderating effects of the Type-A behavior pattern. Although moderating effects were not found, the results did illustrate that Type-A behavior pattern had a direct and positive influence on job performance and job satisfaction (Fisher 2001).

Sweeney and Summers (2002) studied the effect of the traditional "busy season" on burnout in a national public accounting firm. They surveyed employees and partners in 13 offices located in 7 states prior to and subsequent to the firm's traditional busy season, which takes place during the first calendar quarter of the year. Using structural equation modeling, their results demonstrated that significantly longer hours during the

busy season produced a direct and significant increase in role stressors and burnout with a high level of emotional exhaustion.

The following table summarizes empirical studies of role stress in a public accounting environment:

Insert Table 1 about here

Coping with Stress

There is significant research in response to the managerial concern about detrimental effects of job stress, including widely-publicized estimates of the cost to American industry and, according to Latack and Havlovic (1992), researchers investigating job stress have devoted considerable attention to coping measures.

Lazarus and Folkman (1984) define coping as “constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person.” Coping is thus viewed as a *process* approach to managing stressful situations, as opposed to a *trait* approach which refers to characteristics people have that dispose them to act in certain ways. Forms of coping are distinguished as being either *problem-focused* or *emotion-focused* (Folkman and Lazarus 1980).

Problem-focused coping manages or alters the conditions that bring about the specific problem causing distress, while emotion-based coping regulates the individual’s emotional response to the problem. Problem-focused coping is more likely to occur when

stress-causing conditions are amenable to change. Emotion-based coping is more likely when judgment suggests nothing can be done to modify a harmful, threatening or challenging environment (Folkman and Lazarus 1980).

Problem-focused coping uses strategies that define the problem, generate alternative solutions, evaluate costs and benefits of alternatives, and make a choice (Lazarus and Folkman 1984). Kahn et al. (1964) divide problem oriented strategies into two groups – those directed at dealing with the environment and those directed at one's self. Self oriented strategies consist of methods that help the person manage or solve the problem, such as learning new skills or developing new behavior.

Emotion-focused coping includes cognitive processes that diminish stress, including avoidance, minimization, distancing, selective attention, positive comparisons and wresting positive value from negative events (Lazarus and Folkman 1984). Certain cognitive forms of emotion-focused coping lead to a change in the way the stressful situation is encountered without changing the objective situation itself. This is also referred to as reappraisal. Lazarus and Folkman maintain that other emotion-focused strategies do not directly change the meaning of the event as in a reappraisal, but deal with the situation indirectly such as engaging in physical exercise, having a drink, or seeking emotional support.

Emotion-focused strategies are used to maintain hope and optimism, to deny facts and implications, and to act as if the outcome does not matter. Included in their list of coping resources, Lazarus and Folkman claim that health and energy are among the most pervasive in “many, if not all, stressful encounters.” Further, they assert that “the

important role played by physical well-being is particularly evident in enduring problems and in stressful transactions demanding extreme mobilization” (Lazarus and Folkman 1984). Figure 1 illustrates various methods used to cope with stress.

Insert Figure 1 about here.

Latack and Havlovic (1992) provide a conceptual evaluation framework for coping measures that includes both theoretical and organizational stress management perspectives. After examining and summarizing the coping literature, Latack and Havlovic note that much of the research relies on the theoretical work of Lazarus and Folkman. Definitions of coping converge around a person-environment transaction occurring when individuals encounter stressful situations. For example, Aldwin and Revenson (1987) define coping as encompassing cognitive and behavioral strategies used to manage a stressful situation (problem-focused coping) and the attendant negative emotions (emotion-focused coping). Similarly, Kahn et al. (1964) categorize coping styles as Class I Coping (task-based or problem-solving) or Class II Coping (emotional or anxiety reactions).

In their conceptual evaluation framework for coping measures, Latack and Havlovic conducted an extensive literature search on coping measures. They drew upon empirical studies and integrated them with the coping theory offered by Lazarus and Folkman. Empirical studies of job stress and coping measures conducted in the 1970s,

1980s and 1990s were summarized with a focus on coping processes (thoughts and actions) rather than coping styles (Latack and Havlovic 1992).

According to Latack and Havlovic (1992), most of the studies of coping dimensions employed by individuals involve on-the-job problem oriented behaviors including: obtaining more resources, working harder and longer, ignoring the situation, obtaining colleague support, delegation, putting callers on hold, planning and organizing, confronting role senders, and revising expectations. A limited number of studies examine emotion-focused dimensions, including: positive thinking, alcohol use, changing to a non-work activity, physical exercise, adopting good health habits, talking to one's spouse, and pursuit of a personal interest. However, none of these studies sampled professionals employed in public accounting firms.

Prior research suggests that a regular program of physical activity¹ promotes health and psychological well-being (Cumming and Hall 2004). The 1996 U.S. Surgeon General's report on physical activity indicated that (1) significant health benefits could be obtained through moderate amounts of physical activity, (2) physical activity relieves the symptoms of depression and anxiety and improves mood, and (3) physical activity improves health-related quality of life by enhancing psychological well-being (US Department of Health and Human Services 1996).

Health and well-being in the workplace have become common topics in the mainstream media in practitioner publications and in scholarly research journals (Danna

¹ For purposes of this study, the term physical activity is used synonymously with the term physical exercise. Physical exercise refers to a regular program of voluntary physical activity to include: walking, running, swimming, biking, aerobics, or resistance training. This is distinguished from other physical activity that might derive from something such as a physically demanding occupation.

and Griffin 1999). Health and well-being are important because of the deleterious effects on worker productivity and effectiveness, as well as possible carryover effects on an individual's personal life. Indeed, in a study performed for the Big 4 accounting firm, PricewaterhouseCoopers (PwC), work-life balance was cited as the principle predictor of turnover. Among other findings, the PwC study supports the view that the work-life balance scores are solidly in the negative range for all levels of employees (PwC 2004).

Conceptualizations of health and well-being vary, although generally definitions refer to the physical, mental, psychological and emotional state of a person (Danna and Griffin 1999). Danna and Griffin suggest the term *health* is generally applied in a medical context referring to physiological and psychological symptomology, whereas *well-being* tends to be a broader and more encompassing term that applies to the "whole person" (Warr 1987; 1990).

Diener (1984) uses the term "subjective well-being" to describe a person's overall experience in life and suggests that it reflects a person's self-described happiness. Subjective well-being, according to Diener, represents life satisfaction because it attempts to determine what leads to the positive evaluation of life or a global assessment of the quality of one's life guided by one's own criteria. The meaning of happiness is used to describe a preponderance of positive affect (e.g., being energetic, excited and enthused) over negative affect (e.g., anger, disgust, guilt, depression). Diener concludes that subjective well-being represents a pleasant emotional experience.

Danna and Griffin offer a framework guiding future studies of the workplace, with the goal of eventually creating a rigorous model or theory of health and well-being in the work place. The proposed framework is presented in Figure 2.

Insert Figure 2 about here.

The framework begins with the antecedents (work settings, personality traits, and occupational stress) influencing employee health and well-being. Dangerous work settings refer to hazardous industrial settings such as mining or the presence of dangerous chemicals or machinery. Similarly, personality traits include factors such as Type A behavior and locus of control, also not the subject of this study.

Occupational stress, however, encompasses the role stress variable of interest, along with well-being and consequences. Characteristic factors for those who work in public accounting include work overload, long hours, and travel. Glowinkowski and Cooper (1986) find that work overload can lead to lower self-esteem, the development of bad health habits such as excessive use of alcohol and/or tobacco and various physical and psychological problems. Many studies, as previously described, document the impact of organizational attributes typical to public accounting firms as sources of role ambiguity and role conflict (role stressors).

The relationship of one or more components of healthy lifestyle, including physical exercise, diet and other healthy habits, on well-being and subsequent job outcomes (job satisfaction, job performance and turnover intentions) has been studied for

a wide set of demographic and occupational groups (Daley and Parfitt 1996; Ryan and Frederick 1997; Ensel and Lin 2004; Pronk, Martinson, Kessler, Beck, Simon, and Wang 2004; Elavski, McAuley, Motl, Konopack, Marquez, Liang, Jerome, and Diener 2005; Goldsby, Kuratko, and Bishop 2005; Thøgersen-Ntoumani, Fox, and Ntoumanis 2005). The term “well-being” is used here interchangeably with psychological well-being (PWB). It is well documented that physical activity plays an important role in physical and psychological health (McAuley and Blissmer 2000). Exercise and physical activity appear to have a positive relationship to self-esteem, self-efficacy and well-being and a negative relationship to anxiety, stress and depression (McAuley 1994).

In a U.S. study, Gallup and Castelli (1989), found that Americans use exercise as a behavior to deal with mood disturbances, such as depression. The popular media regularly extol the benefits of exercise for mental health and very few reports, if any, suggest that physical activity is related at all with a decrement in well-being (Gauvin and Spence 1996). A considerable extant academic literature suggests that exercise is associated with an improved sense of PWB (McAuley, Blissmer, Marquez, Jerome, Kramer, and Katula 2000).

Regarding the psychological benefits of physical activity, the International Society of Sport Psychology Position Statement claims:

“Individual psychological benefits of physical activity include: positive changes in self-perceptions and well-being, improvement in self-confidence and awareness, positive changes in mood, relief of tension, relief of feelings such as depression and anxiety, influence on premenstrual tension, increased mental well-being, increased alertness, and clear thinking , increased energy and ability to cope with daily activity, increased enjoyment of exercise and social contacts, and

development of positive coping strategy” (International Society of Sport Psychology 1992, p.180).

PWB has both positive and negative emotional or affective states and consists of several components including emotional functioning and satisfaction with life (Diener 1984). Persons with high levels of PWB experience a preponderance of positive over negative affect and high levels of satisfaction with their life accomplishments and circumstances. Thus, PWB is associated with the absence of anxiety and depression, enjoyment, high levels of self-esteem, capacity to deal with daily stresses, and the absence of physical symptoms (Gauvin and Spence 1996).

Furthermore, various theoretical perspectives exist concerning the concept of subjective vitality, defined as “one’s conscious experience of possessing energy and aliveness” (Ryan and Frederick 1997, p.530). Ryan and Frederick contend that subjective vitality is influenced by somatic factors and that the experience of vitality should be facilitated by health and be more pronounced when basic bodily movements are robust and able to be effectively exercised. Conversely, health related stressors such as physical challenges, energy or disease, especially those that threaten one’s autonomy or effectiveness, should negatively affect subjective vitality.

This positive relationship of subjective vitality to one’s state of autonomy or effectiveness follows self-determination theory (Deci and Ryan 1985, 1991) suggesting that people are oriented to extend their capabilities in the form of intrinsic motivation and volitional activity. Factors that interfere with this motivation are negatively associated with general well-being meaning that situations supporting psychological autonomy and

competence enhance vitality, whereas those associated with a perception of being controlled, incompetent or unloved diminish vitality.

Other theoretical perspectives on vitality were examined in empirical studies that demonstrate systematic relationships between exercise, energy and various aspects of well-being. For example, Thayer (1987) links energy, made up of five adjectives (lively, energetic, active, vigorous and full of pep) and exercise, as operationalized by a walking program (compared to snacking) and Stewart, Hays, and Ware (1992) link feelings of energy to a variety of health states, developing a four-item scale that assessing energy versus fatigue that loaded positively on a factor representing current general health.

Empirical Studies of Healthy Lifestyle and Psychological Well-Being

The impact of healthy lifestyle, as operationalized through participation in physical activity or exercise, on various aspects of PWB has been studied and well-documented for populations of varying demographic and occupational characteristics. For example, McAuley et al. (2000) studied the impact of physical activity on subjective well-being in a sample of 174 older adults (mean age of 65.5 years). Results showed that the frequency of exercise participation was a significant predictor of improvement in satisfaction with life and that social relations associated with the exercise environment were related to increases in satisfaction with life and reductions in loneliness. Examining a younger population, Shephard, Volle, and Lavallee (1989) studied the effect of exercise on the academic performance of children and showed that enhanced involvement in physical activity can positively affect grade scores of students in primary schools.

Carter (1977) surveyed 216 adults of varied backgrounds and ages in the Washington DC area to determine whether an association exists between physical exercise and happiness. The questionnaire used in the study elicited type and quantity of exercise and a subjective measure of happiness. Carter's results indicated a positive coefficient of correlation between exercise scores and global happiness. The differences between mean exercise scores for individuals designated as very happy, pretty happy and not too happy were statistically significant. When the participants were separated between those maintaining an "optimum" level of physical fitness and those who did not, Carter found a significant association with happiness for those with the optimum levels of physical fitness.

Rhodes and Dunwoody (1980) studied exercise programs in an employee setting to identify physiological and attitudinal parameters affected by exercise regimens. Their study involved an experimental setting in a Canadian manufacturing company with 30 employees included in the treatment group and 14 employees in a control group. The treatment consisted of a six month regular exercise program with pre-test and post-test measurements made of physiological and psychological factors. Results indicated a favorable influence on many physiological factors as well as improvement in general work performance attitudes. Specifically, the employees in the treatment group experienced a decrease in the daily build-up of stress and tension, improved perceptions of their ability to cope with work challenges, increased alertness, increased production, increased enjoyment of work, and improved outlook toward the job.

Hawkins, Duncan, and McDermott (1988) obtained a sample of 126 elderly persons (age 65 years and over) to study the relationship between exercise, sleep and other good health practices on PWB (operationalized by freedom from depression, social satisfaction, fewer symptoms of aging, fewer physical disabilities, higher self-esteem and more internal locus of control). They reported that exercisers and those who had seven to eight hours of sleep experienced significantly better quality of life/health status. Later, Hawkins and Duncan (1991) conducted a follow-up analysis resulting in an exercise-only model, but that was still associated with improved PWB.

Stephens (1988) performed a 10-year longitudinal study of four large sample surveys ranging in size from 3,025 to 23,791 including individuals greater than ten years old. The objective of the study was to examine the association of physical activity and various aspects of mental health in U.S. and Canadian households. PWB was measured with instruments for affect, balance, depression, general well-being and health opinion. Level of physical activity was shown to be positively associated with general well-being, lower levels of anxiety, depression, and positive mood. The associations were particularly strong for women and people over 40 years of age. The study incorporated data on the comparative effects of recreation and housework suggesting that quality of time, not merely time performing physical activity, must be considered when explaining the psychological benefits of physical activity. The results were independent of socioeconomic status and physical health.

Moses, Steptoe, Mathews, and Edwards (1989) conducted an experiment with 109 sedentary adults who were randomly assigned to one of three levels of exercise

groups (high, moderate, attention-placebo) or to a control group. The high and moderate exercise groups both performed aerobic activities, but at differing levels, while the attention-placebo group performed strength, mobility and flexibility exercises. PWB was measured before and after a 10-week exercise program using mood and coping instruments. There were no significant differences before training between groups on any of the PWB measures. Psychological benefits, such as a coping ability, were noted for the moderate exercise group, but not for the other groups after the 10-week program. Similar benefits were noted for the moderate exercise group after a three month follow-up. The results support the view of the potential benefits of aerobic activity and that it need not be done at high levels to obtain psychological benefit.

Rosenfeld, Tenenbaum, Ruskins, and Halfon (1989) conducted a study from the pharmaceutical industry using a sample of workers to examine the effects of a physical activity program compared to a social activity program. Measures of productivity and perceived workload, fatigue, and efficiency were compared between workers exposed to a systematic physical exercise program and workers subjected to a social activity program. The study included 522 workers in two pharmaceutical factories and took place over a seven month period. The workers were divided into two groups: one exposed to a 15-minute physical activity regimen before lunch and the other exposed to a social activity during the same time frame. Perceived workload, fatigue, efficiency, and actual rates of productivity were measured before and after the experimental period. Upon completion, productivity rates remained the same for both groups. However, perceptions of efficiency increased and perceptions of fatigue decreased significantly for the physical

activity group, even though perceptions of workload increased. The results imply that perceived job performance improves for individuals exposed to physical activity.

Norris, Carroll, and Cochrane (1990) conducted an experiment with 77 male police officers between the ages of 20 and 50 from the United Kingdom to determine the effects of exercise on life stress and PWB. It was generally presumed by the investigators that police work was stressful. The participants were assigned (nonrandom) to aerobic, anaerobic or control groups for 10 weeks and PWB was measured with instruments assessing job stress, life quality and general health. After completion of the 10-week period, the aerobic and anaerobic exercise groups had significantly higher life quality and general health than the control group, providing support for the positive effects of exercise on well-being. The data suggest that even a fairly brief aerobic training program and, to a lesser extent, an anaerobic program of similar duration, offer substantial physical and psychological benefits (Norris et al. 1990).

McAuley (1994) reviewed extant research concerning the relationship of physical activity to psychosocial outcomes. Specifically, he documented reviews of 23 published research studies that examined the relationship of exercise to PWB. The overall conclusion from McAuley's collective findings was that the majority of the studies (69 percent) suggested that physical activity is positively associated with PWB.

Likewise, Gauvin and Spence (1996) reviewed the literature on physical activity and PWB, which included more than 90 studies on the relationship of physical activity to various components of PWB. The focus of the studies varied widely as to the target populations and measured outcomes. However, the conclusions generally found that

physical activity has a positive association with various components of PWB, especially feelings of energy/vigor and self-efficacy.

Daley and Parfitt (1996) studied mood states, physical well-being, job satisfaction and absenteeism using a sample of 263 headquarters office employees of a leading British food retail company. The researchers hypothesized that membership in a worksite health and fitness club would lead to better levels of physical fitness, physical activity, mood states, job satisfaction and absenteeism. As such, the dichotomous independent variable was membership (or being on a waiting list for membership) in the company's on-site health club versus non-membership. Their findings suggested that members of the club have better psychological mood states and physical well-being than non-members and those on the waiting list, and that club members were more satisfied with their jobs and demonstrated fewer days absent from work than non-members and those on the waiting list.

Ryan and Frederick (1997) examined the concept of "subjective vitality," described as a positive feeling of aliveness (i.e. being "invigorated in certain circumstances or certain events," p. 530) and energy, through six studies which demonstrate an association between subjective vitality and psychological well-being. They draw upon self-determination theory suggesting that situations supporting psychological autonomy and competence should enhance vitality, whereas those associated with a perception of being controlled, incompetent or unloved should diminish vitality. Their studies included groups involved in physical activities and other healthy lifestyle programs, such as Tae Kwan Do and aerobics, pain clinics and treatment of

morbid obesity. Results showed that subjective vitality was significantly related to somatic issues and reactions to physical concerns. Vitality was rated higher by participants reporting better body functioning and physical self-efficacy and fewer health threatening symptoms. Thus subjective vitality was related to both physical and psychological well-being.

Ensel and Lin (2004) conducted a study using face-to-face interviews with 1,261 individuals 18 years of age and older in an upstate New York community to investigate whether individuals who exercise show higher levels of well-being than those who do not exercise. Results indicated that physical fitness was directly associated with decreased psychological and physical distress. These findings held up when stressors, such as prior life events or physical illness, and psychosocial resources were included in the model. Physical fitness served to buffer the effects of the stressors on both psychological and physical distress. The study demonstrated that exercise serves to promote psychological and physical well-being and indirectly increases one's ability to cope with distress by increasing the levels of psychological resources used in reaction to the stress and strain of daily life.

Pronk et al.(2004) examined the association between work performance and modifiable health risks (physical activity, cardio respiratory fitness and obesity) in a survey of 683 subjects. Their subjects were drawn from four sampling frames including: three corporate lists of primary subscribers from managed care health plans and from active employees at American Airlines. Results of ordinary least squares regression analyses indicated that higher levels of physical activity are related to improved work

quality and overall job performance. Higher cardio respiratory fitness is associated with reduced decrements in quantity of work performed and a reduction in extra effort exerted to perform the work. Finally, obesity related to more difficulty in getting along with coworkers; and severe obesity correlated to higher absenteeism. The authors concluded that healthy lifestyle significantly impacted employee work performance.

Elavski et al.(2005) studied a theoretical model of the mediating affects of positive psychological variables (positive affect, self-efficacy, and self-esteem) on the relationship between physical activity and global quality of life (satisfaction with life). The validity of the model was tested cross-sectionally and longitudinally. The study was conducted with 174 sedentary adults with ages ranging from 60 to 75 years. Subjects participated in a six month controlled exercise program and follow-up programs were conducted after one and five years. Findings after one-year were that more physically active participants had significantly higher levels of self-efficacy, physical self-esteem, and more positive affect. In turn, self-efficacy and affect were associated with higher satisfaction with life. A similar pattern was noted after the five-year follow-up.

Goldsby et al.(2005) examined the association between exercise and the attainment of personal and professional goals. They studied the effects of running and weightlifting regimens of 366 small business owners on company sales and the entrepreneur's extrinsic (financial rewards and family security) and intrinsic (personal satisfaction, independence/autonomy) goals. The findings supported their contention that entrepreneurs with a running regimen had a higher sales volume and higher achievement of both extrinsic and intrinsic personal goals. Subjects who participated in a weightlifting

program also had a positive relationship to their extrinsic and intrinsic personal goals, but no significant relationship to sales volume was evident. These results suggest that exercise helps entrepreneurs in their goal attainment.

Thøgersen-Ntoumani et al.(2005) examined the relationship between exercise participation and three components of mental well-being (physical self, work-related and global) in a sample of 312 employees of an information technology company. A cross-sectional survey was administered and analyzed using a structural equation model. The authors found support for an exercise and well-being model in which exercise is directly and indirectly related to well-being in various facets of employees' lives. The researchers found direct paths from exercise to physical self (physical self-worth and physical satisfaction) and enthusiasm at work and indirect paths between exercise and global well-being through measures of physical self and enthusiasm at work.

The following table summarizes empirical studies of healthy lifestyle and psychological well-being:

Insert Table 2 about here

As the literature suggests, it is well documented that physical activity plays an important role in physical and psychological with exercise and physical activity appearing to have a positive relationship to self-esteem, self-efficacy and well-being and a negative relationship to anxiety, stress and depression (McAuley 1994). This study explored the relationship of healthy lifestyle, including physical exercise, diet and other healthy habits,

on well-being and subsequent job outcomes (job satisfaction, job performance and turnover intentions) for public accounting professionals. The term “well-being” is used here interchangeably with psychological well-being (PWB).

CHAPTER III

HYPOTHESES DEVELOPMENT

Role Stress and Burnout

Many accounting researchers have studied the connection between various role stressors and job outcomes in a public accounting environment (e.g., Sorenson and Sorenson 1974; Senatra 1980; Gaertner and Ruhe 1981; Alderman and Deitrick 1982; Choo 1986; Senatra 1988; Bamber et al. 1989; Collins and Killough 1989; Rebele and Michaels 1990; Collins and Killough 1992; Collins 1993; Fisher 2001; Sweeney and Summers 2002). Generally, role stressors have been divided into three dimensions – ambiguity, conflict and overload. Role ambiguity occurs when an individual lacks adequate information to accomplish his/her role in the organization (Kahn et al. 1964). In a public accounting environment, this leads to uncertainty about the expectations of both supervisors and clients (Senatra 1980). Role conflict arises when individuals are faced with two or more sets of pressures or expectations such that compliance with one makes compliance with the other difficult or impossible (Kahn et al. 1964). On the other hand, role overload occurs when an employee is required to perform a number of tasks which individually may be reasonable but in total may be difficult to perform in a given amount of time (Schick et al. 1990).

According to Fogarty et al. (2000), the considerable extant research concerning the effects of the role stressor constructs (ambiguity, conflict and overload) among accounting professionals has mis-specified their effects as direct antecedents of job

outcomes. Fogarty et al. assert that job burnout, to which role stressors are antecedent variables, captures the joint effects of role stress components while adding emotional exhaustion, reduced personal accomplishment and depersonalization. Drawing upon the occupational psychology literature, the authors demonstrate that the cumulative effects of the individual role stressor constructs must be considered because of the possibility that no one individual construct by itself is sufficient to influence job outcomes. That is, since all three role stressors are present in differing strengths and combinations, they should be considered individually and in the aggregate. The results provide support for burnout as a key mediator of the influence of role stressors on job outcomes ranging from partial to full mediation. Danna and Griffin (1999) present well-being at the center of the framework and the construct is viewed as comprising various life and non-work satisfaction/dissatisfactions, work-related satisfaction/dissatisfactions and general health. Therefore, based on the previous discussion, using Fogarty's burnout construct, and Danna and Griffin's framework, the following hypotheses are proposed:

- H1a:** High levels of role ambiguity will be positively associated with job burnout.
- H1b:** High levels of role conflict will be positively associated with job burnout.
- H1c:** High levels of role overload will be positively associated with job burnout.
- H2:** High levels of job burnout will be negatively associated with psychological well-being.

Healthy Lifestyle as a Mitigating Influence on Role Stress and Job Burnout

In addition to examining the effects of role stress and the impact of burnout on psychological well-being, the present study extends this line of research by introducing healthy lifestyle as an additional mitigating influence on job outcomes (job satisfaction, job performance and turnover intentions) through its impact on vitality and psychological well-being. Specifically, this study proposes the introduction of the healthy lifestyle construct as a positive influence on a person's psychological well-being through its impact on the person's vitality and as a mitigating influence on the negative effects of burnout experienced by auditors in a public accounting environment. Healthy lifestyle factors are composed primarily of items that measure one's physical exercise regimen but also consider other factors that are generally thought to contribute to good health. For example, healthy diet, good sleep habits and eschewing tobacco and excessive amounts of alcohol contribute to good health. The benefits of exercise as a positive contributing factor to psychological well-being are documented and suggest that participation in a regular physical exercise regimen is associated with an improved sense of psychological well-being (e.g., Rhodes and Dunwoody 1980; Rosenfeld et al. 1989; McAuley 1994; Daley and Parfitt 1996; Gauvin and Spence 1996; McAuley and Blissmer 2000; McAuley et al. 2000; Maltby and Day 2001; Elavski et al. 2005; Thøgersen-Ntoumani et al. 2005).

Ryan and Frederick (1997) describe vitality as the positive feeling of aliveness and energy. Feeling "alive" is referred to as being invigorated or possessing enthusiasm and spirit in certain circumstances or following certain events, as opposed to feeling "dead" or drained. Ryan and Frederick's findings suggest that subjective vitality reflects

well-being which is positively associated with self motivation. Vitality is conceptualized as the state of having positive energy and feeling in control of one's self. Individuals who are high in vitality report being alert and energized. Bostic et al. (2000) describe vitality as a feeling of energy from within and not from specific threats in the environment.

Vitality thus differs from manic obsession in that it represents a feeling of being alive and energized rather than being driven or compelled. Ryan and Frederick demonstrate in six studies that there is positive association between subjective vitality and somatic factors and psychological well-being, i.e. the experience of vitality is facilitated by a healthy organism or more evident when bodily functions are more robust and fully exercised. It follows then that a healthy lifestyle being under one's own control, if effectively operationalized, should contribute to vitality and improved psychological well-being.

Job satisfaction is defined by Locke (1976) as the "pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences (p. 1,300)." The relationship between exercise and positive affect suggest that participation in a physical exercise regimen is related to positive mood states and increased job satisfaction (Daley and Parfitt 1996; Goldsby et al. 2005; Thøgersen-Ntoumani et al. 2005) and perceptions of better job performance (Rhodes and Dunwoody 1980; Rosenfeld et al. 1989; Pronk et al. 2004; Goldsby et al. 2005).

Based on these arguments and the framework of Danna and Griffin (1999), the following hypotheses are proposed:

H3: Healthy lifestyle will be positively associated with vitality.

H4: Vitality will be positively associated with psychological well-being.

- H5a:** Psychological well-being will be positively associated with job satisfaction.
- H5b:** Psychological well-being will be positively associated with job performance.
- H5c:** Psychological well-being will be negatively associated with turnover intentions.

The theoretical model is presented in Figure 3.

Insert Figure 3 about here.

CHAPTER IV

RESEARCH METHODOLOGY

The Sample

The participants in this study were employees and partners in a large public accounting firm with offices located throughout the United States. At the time of the study, the firm had 7,354 partners and staff persons. Subjects for the study consisted of all audit professionals in the firm and at all levels in the firm's hierarchy including associates, senior associates, supervisors, managers, directors, and partners. Auditors employed by the firm at the time of the study included 2,759 professionals of whom 1,026 or 37.8% responded.

The Survey

A survey questionnaire, included in the Appendix, was used to collect the data for this study. The survey instrument was administered via the internet using the firm's e-mail system. A link to the survey instrument was provided in an e-mail message sent by the Vice President for Human Resources, and the responses were collected anonymously using a web-based survey collection company. Web based surveys are suited for behavioral accounting research (Bryant, Hunton, and Stone 2004). Advantages of online data collection include: global reach, reduced response time, lowered cost, ease of data entry, recipient acceptance, and the ability to analyze respondent versus non-respondent characteristics (e.g., Beeler, Franz, and Wier 2001; Grannello and Wheaton 2004; Evans and Mathur 2005).

Beeler et al.(2001) demonstrated the use of the internet to quickly access a large number of participants at low cost. However, email communications might receive less attention than solicitations though the U.S. mail (Bryant et al. 2004). As noted earlier, to counter the potential of a low response rate, this study has support of the subject firm's management team and the senior vice president of human resources, who sent a firm-wide message encouraging participation. Results of pilot testing revealed that 15 minutes would be adequate time for participants to complete the survey, thus respondents were not challenged with a significant time commitment.

Beeler and Hunton (2002) illustrate how internet-based technology and delivering a survey instrument on the Web allowed distribution to a geographically disbursed audience. This methodology provides considerable flexibility to the audience regarding the location and timing of participation. The present study exhibited these same advantages since the firm has offices throughout the United States and each audit partner and staff member is issued a personal laptop computer. Additionally, all auditors receive computer training to perform their role in the firm, thus overcoming any potential disadvantages that might be caused by the lack of technological expertise (Bryant et al. 2004). Privacy was assured because of built-in controls by the web-based survey collection company. This same company was concurrently used by the subject firm for other needs, thus, respondents had familiarity with the procedure for the survey.

Bryant et al. (2004) claim that the potential large sample size from internet-based surveys will increase statistical power and reduce beta error sufficiently to compensate for the increased noise that might result from decreased control over data collection (e.g.

participating in a distracting environment such as in a coffee shop or while watching television). The large response obtained in this study confirmed that contention.

Use of the internet method of data collection should decrease demand effects caused by researcher presence during survey administration since it eliminates face-to-face contact between the subject and the researcher (Bryant et al. 2004). It therefore seems reasonable that the naturalism of the internet setting, over which participants control their environment, may increase validity by decreasing demand effects and other researcher influences.

Since measurement of all of the study's variables was to be obtained from the same source or rater, design of the research instrument was a critical consideration. Using one source of data for predictor and criterion variables represents a possible source of common method bias, i.e., variance attributable to the measurement method rather than to the constructs the measures represent (Podsakoff, MacKenzie, Lee, and Podsakoff 2003).

In order to avoid the potential of common method bias, certain specific design procedures were incorporated into the study, as suggested by Podsakoff et al. (2003). These included: (1) using an anonymous format to obtain the data and encouraging the participants to answer honestly, explaining that there were no "right or wrong answers," (2) varying the question and response formats, (3) varying presentation of the predictor and criterion variables, thereby counterbalancing question order to control for priming effects or other biases related to question context, (4) avoiding ambiguous or unfamiliar terms and keeping questions simple, specific and concise, and (5) employing widely used

and previously validated scale items to measure both the predictor and the criterion variables thereby reducing possible measurement error caused by item construction.

Measured Variables

Role Conflict (RC) and Role Ambiguity (RA). Role conflict and role ambiguity were measured using subsets of instruments developed by Rizzo et al. (1970). These measures are commonly used in studies of role conflict and role ambiguity and the psychometric properties of both measures have been closely examined and are widely accepted (Jackson and Schuler 1985). Measures for the current study consist of five items drawn from Rizzo to measure role ambiguity and three items to measure role conflict. These subsets have been used successfully by Almer and Kaplan (2002) and Fogarty et al. (2000). Similar to results obtained in earlier studies, Cronbach alpha reliability coefficients of 0.74 for role ambiguity and 0.70 for role conflict were obtained in the present study.

Role Overload (RO). Role overload instruments do not have the same levels of acceptance and measurement consistency since the qualitative aspects of the condition varies across occupations (Newman and Keenan 1987). The present study used a three-item measure developed by Beehr (1976) and used by Almer and Kaplan (2002) with a Cronbach alpha of 0.67 and by Fogarty et al. (2000) with a Cronbach alpha of 0.86. For the present study, a Cronbach alpha of 0.69 was obtained, which is within the range of previous studies.

Job Burnout (JB). Drawing from Almer and Kaplan (2002), the three burnout dimensions (emotional exhaustion, reduced personal accomplishment and

depersonalization) were measured with subsets of scales used in the Maslach Burnout Inventory (Maslach 1982). Almer and Kaplan's results demonstrated high reliability for these measures. Similar results were obtained in the current study with an overall Cronbach alpha score of 0.82 for the burnout construct.

Healthy Lifestyle (HL). Healthy lifestyle was measured using 10 items derived from previous studies in the health and psychology literature. Six items were drawn from the Exercise Orientation Scale (EOQ) developed by Yates, Edman, Crago, Crowell, and Zimmerman (1999). The EOQ was developed to assess exercise motivation and perception in a normal population. The EOQ includes 27 items with a total alpha value of 0.92 and loaded on six factors using principal components analysis. The six items used in the present study loaded on a factor labeled, "self-control," and had an alpha value of 0.87. Three items measuring life style behaviors (quality of sleep, smoking, and alcohol consumption) were drawn from Daley and Parfitt (1996). Life-style behaviors are included because they are thought to be closely related to physical fitness and/or exercise (Sinyor, Brown, Rostant, and Seraganian 1982; Shephard 1986). One item, measuring a healthy diet was drawn from an instrument developed by Walker et al. (1987) to measure health-promoting lifestyle. For the present study, a Cronbach alpha score of 0.73 was obtained for the overall measure of healthy lifestyle.

Vitality (VIT). Vitality was measured using the six item instrument developed by Ryan and Frederick (1997) and modified by Bostic et al. (2000). The Ryan and Frederick scale demonstrated high reliability and showed positive correlations with self-actualization, self-esteem, and satisfaction with life. Likewise, it demonstrated negative correlations

with depression, negative affect and anxiety (Ryan and Frederick 1997). Bostic et al. (2000) used structural equation modeling to test the seven item scale on two large samples, with 263 participants in one and 268 participants in the second, concluding that a final model including six items was preferable. Both data sets exhibited strong reliability. One negatively worded item was eliminated from the Ryan and Frederick scale for the structural equation model to better fit the data, suggesting that the item does not perform well in a unidimensional measure of vitality (Bostic et al. 2000). A Cronbach alpha reliability coefficient of 0.87 was obtained in the present study.

Psychological Well-Being (PWB). Psychological well-being was measured by the Satisfaction With Life Scale (Diener, Emmons, Larsen, and Griffen 1985). The Satisfaction With Life Scale (SWLS) is a five-item measure of global satisfaction that asks participants to rate satisfaction with their lives. Life satisfaction refers to a judgmental process in which individuals assess the quality of their lives, as a whole, using their own set of criteria. The items included in the SWLS are global, rather than specific, in nature. The SWLS does not assess satisfaction with specific life domains such as health or finances but allows the subject to integrate and weigh these domains in any manner they choose using their own subjective criteria. Diener et al. (1985) reported high reliability for the scale. Later, Pavot and Diener (1993) conducted a review of studies using this scale and reported coefficient alpha reliability scores ranging from 0.79 to 0.89. Consistent with previous studies, a Cronbach alpha reliability coefficient of 0.89 was obtained in the present study.

Job Satisfaction (JS). Job satisfaction is measured using three of four items from Hoppock's (1935) scale which is a global measure of job satisfaction. The scale was validated by McNichols, Stahl, and Manley (1978) who examined the measure with 29,000 subjects over four populations and it has been used successfully in other accounting studies (Rebele, Michaels, and Wachter 1996; Almer and Kaplan 2002; Parker and Kohlmeyer 2005). The Cronbach alpha score for the present study was 0.87.

Job Performance (JP). A standard measure of auditor performance has not yet been established in the accounting literature (Fisher 2001). The present study adapts an instrument from Choo (1986) that was rigorously developed and tested (Fisher 2001). Choo's instrument was devised in consultation with five personnel partners from national accounting firms. Fisher (2001) tested the instrument and found a strong positive correlation between self-rated scores and supervisor-rated scores. In the present study, like Fisher, weightings for the 12-item instrument were calculated for the organizational levels of the participants, after consulting with human resource officials and audit partners from the firm participating in the study. This procedure considered differences in the importance of each item, both within and across auditor positions. However, a t-test comparison of the weighted and non-weighted measures revealed no significant difference in the outcome. For the present study, a Cronbach alpha coefficient of 0.84 was calculated for the job performance measure.

Self-rated performance measures have been used in previous research to avoid the problem of "halo-error" associated with superiors' ratings (Brownell 1982). Brownell (1982, p. 17) describes "halo error" as the tendency to evaluate "globally" or, in other

words, “to evaluate on only one cognitive dimension.” Although self-rating performance measures have been criticized because they may lead to leniency in responses (Henemon 1974), as long as such bias is not systematic with respect to the independent variables, a study’s results should be unaffected (Brownell and McInnes 1986).

Turnover Intentions (TI). The turnover intentions measure was adapted from a four-item measure developed by Chatman (1991). This measure has found wide acceptance in the accounting literature and other disciplines. Chatman’s principal components analysis of the measure yielded a single factor representing intent to leave. The Cronbach alpha coefficient for the turnover measure was 0.74 in the present study.

Data Analysis

Structural Equation Modeling (SEM) was used to analyze the data obtained from the survey to test model fit and conduct hypotheses testing. According to Schumacker and Lomax (2004), SEM uses various types of models to depict relationships among variables with the ultimate goal of providing a quantitative test of a theoretical model. More specifically, theoretical models can be tested in SEM that hypothesize how sets of variables define constructs related to each other. SEM is designed to analyze theoretical constructs not directly visible in themselves. Additionally, a clear advantage of SEM is evidenced by its *a priori* approach with analyses that yield accurate information about the data (Bostic et al. 2000; Raykov and Marcoulides 2000).

Variables used in SEM, whether they are independent or dependent, are of two types – *latent variables* and *observed variables*. Latent variables, also known as constructs or factors, are not directly observable or measurable. They are indirectly

observed or inferred from measured variables, such as survey questions. Observed variables are also referred to as indicator or manifest variables and are used to define a latent construct. For example, in the present study participants are asked 10 questions about their exercise regimen, diet, sleep pattern, and consumption habits. These 10 questions, measured on a *Likert* scale, help to define the latent variable labeled *healthy lifestyle*. Each latent construct in the model used for this study is linked to multiple measures (at least three survey questions) through a factor analytical measurement model and each measure is associated with only one latent construct. The structural equation model is designed to estimate the strength and direction of the hypothesized paths between the latent constructs in the model.

In the present study, role stressors (conflict, ambiguity and overload) and healthy lifestyle represent exogenous variables. Job burnout, vitality, psychological well-being, and job outcomes (performance, satisfaction and turnover intentions) constitute endogenous variables. Schumaker and Lomax (2004) cite several reasons for conducting SEM. First, multiple observed variables are used to better understand the area of scientific inquiry. Basic statistical methods, such as bivariate correlations, only use a limited number of variables and are not sufficient for examining a complex and sophisticated theoretical model such as that used in the present study. Second, measurement error has become a major issue in research and SEM explicitly takes measurement error into account when statistically analyzing data. Other methods treat measurement error and statistical analysis of data separately. Third, SEM has matured

over the past three decades to allow more advanced models to assess group differences, multi-level analysis, and the inclusion of interactive terms.

To test the hypothesized model presented in Figure 3, the two-step structural equation procedure recommended by Anderson and Gerbing (1988), was employed. The two-step approach allows for tests of the significance of measurement error in the measurement model followed by an assessment of the structural model. The approach also allows comparisons of the formal model of interest with the next most likely theoretical alternatives through sequential Chi-square difference tests. The two-step structural equation modeling procedure has been used frequently in accounting studies with successful results (e.g., Gregson 1992a; Gregson 1992b; Dalton, Hill, and Ramsay 1997; Iyer, Bamber, and Barefield 1997; De Ruyter and Wetzels 1999; Fogarty et al. 2000; Bamber and Iyer 2002).

The hypothesized structural model was tested using LISREL 8.72 (Jöreskog and Sörbom 2005) with maximum likelihood estimation of the structural equation analysis and which provides a simultaneous test of the study's hypotheses. The advantages of LISREL for accounting researchers, such as computing measurement error and assessing the comparable fit of competing models by use of the chi-square statistic, is discussed in Gregson (1992b).

Structural equation analysis requires large sample sizes (McCallum, Browne, and Sugawara 1996). To test adequacy of the sample size, the statistical power of the structural equation model was evaluated using the tables included in MacCallum et al. (1996). The probability of a Type II error denoted as β is the probability of not rejecting

an incorrect model. Statistical power, which is equal to $1 - \beta$ error, is the long-run likelihood of correctly rejecting the null hypothesis (Cohen 1969/1988; Kraemer and Thiemann 1987; Cohen 1992). Results of the test indicated statistical power exceeding 0.99.

CHAPTER V

ANALYSIS AND RESULTS

Descriptive statistics

A demographic assessment of the sample revealed that respondents consisted of 1,026 audit professionals or 37.8% of the auditors employed by the firm. Table 3 summarizes the characteristics of the survey respondents.

Insert Table 3 about here.

A slight majority of the respondents were male (49.7 percent vs. 49.0 percent female), 59 percent were supervisors or below and 64.4% were under age 35. Respondents were employed by the firm for periods of less than one year to 47 years with a mean tenure of 6.53 years. To test for non-response bias, a comparison of early and late responses was performed (Oppenheim 1966). No significant differences were noted in any of the variables used in the study.

Tables 4, 5 and 6 summarize key descriptive statistics for the constructs under study.

Insert Tables 4, 5 and 6 about here.

Table 4 presents mean values for the variables in this study. The scale for each variable employed anchor points allowing for responses from one to seven (e.g., from strongly disagree to strongly agree) giving a scale median of four. Each of the variable means significantly differed from the scale median ($p < .01$). An examination of table 4 reveals that the mean values of role stressors (RA, RC and RO) for auditors participating in the study are below scale medians. The mean value for job burnout (JB) is below the scale mean by less than one standard deviation. Fogarty (2000) reports that central tendencies in this range are common for occupations prone to burnout. Mean values for healthy lifestyle (HL), vitality (VIT), psychological well-being (PWB), and job outcomes (JS, JP and TI) are above scale medians.

Each of the measures used in the study has acceptable reliability as depicted on the diagonal in Table 6. Cronbach's coefficient alpha for reliability, the generally accepted measure of internal consistency, exceeds 0.69 for each measure used in the study, suggesting that over 69% of the variance in the measures can be attributed to a systematic source. Five of the constructs used have Cronbach alpha scores above 0.80, which is considered high reliability and the remaining five constructs exceed 0.69, considered to be at least marginally acceptable (Gliner and Morgan 2000).

A correlation matrix of the item means for each construct presented in Table 6 depicts results generally as expected. Except for the lack of significant correlation between role overload (RO) and healthy lifestyle (HL), all correlations are significant and in the direction expected. Additionally, Table 6 reveals significant positive correlation between the role stressor variables (RA, RC and RO) both among themselves and with

the burnout construct (JB). Conversely, there is significant negative correlation of the role stressors [ambiguity and conflict (RA and RC)] and job burnout (JB), with healthy lifestyle (HL), vitality (VIT) and the job outcomes of satisfaction (JS) and performance (JP). Turnover intentions (TI) correlate positively with the role stressors and job burnout, and negatively with all of the other variables. A correlation matrix for the individual indicators used in the study is available.

Confirmatory Factor Analysis

To confirm the factor structure of the indicators used for the latent variables, confirmatory factor analysis (CFA) was performed. CFA assesses whether the items in a given scale represent the same latent factor (Anderson and Gerbing 1988).

Following Bollen's (1989) recommendation to interpret multiple indices of fit, the question is addressed by evaluating the overall goodness of fit indices. Six criteria were used for assessing model fit: (1) the comparative fit index (CFI), (2) the goodness of fit index (GFI), (3) the normed fit index (NFI), (4) the non-normed fit index (NNFI), (5) the standardized Root Mean Square Residual (RMR), and (6) the Root Mean Square Error of Approximation (RMSEA).

The GFI is an indicator of the relevant amount of variances and covariances accounted for by the model and thus shows how closely the model comes to perfectly representing the observed covariance matrix. The CFI, NFI and NNFI show how much better the model fits compared to a baseline model or independence model in which all of the observed variables are uncorrelated. Values of each of these fit indices range between

0 and 1, with values > 0.90 representing acceptable fit (Diamantopoulos and Siguaaw 2000).

The RMR represents the summary average value of the standardized elements in the residual matrix, with values below 0.05 representing acceptable fit. The RMSEA, according to Diamantopoulos and Siguaaw 2000, is one of the most informative fit indices. It focuses on the discrepancy between the population covariance matrix (Σ) and the model-based covariance matrix [$\Sigma(\theta)$], i.e. if the population covariance matrix were to be exactly reproduced in the model, $\Sigma = \Sigma(\theta)$. The RMSEA considers model complexity by focusing on the discrepancy of Σ and $\Sigma(\theta)$ per degree of freedom. The RMSEA thus shows “how well would the model, with unknown but optimally chosen parameter values, fit the population covariance matrix if it were available” (Browne and Cudeck 1993 pp. 137-138). According to Browne and Cudeck (1993) and McCallum et al. (1996), values less than 0.05 are indicative of good fit, between 0.05 and 0.08 of reasonable fit, between 0.08 and 0.10 of mediocre fit and > 0.10 of poor fit.

Table 7 provides the results of the CFA. The measurement model is shown to have acceptable fit.

Insert Table 7 about here.

Most of the fit indices met acceptable thresholds for a reasonable fitting model (CFI = 0.94, GFI = 0.77, NFI = 0.92, NNFI = 0.93, RMR = 0.16 and RMSEA = 0.07). Only the

GFI and the RMR did not meet generally acceptable fit standards. On whole, however, the measurement model was deemed to possess an acceptable fit.

In addition to evaluating the overall fit of the measurement model, validity and reliability were evaluated. Supporting convergent validity of the measures, 56 of the total 59 indicators significantly related to their respective constructs at the $p < .001$ level. Composite reliabilities for each of the constructs are presented in Table 7. All of the composite reliabilities equal or exceed the recommended value of 0.60 (Bagozzi and Yi 1988). Hair, Anderson, Tatham, and Black (1998) recommend that variance-extracted values exceed 0.50. Table 7 shows that four of the ten constructs have variance-extracted values exceeding the guideline.

Correlations of the latent variables were examined in the measurement model to determine discriminant validity. High correlation (0.90) was noted between role conflict (RC) and role overload (RO), suggesting a lack of discriminant validity between these constructs. This was considered later in testing the structural model.

Structural Model

This study was designed to respond to the research question: Will a healthy lifestyle mediate the detrimental effects of role stressors on job outcomes through its impact on psychological well-being for auditors employed in public accounting? The hypothesized model represents a fully-mediated model, i.e. the exogenous variables (role ambiguity, role conflict, role overload and healthy lifestyle) are hypothesized to indirectly affect the job outcome variables (job satisfaction, job performance and turnover intentions) through intervening or mediator variables (job burnout, vitality and

psychological well-being). The mediator variables thus have a dual role as both a predictor and a criterion (Kline 2005). These variables are hypothesized to transmit the causal effects of the exogenous variables representing role stressors and healthy lifestyle on job outcomes. Thus the role stressor variables were expected to affect job outcomes through their affect on job burnout and psychological well-being. As well, healthy lifestyle was expected to affect job outcomes through its effect on vitality and psychological well-being.

The chi-square values, associated degrees of freedom, goodness of fit indices and residual fit indices are presented in Table 8.

Insert Table 8 about here.

As shown in Table 8, the hypothesized model demonstrates adequate fit for most of the goodness of fit measures. All of the goodness of fit and residual fit indices, except for GFI and RMR, meet acceptable standards for good fit (CFI = 0.93, GFI = 0.75, NFI = 0.91, NNFI = 0.92, RMR = 0.14 and RMSEA = 0.07).

Because of high correlation noted in the confirmatory factor analysis between role conflict and role overload (RC and RO), additional testing was performed using an alternate nested model. A model is nested when the parameters estimated by it are a subset of a prior model. Anderson and Gerbing (1988) recommend testing for discriminant validity by fixing the correlation at 1.0 for pairs of constructs with high correlations, and using a Chi-square difference test to compare the constrained and

unconstrained models. This test was performed with role conflict and role overload to determine if these factors should be combined. The constrained model had a significantly poorer fit compared to the unconstrained model (see Table 8), as indicated by a higher chi-square value ($p < .001$), thus supporting discriminant validity of the constructs.

Tests of Hypotheses

The hypotheses were tested using the coefficient values of paths in the structural model. Figure 4 shows the path coefficients for the hypothesized model and Table 9 summarizes the coefficient values, t-statistics, p -values, hypothesized and observed coefficient signs for all paths.

Insert Figure 4 and Table 9 about here.

Generally, the hypotheses proposed in the research model are supported by the data with path coefficients at highly significant levels and in the predicted directions.

Hypotheses 1a, 1b and 1c predict that high levels of role ambiguity, role conflict and role overload will be positively associated with job burnout. Although no significant effects were observed for role conflict associated with job burnout, the remaining role stressors (role ambiguity and role overload) were found to be significantly associated with the job burnout construct in a positive direction. Role ambiguity has a significant positive latent coefficient of .21 (t-value = 3.16, p -value < .001) and role overload has a significant positive coefficient of .87 (t-value = 4.28, p -value < .001).

Hypothesis 2 predicts that high levels of job burnout will be negatively associated with psychological well-being. The data support this hypothesis with a $JB \rightarrow PWB$ path coefficient of -0.13 ($t\text{-value} = -4.25, p\text{-value} < .001$).

Hypothesis 3 predicts a positive $HL \rightarrow VIT$ path in the model (i.e., healthy lifestyle will be positively associated with vitality). Further, hypothesis 4 predicts that vitality will mediate the positive relationship of healthy lifestyle on psychological well-being ($VIT \rightarrow PWB$). The data supports hypothesis 3 as indicated by the 0.23 path coefficient and related $t\text{-value}$ of 6.16 ($p\text{-value} < .001$). Additionally, vitality has a significant positive coefficient on psychological well-being of 0.57 ($t\text{-value} = 14.95, p\text{-value} < .001$).

Finally, the research model predicted that psychological well-being will mediate the effects of role stressors (as mediated by job burnout) and healthy lifestyle (as mediated by vitality) on job outcomes. Specifically, hypothesis 5a predicted that psychological well-being will be positively associated with job satisfaction ($PWB \rightarrow JS$), hypothesis 5b predicted that psychological well-being will be positively associated with job performance ($PWB \rightarrow JP$), and hypothesis 5c predicted that psychological well-being will be negatively associated with turnover intentions ($PWB \rightarrow TI$). Again, the data support the hypotheses at significant levels. Consistent with hypothesis 5a, psychological well-being has a significant positive coefficient on job satisfaction of 0.50 ($t\text{-value} = 14.08, p\text{-value} < .001$). Consistent with hypothesis 5b, psychological well-being has a significant positive coefficient on job performance of 0.35 ($t\text{-value} = 7.66, p\text{-value} <$

.001). Consistent with hypothesis 5c, psychological well-being has a significant negative coefficient on turnover intentions of -0.44 (t-value = -11.25, p -value < .001).

Additional Analysis

The design of the research instrument included many of the procedural remedies suggested by Podsakoff et al. (2003) to avoid the potential for common method bias in the findings. Additionally, the study employed a statistical remedy, Harman's single factor test, described by Podsakoff et al. (2003) as "one of the most widely used techniques that have been used by researchers to address the issue of common method variance"(p. 889). Although Podsakoff et al. note potential problems with the statistical remedy, this study's combination of procedural and statistical remedies is precisely what that study suggests in similar research settings (p. 898).

Pursuant to Harman's test, all of the variables used in this study were loaded into an exploratory factor analysis and the unrotated factor solution was examined to determine the number of factors that are necessary to account for the variance in the variables. If a substantial amount of common method variance is present, either (1) a single factor will emerge from the analysis, or (2) one general factor will account for the majority of covariance among the measures. Results of the test revealed thirteen factors which were largely consistent with the research model. None of the factors explained more than 13.02% of the variability (range of 1.04% - 13.02%). The cumulative variability explained by the factors was 63.82%. Thus, it is concluded that common method bias is not a particular threat to the validity of the study's results.

Mean response comparisons are shown in Table 5 for study variables by gender, position in the firm, and age range. Only one variable differed significantly by gender (p -value $< .05$). Female auditors reported higher scores for healthy lifestyle than male auditors. Mean comparisons by position in the firm and age range revealed significant differences at the $p < .05$ level in several of the measured variables. One way analysis of variance (ANOVA) procedures were performed with *post hoc* comparisons using the Scheffe method to discover the location of significant differences.

As to position in the firm, managers and directors reported the highest amount of role conflict with significantly higher scores compared to associates and supervisors. Associates and supervisors reported significantly lower amounts of role overload relative to other positions in the firm. Job burnout was highest among senior associates and manager/directors. Significance was noted in the differences between the means for senior associates compared to lower means for associates, supervisors and partners. Manager/directors reported significantly higher burnout scores than supervisors.

Partners reported the highest vitality scores with significantly higher amounts compared to senior associates and manager/directors. Partners also reported the highest amount of job satisfaction and job performance with significantly higher amounts compared to most other levels. Associates reported the lowest job performance scores with significant differences compared to manager/directors and partners. Partners and supervisors reported the lowest scores on turnover intentions with significance noted between partners and all other levels except supervisors. Senior associates reported the

highest level of turnover intentions, with significance noted compared to supervisors and partners.

As to age, the youngest group (ages 20-24) reported significantly lower amounts of role ambiguity and role conflict than those in the next three highest ranges (ages 25-34 years). The highest amount of job burnout was reported by those in the groups that included ages 25-44 years with significant differences noted compared to older respondents. As might be expected, job burnout scores for those in the 60+ age group were lowest and significant compared to most other age ranges. Conversely, vitality scores were highest for the 60+ age group and significant compared to age groups covering years 25-34. Job satisfaction and job performance scores were highest in age groups over 45 years, with significance noted comparing the 50-54 and 60+ age groups to the youngest age groups covering ages 20-34 years. Turnover intentions were highest in the 25-29 and 30-34 years age groups, with significance noted compared to the youngest and oldest age groups.

CHAPTER VI

CONCLUSIONS

Discussion

Role stress, consisting of role ambiguity, role conflict and role overload, has been studied extensively in the accounting literature (see Table 1 for a review of this literature). There is a large body of research that examines the connection between role stress in public accounting and its consequential job outcomes, such as performance, satisfaction and turnover intentions. Most of the extant research includes recommendations to deal with stress at the organizational level (e.g. Senatra 1980; Rebele and Michaels 1990; Viator 2001), suggesting that executives of public accounting firms should introduce policies that serve as coping measures to reduce role stress in the accountants' work environment. Diminished work product was cited by The Commission on Auditors' Responsibilities of the American Institute of Certified Public Accountants as one of the consequences of stress and burnout among auditors (American Institute of Certified Public Accountants 1978). As well, the Panel on Audit Effectiveness of the Public Oversight Board reported evidence of the difficulty public accounting firms have in retaining professionals, suggesting the declining attractiveness of auditing careers (Public Oversight Board 2000).

The present study was motivated by the lack of options that may be available to the individual auditor in public accounting to change the stressors created by his or her work environment. The study was designed to investigate the impact of healthy lifestyle

as a coping measure that is *within the control of the individual*, regardless of firm policies or the firm's work environment. However, it is expected that benefits to employees will also accrue to the organization.

This study employs a framework developed by Danna and Griffin (1999) that identifies two inter-related consequences of health and well-being in the workplace. One relates to the physical, psychological and behavioral consequences to the individual and the other relates to the negative consequences of poor health and well-being to the organization (e.g. lower productivity, higher health insurance costs and absenteeism). The framework highlights the role of interventions in an attempt to improve conditions for the employee and, ultimately, the organization as well. Healthy lifestyle is the intervention that should correlate to increased employee psychological well-being and concomitant improvements for the individual and the firm.

To address the research issues, a survey was conducted of professional auditors employed by a large national public accounting firm with offices located throughout the United States. The sample included 1,026 auditors from various regions of the United States and at various levels in the firm. Structural equation modeling was used to analyze the causal effects of role stressors and healthy lifestyle in a fully-mediated model on job outcomes of performance, satisfaction and turnover intentions. Additional analysis was performed on the data using ANOVA procedures.

The hypothesized model demonstrated acceptable fit statistics and, generally, the hypotheses were supported. The explanatory power of the model indicates that role stress as mediated by job burnout and its effect on psychological well-being will have negative

impact on job outcomes. However, the negative effects of role stress and job burnout can be mitigated by a healthy lifestyle, which mediated by its affect on vitality and psychological well-being will have a positive effect on job outcomes.

The first series of hypotheses (1a, 1b and 1c) propose that high levels of the components of role stress, consisting of role ambiguity, role conflict and role overload, will be associated with job burnout. The results support the association of role ambiguity and role overload with job burnout, but do not support an association of role conflict with job burnout. The second hypothesis posits that high levels of job burnout will be negatively associated with psychological well-being. Results provide support for the view that job burnout captures the aggregate effects of the ambiguity and overload dimensions of role stress and acts as a mediating influence on psychological well-being. These results provide evidence that job burnout is present in auditors employed in public accounting and that it has significant adverse effects on their psychological well-being.

Additional analysis of the role stress and burnout constructs revealed that senior associates and manager/directors reported the highest amounts of role stress and job burnout with significant differences noted compared to other levels. Differences by position in the firm are consistent with age group comparisons where higher levels of the role stressors are reported in age groups likely to include senior associates and manager/directors. For example, job burnout was highest among senior associates and manager/directors (and those in age groups 25-44 years) with significant comparisons to most other levels and age groups. This is under the likelihood that most professionals in large public accounting firms begin careers as associates soon after graduating from

college and progress to increasing responsibilities in the years thereafter, age ranges correlate to level of responsibility or position in the firm.

The third hypothesis posits that a healthy lifestyle will be associated with vitality and the fourth hypothesis argues that higher levels of vitality will be associated with higher score for psychological well-being. Thus, vitality is hypothesized to mediate the influence of healthy lifestyle on psychological well-being. Both of these hypotheses are supported at significant levels demonstrating the positive role of healthy lifestyle as an intervention to mitigate the negative effects on the antecedent factors of role stress and job burnout. Since healthy lifestyle is a choice within the control of an individual, this represents an intervention to counter the negative effects of role stress and job burnout by acting as a coping mechanism. Personal control over one's life seems to play an important role in well-being (Ganster 1989).

Finally, the last series of hypotheses (5a, 5b and 5c) state that higher levels of psychological well-being will be positively associated with higher levels of job satisfaction and job performance and negatively associated with one's turnover intentions. All of these hypotheses are supported. Taken together, this demonstrates the importance of health and well-being to both workers and to organizations. Although this study demonstrates a coping mechanism for individuals to use to counter the negative effects of role stress, the results should encourage organizations to embrace policies to support healthy lifestyles for its employees. Through improved satisfaction and performance and reduced turnover both the individual auditor and the firm will benefit.

Higher levels of happiness on the part of employees should result in higher contributions to the firm and decrease the costs of doing business.

Additional analysis of the survey results reveals that partners and those in the highest age group (60+ years) reported significantly higher amounts of vitality, and that partners and those in age groups beyond 45 years report higher job satisfaction and job performance and the lowest turnover intentions. These results could indicate that by the time one reaches the pinnacle in a public accounting career, one has learned better life balance and has settled into a comfortable routine. Senior associates and those in age groups covering 25-34 years reported the highest turnover intentions. This position and age group correlate with the normal progression of auditors in large firms and likely correspond to high scores reported by these groups for role stress and job burnout.

Contribution

Over the past three decades various psychological theories and statistical techniques have been employed to address role stress among public accountants. This study extends previous research of job burnout as a key mediating variable on job outcomes. It draws upon occupational health, psychology and management literature by employing coping and self-determination theory. The present study is the first to include healthy lifestyle as a key mitigating influence to counter the negative impact of role stress and job burnout for auditors employed in public accounting. The study thus responds to the need for analytically complex models to examine the inter-relationships between role stress, burnout, healthy lifestyle, vitality, psychological well-being and job outcomes.

The results of the study provide implications for both research and practice. The cost of role stressors and burnout is difficult to measure, but seems all too heavy for accountants and public accounting firms. Recognition of the deleterious effects of burnout is a first step in facing the challenge to mitigate those effects. Although the focus of this study was on the individual, it nevertheless acknowledges the material and psychological cost of burnout to firms. It also presents a methodology that both the individual and the firm can embrace to do something about it. Individual practitioners, accounting firm executives, students and professors should find value-added information from the issues exposed in the study.

Limitations and Potential for Future Research

The public accounting professionals participating in the study were employed by a single firm, which may limit the generalizability of the results. The participating firm is a national firm, but not one of the Big 4 accounting firms. Future research might improve on the generalizability of the results by including accountants from other types and sizes of firms.

As evidenced by Ferris (1981), the nature of organizational commitment may change over time. Prior to being hired a competitive atmosphere prevails among students to obtain positions in national accounting firms. Then, for some period of time after being hired, staff members tend to extol the merits of the firm. However, it is possible that initial attitudes of the individual toward the job may change over time. Thus, the onset of role stress for an auditor in public accounting may not occur until after a certain period of tenure with the firm or in the profession, perhaps one year. Alternatively, job satisfaction

and performance may improve as one takes on increasing responsibilities. Therefore, future research opportunities might include a longitudinal study or one that excludes accountants with minimal levels of experience.

The results of this study leads to other questions not answered here. This includes an examination of the causal order of the constructs by functional areas of public accounting (i.e., auditing, tax and consulting) perhaps by employing recursive relationships of the constructs or by employing a multi-sample analysis by position in the firm or gender. Other practice sectors besides public accounting could be examined such as corporate accounting and government accounting. It is quite plausible that alternative models are likely to fit the data, as well. This is left to future research.

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TABLE 1
ROLE STRESS STUDIES IN PUBLIC ACCOUNTING

Author(s)	Sample	Independent Variables	Dependent Variables/Results
Sorenson & Sorenson (1974)	264 accountants at all levels from large firms.	Role conflict (RC), defined as conflict between professional and organizational orientation.	RC led to increased turnover intentions and to decreased job satisfaction (JS).
Senatra (1980)	88 senior accountants from Big 8 firms.	Stress defined by (RC) and role ambiguity (RA), as distinct constructs.	Stress was caused by firm environment; RC led to job tension and RA led to decreased JS.
Gaertner & Ruhe (1981)	193 accountants at all levels from firms of various sizes.	Various stresses, moderators and strains encountered in public accounting.	National firms have more stress; auditors have greater work variance and CPAs cope negatively with their stressful environment.
Aranya et al. (1982)	597 accountants from large CA firms	Organizational and professional commitment; and work-need deprivation.	Fulfillment of work needs influences job satisfaction (JS) and organizational commitment (OC); JS did not affect turnover intention (TI).
Alderman & Deitrick (1982)	274 auditors from offices of Big 8 firms in Texas.	Time pressures/ work overload.	Time pressures cause premature sign-offs and negatively influence job performance (JP) and increase TI.
Choo (1986) – study 1	172 auditors from large and small CA firms.	Personality variables – Type A and disposition to control, commitment and challenge.	Type A personality relates positively to job stress; control, commitment and challenge dispositions relate negatively to job stress.
Choo (1986) – study 2	167 auditors from large and small CA firms.	Job-related stress.	An inverted U-shape relationship exists between job stress and JP, indicating that some stress is necessary.
Senatra (1988)	54 men and 37 women audit seniors from Big 8 firms.	Organizational stress (excessive job pressure) and personal stress (work/ life balance).	Organizational and personal stressors cause RC and RA for both men and women.

**ROLE STRESS STUDIES IN PUBLIC ACCOUNTING
(continued)**

Author(s)	Sample	Independent Variables	Dependent Variables/Results
Bamber et al. (1989)	121 audit seniors.	Organizational structure of the firm (operationalized by audit approach).	Structure of the firm is negatively related to stress (RC and RA).
Rebele & Michaels (1990)	155 auditors from four international firms.	Boundary spanning activity (BSA), perceived environmental uncertainty (PEU), RC & RA and moderators (organizational level & need for achievement)	PEU increases role stress and decreases JS & JA; BSA has indirect effect on job outcomes; and the moderators did not have significant effect.
Snead & Harrell (1991)	38 audit seniors from a large firm.	Psychological factors (need for power/ affiliation and achievement motivation).	Psychological factors studied positively influenced JS, which decreased TI.
Collins & Killough (1992; 1989)	956 audit seniors or managers from AICPA roster.	RA, RC, RO plus other organizational stressors and work/home conflict.	Independent variables negatively affected job outcomes (JS, TI and job tension).
Collins (1993)	670 respondents from Collins & Killough (1992; 1989).	RA, RC, RO plus other organizational stressors and work/home conflict and gender.	Women experienced higher job stress than men and resulted in TI. Male TI related to advancement opportunities.
Fogarty (1994)	460 auditors from Big 6 firms.	Demographic and organizational attributes.	Organizational attributes more than demographics influenced job outcomes and OC.
Fogarty (2000)	188 accountants from AICPA membership records.	RA, RC and RO.	Supports use of the burnout construct to capture the cumulative effects of role stressors affecting job outcomes (JS, JP and TI).
Viator (2001)	794 experienced accountants from large CPA firms.	Formal and informal mentoring and role stressors (RA, RC, PEU).	Formal mentoring had limited effect on protégés; informal mentoring reduced RA, but resulted in higher RC.
Fisher (2001)	123 auditors from two Big 4 firms in New Zealand.	Role stressors (RA and RC) and Type-A personality.	Failed to support Type-A behavior as a moderating influence on job outcomes (JS and JP), but it had direct and positive influence.
Sweeney & Summers (2002)	Employees & partners in 13 offices of one firm.	"Busy season" on burnout.	Busy season had a direct and significant influence on role stressors and burnout.

TABLE 2
EMPIRICAL STUDIES OF HEALTHY LIFESTYLE BEHAVIORS AND PSYCHOLOGICAL WELL-BEING (PWB)

Author(s)	Sample/Method	Independent Variables	Dependent Variables/Results
Carter (1977)	Survey – 216 adults of varied backgrounds and ages in D.C. area.	Type and quantity of exercise.	Positive correlation between exercise scores and subjective state of happiness.
Rhodes and Dunwoody (1980)	Experiment – 44 employees (30 treatment & 14 control) of Canadian company.	Regular exercise program over a six month period.	Treatment group experienced improved physiological and psychological factors – decreased stress, improved coping ability, better work performance and improved outlook.
Hawkins et al. (1988; 1991)	Survey – 126 adults age 65 years and over.	Exercise, sleep and other good health practices.	1988 study using canonical correlation supports exercise/sleep related to better PWB; 1991 study using SEM supports exercise only model.
Stephens (1988)	Survey – secondary analysis of four samples ranging from 3,025 to 23,791 people from US and Canada.	Physical activity.	Level of physical activity positively related to general well-being, positive mood and lower levels of anxiety and depression.
Moses et al. (1989)	Experiment – 109 sedentary adults.	Three levels of exercise groups (high, low, moderate) over 10 weeks. No differences in PWB measures before treatment.	Moderate exercise group manifested significant improvement in PWB measures upon completion of treatment and at three month follow-up.
Rosenfeld et al. (1989)	Experiment – 522 pharmaceutical workers.	Two groups – one physical activity and one social activity over seven months.	Productivity levels same for both groups, but perceived efficiency and decreased fatigue for the exercise group.

TABLE 2

EMPIRICAL STUDIES OF HEALTHY LIFESTYLE BEHAVIORS AND PSYCHOLOGICAL WELL-BEING (PWB)
(continued)

Author(s)	Sample/Method	Independent Variables	Dependent Variables/Results
Norris et al. (1990)	Experiment – 77 male police officers from the UK.	Three groups – aerobic activity, anaerobic activity and control for 10 week period.	Significantly higher PWB measures for the aerobic and the anaerobic groups.
Daley and Parfitt (1996)	Survey – 293 office employees of British food retailer.	Membership in a worksite health and fitness club.	Membership was related to higher PWB, higher job satisfaction and lower absenteeism.
Ryan and Frederick (1997)	Various – six studies were conducted with differing subjects using surveys.	Various psychological and somatic factors that impact energy.	Positive associations are shown between subjective vitality and several indexes of psychological well-being.
Ensel and Linn (2004)	Survey – 1,261 residents over age 18 in upstate NY.	Physical fitness.	Physical fitness was associated with higher PWB and physical well-being and ability to cope with distress.
Pronk et al. (2004)	Survey – 683 workers from three health care plans and self-insured company.	Modifiable health risks - physical activity, cardio fitness and obesity.	Higher levels of physical activity and cardio fitness related to improved work quality and job performance; obesity related to difficulties in social relations and higher absenteeism.
Elavski et al. (2005)	Experiment – 174 sedentary adults aged 65-74 years.	Six month randomized controlled exercise program.	Physically active participants had higher quality of life after program completion and in one and five year follow-up.
Goldsby et al. (2005)	Survey – 366 entrepreneurs from Midwest US.	Running and weight-lifting regimens.	Both regimens were associated with higher personal goal achievement and those with a running regimen had higher company sales.
Thøgersen-Ntoumani et al. (2005)	Survey – 312 employees of an information technology company.	Exercise and physical activity.	Exercise related directly to physical self and enthusiasm at work; indirectly to global well-being. An alternative model using physical activity vs. exercise was similar.

Table 3
Characteristics of the Sample
(n = 1,026)

<u>Characteristic</u>	<u>Mean</u>	<u>Median</u>	<u>Range</u>	<u>Standard Deviation</u>
Tenure with firm (yrs.)	6.53	3.00	<1 - 47	7.99
	<u>Total Firm Auditors</u>		<u>Sample</u>	
	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>
Gender:				
Male	1465	54.0%	510	49.7
Female	1249	46.0%	503	49.0
Missing			13	1.3
	2714	100.0%	1026	100.0
Position in firm:				
Associate	835	30.8	313	30.5
Senior	607	22.4	220	21.4
Supervisor	204	7.5	73	7.1
Manager/ Director	679	25.0	287	28.0
Partner	389	14.3	129	12.6
Missing			4	0.4
	2714	100.0	1026	100.0
Age range:				
20-24	455	16.8	194	18.9
25-29	756	27.9	299	29.2
30-34	418	15.4	167	16.3
35-39	291	10.7	89	8.7
40-44	258	9.5	77	7.5
45-49	198	7.3	57	5.6
50-54	149	5.5	60	5.8
55-59	102	3.8	37	3.6
60+	87	3.2	26	2.5
Missing			20	1.9
	2714	100.0	1026	100.0

Table 4
Descriptive Statistics for Study Variables
(n = 1,026)

Variable	Number of Items	Possible Range	Actual Range	Item Mean	Missing cases ^a
Role Ambiguity (RA)	5	5-35	5-35	2.95	4
Role Conflict (RC)	3	3-21	3-21	3.34	9
Role Overload (RO)	3	3-21	3-21	3.85	4
Healthy Lifestyle (HL)	10	7-70	28-70	5.20	31
Job Burnout (JB)	9	9-63	10-62	3.33	28
Vitality (VIT)	6	6-42	6-42	4.53	22
Psychological Well-Being	5	5-35	5-35	4.81	8
Job Satisfaction (JS)	3	3-21	4-21	4.78	2
Job Performance (JP)	12	7-84	36-84	5.72	57
Turnover Intentions (TI)	3	3-21	3-21	3.50	11
	59				

a. Listwise deletion

Table 5
Differences in Means of Study Variables across Auditor Position, Gender and Age

Position in the firm										
Associate	2.89	3.14	3.43	3.20	5.22	4.61	4.82	4.70	5.60	3.54
Senior Associate	2.96	3.45	4.00	3.59	5.14	4.32	4.65	4.52	5.69	3.89
Supervisor	2.94	3.00	3.38	2.93	5.26	4.68	4.79	5.02	5.67	3.03
Manager/ Director	3.03	3.53	4.06	3.43	5.18	4.37	4.82	4.83	5.81	3.55
Partner	2.91	3.45	4.07	3.16	5.27	4.90	5.03	5.18	5.87	2.91

Gender	RA	RC	RO	JB	HL**	VIT	PWB	JS	JP	TI
Male	2.94	3.38	3.85	3.37	5.10	4.49	4.83	4.79	5.74	3.46
Female	2.96	3.28	3.82	3.27	5.30	4.57	4.79	4.77	5.70	3.53

Age	RA*	RC**	RO**	JB**	HL	VIT**	PWB	JS**	JP**	TI**
20-24	2.83	2.98	3.33	3.15	5.32	4.71	4.97	4.75	5.61	3.33
25-29	2.94	3.43	4.01	3.60	5.15	4.38	4.78	4.58	5.69	3.89
30-34	3.12	3.64	4.14	3.57	5.14	4.26	4.70	4.63	5.60	3.82
35-39	2.98	3.29	4.02	3.22	5.10	4.55	4.85	5.09	5.79	3.06
40-44	2.98	3.59	3.83	3.24	5.21	4.45	4.51	4.88	5.81	3.28
45-49	2.95	3.35	3.94	3.07	5.33	4.74	4.73	5.11	5.76	3.10
50-54	2.87	3.31	3.99	2.99	5.29	4.81	4.83	5.08	5.97	2.88
55-59	3.17	3.00	3.54	2.81	5.21	4.67	5.11	4.98	5.72	3.12
60+	2.45	2.90	3.14	2.39	5.27	5.25	5.15	5.55	6.26	2.56

RA = Role Ambiguity

RC = Role Conflict

RO = Role Overload

HL = Healthy Lifestyle

JB = Job Burnout

Vit = Vitality

PWB = Psychological Well-Being

JS = Job Satisfaction

JP = Job Performance

TI = Turnover Intentions

**Significant differences at the .01 level

*Significant differences at the 0.05 level

Table 6
Reliability and Correlations of Variable Means

	RA	RC	RO	JB	HL	VIT	PWB	JS	JP	TI
RA	.74	.47**	.39**	.46**	-.17**	-.42**	-.35**	-.45**	-.33**	.42**
RC	.48**	.70	.61**	.57**	-0.07	-.35**	-.27**	-.38**	-.13**	.45**
RO	.39**	.63**	.69	.57**	-0.06	-.32**	-.24**	-.29**	-.06	.36**
JB	.48**	.57**	.57**	.82	-.87**	-.53**	-.36**	-.56**	-.30**	.55**
HL	-.16**	-.07*	-.06	-.10**	.73	.36**	.20**	.11**	.11**	-.09**
VIT	-.42**	-.37**	-.33**	-.55**	.36**	.87	.51**	.56**	.37**	-.41**
PWB	-.36**	-.29**	-.25**	-.37**	.19**	.52**	.89	.42**	.34**	-.33**
JS	-.47**	-.40**	-.31**	-.58**	.11**	.58**	.42**	.87	.35**	-.71**
JP	-.36**	-.13**	-.07*	-.32**	.11**	.36**	.32**	.34**	.84	-.25**
TI	.44**	.46**	.37**	.57**	-.08*	-.43**	-.34**	-.72**	-.26**	.74

Note: Amounts on the diagonal represent Cronbach alpha reliability coefficients. Amounts on upper side of the diagonal represent Spearman coefficients; amounts on lower side represent Pearson coefficients.

**Significant at the 0.01 level

*Significant at the 0.05 level

Table 7
Results of Confirmatory Factor Analysis

	<u>Acceptable Fit Standard</u>	<u>Model</u>
Statistical Tests		
Chi-square	NA	6848.73
df	NA	1,607
Fit Indices		
CFI	>.90	0.94
GFI	>.90	0.77
NFI	>.90	0.92
NNFI	>.90	0.93
Residual Analysis		
RMR	<.05	0.16
RMSEA	<.10	0.066
(95% confidence interval)		(0.064-0.067)

CFI = Comparative Fit Index. Higher values indicate better fit.
 GFI = Goodness of Fit Index. Higher values indicate better fit.
 NFI = Normed Fit Index. Higher values indicate better fit.
 NNFI = Non-Normed Fit Index. Higher values indicate better fit.
 RMR = Root Mean Square Residual. Lower values indicate better fit.
 RMSEA = Root Mean Squared error of Approximation. Lower values indicate better fit.

<u>Construct</u>	<u>Composite Reliability</u>	<u>Variance Extracted</u>
Role Ambiguity (RA)	0.76	0.40
Role Conflict (RC)	0.69	0.44
Role Overload (RO)	0.71	0.45
Job Burnout (JB)	0.79	0.37
Healthy Lifestyle (HL)	0.76	0.32
Vitality (VIT)	0.88	0.55
Psychological Well-Being (PWB)	0.89	0.63
Job Satisfaction (JS)	0.88	0.70
Job Performance (JP)	0.84	0.31
Turnover Intentions (TI)	0.76	0.52

Table 8
Overall Fit Summary

	Results			
	Acceptable Fit Standard	Hypothesized Model	Nested Model	χ^2 difference test
Statistical Tests				
χ^2	NA	7760.23	7775.73	15.5**
df	NA	1634	1635	1
Fit Indices				
CFI	>.90	0.93	0.92	
GFI	>.90	0.75	0.75	
NFI	>.90	0.91	0.91	
NNFI	>.90	0.92	0.92	
Residual Analysis				
RMR	<.05	0.14	0.14	
RMSEA	<.10	0.071	0.071	
(95% confidence interval)		(.069-.072)	(.069-.072)	

** Significant at the $p < 0.01$ level.

Table 9
Test Results and Estimated Coefficients for Hypothesized Model

<u>Hypothesized Path</u>	<u>Standardized Coefficient</u>	<u>t-value</u>	<u>p-value</u>	<u>Hypothesized sign</u>	<u>Observed sign</u>
H1a: RA → JB	0.21	3.16	<0.001	+	+
H1b: RC → JB	-0.16	-0.69	NS	+	NS
H1c: RO → JB	0.87	4.28	<0.001	+	+
H2: JB → PWB	-0.13	-4.25	<0.001	-	-
H3: HL → VIT	0.23	6.16	<0.001	+	+
H4: VIT → PWB	0.57	14.95	<0.001	+	+
H5a: PWB → JS	0.50	14.08	<0.001	+	+
H5b: PWB → JP	0.35	7.66	<0.001	+	+
H5c: PWB → TI	-0.44	-11.25	<0.001	-	-

NS Not significant.

FIGURE 1
COPING DIAGRAM

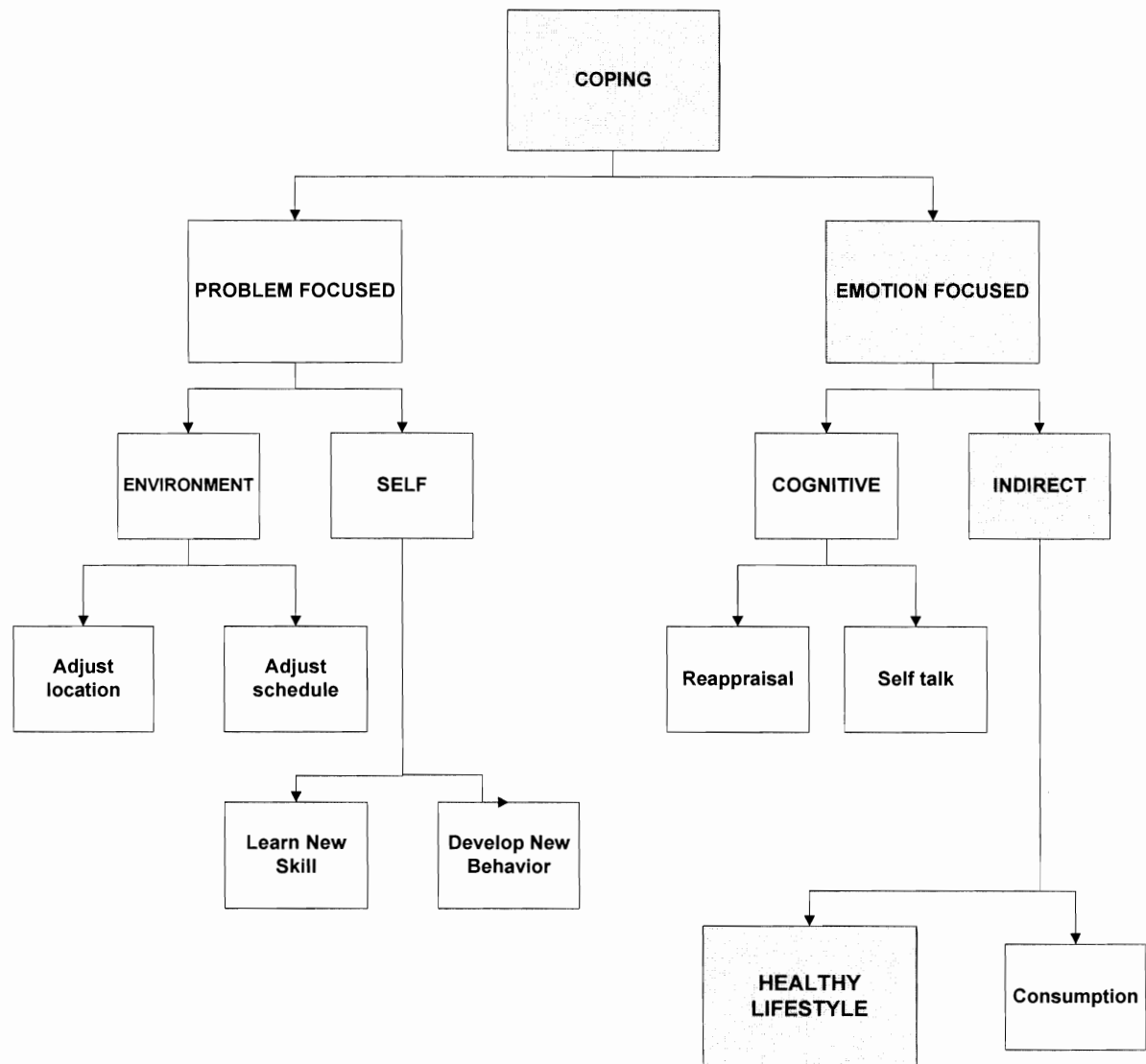
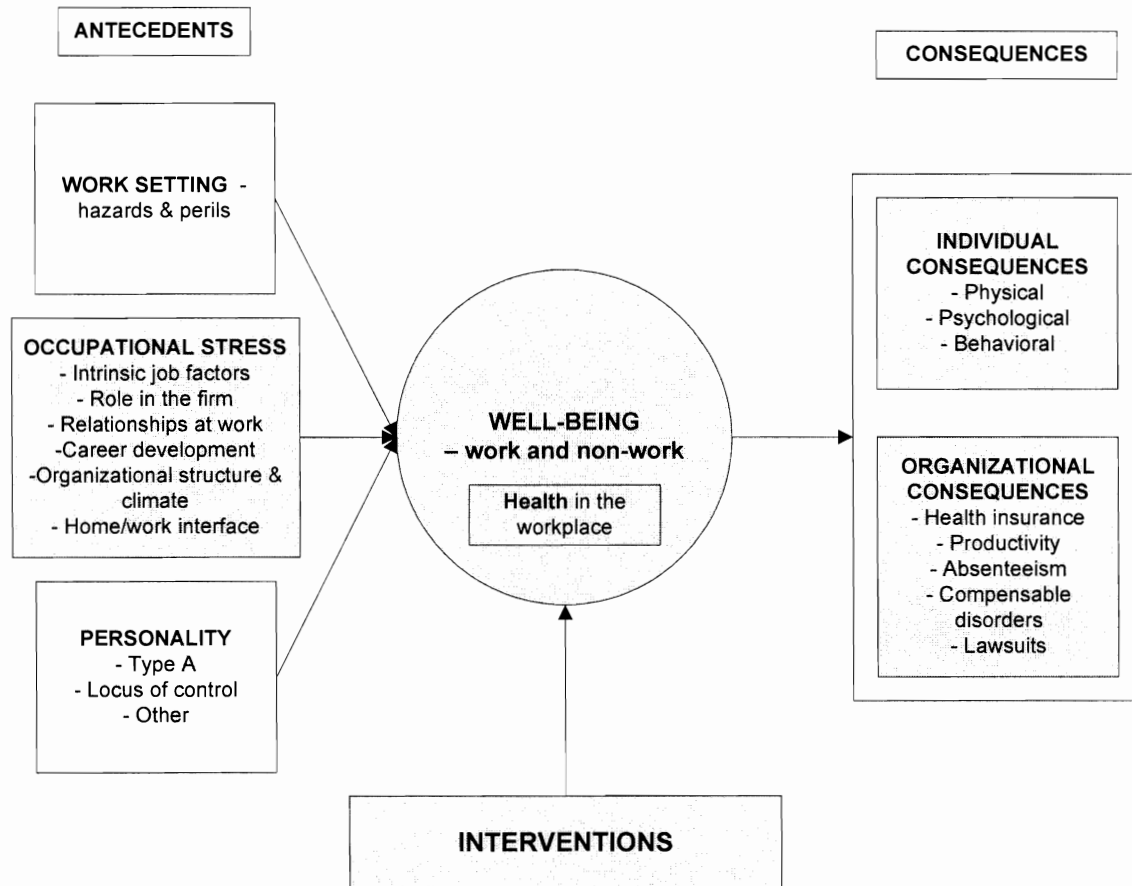


FIGURE 2
ADAPTED DANNA AND GRIFFIN FRAMEWORK²



² Adapted from a framework suggested in: Danna, K., and R. W. Griffin. 1999. Health and well-being in the workplace: A review and synthesis of the literature. *Journal of Management* 25 (3):357-384.

FIGURE 3
THEORETICAL RESEARCH MODEL

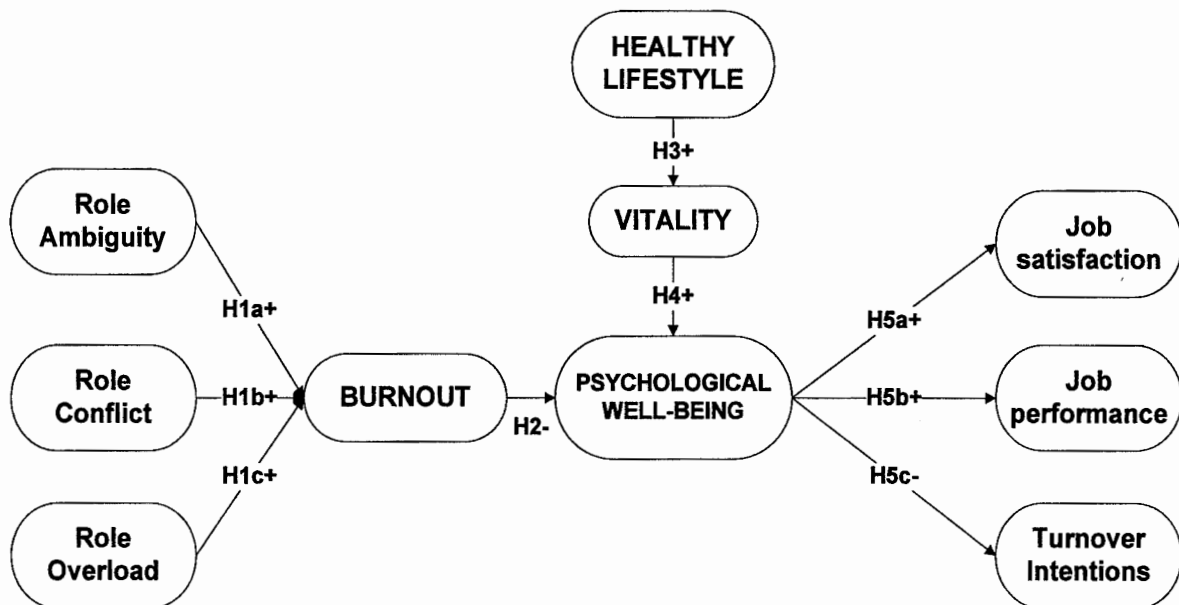
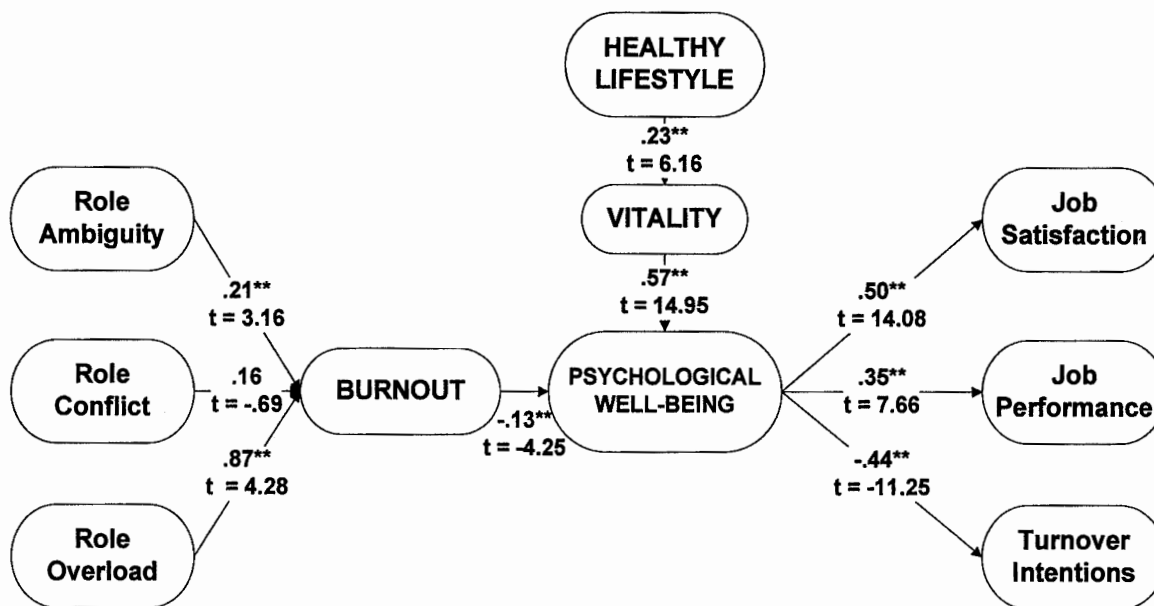


FIGURE 4
STRUCTURAL EQUATION MODEL



**** Significant at the $p < .001$ level.**

APPENDIX SURVEY QUESTIONNAIRE

INTRODUCTION

As an employee or partner of a large US public accounting firm, you are invited to participate in this national study designed to measure individual choices and experiences of members of your profession. Your candid responses will contribute to a greater understanding of staff and partner needs and concerns regarding the requirements and responsibilities of your job and your work-life balance.

In addition to providing insights into factors surrounding the experiences and choices of those employed in public accounting, this study is being conducted to fulfill the requirements for a doctoral dissertation at Virginia Commonwealth University. The researcher, Ambrose Jones III, can be reached at 804-363-8080 or jonesa@vcu.edu. His doctoral committee chairman, Dr. Benson Wier, can be reached at 804-828-7162 or bwier@vcu.edu.

RESEARCH STUDY INFORMATION

You can complete this survey at any time; however, we would appreciate a response by XX/XX/XXXX. Completion of the survey should take approximately 15 minutes. If you find it necessary to leave the survey at any time, you can return at a later time at the point where you left off, as long as you use the same computer.

Results from this empirical study will contribute to a greater understanding of public accountants' needs and concerns regarding the requirements and responsibilities of the job and work-life balance. Participation in the survey is strictly voluntary, and you may discontinue your participation at any time. You have the right to choose not to answer any questions that may make you feel uncomfortable. Refusal to participate or withdrawal from participation will not involve any penalty or loss of benefits to which you are otherwise entitled.

YOUR RESPONSES WILL REMAIN ANONYMOUS. Your name will not appear anywhere on this questionnaire. If you choose to participate, you will complete the questionnaire to record your opinion about certain aspects of your job and lifestyle. There are no "right" answers; you are only expected to give your opinion. The last part of the survey form requests basic demographic information that will be helpful in interpreting the results. When you finish answering the questions, please click the "done" button.

This study was approved by the Virginia Commonwealth University Institutional Review Board for the Protection of Human Subjects in Research on April 18, 2006. If you have any questions about your rights as a participant in this study, you may contact:

Office of Research Subjects Protection
Virginia Commonwealth University
800 East Leigh Street, Suite 114
P.O. Box 980568
Richmond, VA 23298
Telephone: 804-828-0868

APPENDIX
SURVEY QUESTIONNAIRE
(continued)

		Strongly Disagree			Neutral			Strongly Agree
		1	2	3	4	5	6	7
JOB ROLES								
	The following questions address issues that affect your job. There are no right or wrong answers.							
1	I have just the right amount of work to do.							
2	I know that I have divided my time properly.							
3	There are clear, planned goals and objectives for my job.							
4	I know exactly what is expected of me.							
5	I feel certain of how I will be evaluated for advancement in the firm.							
JOB RESPONSIBILITIES								
	The following questions address issues you may experience concerning your job responsibilities. There are no right or wrong answers.							
6	I work under incompatible policies and guidelines.							
7	I receive assignments without the manpower to complete them.							
8	I have to work under vague directives or orders.							
9	I am given enough time to do what is expected of me on the job.							
10	It often seems like I have too much work for one person to do.							
11	The performance standards on my job are too high.							
JOB EFFECTS								
	The following questions address how your job affects you. There are no correct or incorrect answers.							
12	I feel emotionally drained from my work.							
13	I feel used up at the end of the day.							
14	I feel burned out from my work.							
15	I deal very effectively with the problems of my clients.							

APPENDIX
SURVEY QUESTIONNAIRE
(continued)

		Strongly disagree			Neutral			Strongly Agree
		1	2	3	4	5	6	7
16	I feel I'm positively influencing other people's lives through my work.							
17	I can easily understand how my clients feel about things.							
18	I feel like I treat some clients like they are impersonal "objects."							
19	I feel I've become more callous toward people since I took this job.							
20	I worry that this job is hardening me emotionally.							
LIFESTYLE								
	The following questions address issues about your personal lifestyles. As before, there are no right or wrong answers.							
21	I am an active person.							
22	Exercise puts me more in control.							
23	I exercise to get rid of frustration.							
24	I feel better after I exercise.							
25	Vigorous exercise gives me a "high."							
26	I can organize my thoughts better when I exercise.							
27	I maintain a healthy diet that includes the five basic food groups.							
28	Generally, I get a good night's sleep.							
29	I do not consume an excessive amount of tobacco products.							
30	I do not consume an excessive amount alcohol.							
HOW DO YOU FEEL?								
	The following questions ask about how you generally feel. There are no right or wrong answers.							
31	I feel alive and vital.							
32	Sometimes I am so alive I just want to burst.							
33	I have energy and spirit.							
34	I look forward to each new day.							
35	I nearly always feel awake and alert.							
36	I feel energized.							

APPENDIX
SURVEY QUESTIONNAIRE
(continued)

		Strongly disagree			Neutral			Strongly Agree
		1	2	3	4	5	6	7
	HOW SATISFIED ARE YOU IN GENERAL?							
	The following questions ask you about life in general. As before, there are no wrong answers.							
37	In most ways, my life is close to ideal.							
38	The conditions of my life are excellent.							
39	I am satisfied with my life.							
40	So far, I have gotten the important things I want in life.							
41	If I could live my life over, I would change almost nothing.							
	HOW DO YOU FEEL ABOUT YOUR JOB?							
	The following questions ask about your job. There are no right or wrong answers.							
42	Please indicate which of the following statements describes <i>how well you like your job</i> . (1= I hate it, to 4= I am indifferent to it, to 7 = I love it.)							
43	Please indicate which of the following statements describes <i>how well you like your job</i> . (1 = Never satisfied, to 4 = Satisfied half the time to, 7 = Always satisfied.)							
44	Please indicate how you think you compare with other people in your firm. (1 = No one dislikes their job more than I dislike mine, to 4 = I like my job about as well as others like theirs, to 7 = No one likes their job better than I like mine.)							
	ON-THE-JOB EXPERIENCES							
	Tell us about your experiences at work.							
45	I am satisfied with the quantity of my work product.							
46	I am satisfied with the quality of my work product.							

APPENDIX
SURVEY QUESTIONNAIRE
(continued)

		Strongly disagree			Neutral			Strongly Agree
		1	2	3	4	5	6	7
47	I am satisfied with my oral communication skills.							
48	I am satisfied with my written communication skills.							
49	I am satisfied with my ability to accept responsibility and initiate positive action.							
50	I am satisfied with my ability to exercise my professional skills and due care.							
51	I am satisfied with my ability to follow policies and procedures.							
52	I am satisfied with my ability to plan and organize my work.							
53	I am satisfied with my ability adapt to new situations.							
54	I am satisfied with my ability to get along with others in the firm.							
55	I am satisfied with my ability to get along with client personnel outside the firm.							
56	I am satisfied with my ability to supervise others.							
57	I would prefer another more ideal job than the one I now work in.							
58	I have thought about changing firms since I began working here.							
59	If I have my own way, I will be working for this firm three years from now.							

APPENDIX
SURVEY QUESTIONNAIRE
(continued)

111

DEMOGRAPHIC INFORMATION

Nearing the end! Tell us more about yourself.

1. Functional area within your firm: General Service/ Audit, Tax, Consulting, Administrative, Other _____.
2. Did you join the firm through TBS? Yes ____ No ____.
3. Geographic region (Economic Unit) of the Firm I work in (Mid-Atlantic, New York Metro, etc.) _____.
4. Rank within firm: associate, senior, manager, senior manager, director, partner, other _____.
5. Number of years with the firm: _____.
6. Gender: _____.
7. Age: (20-24) (26-29) (30-34) (35-39) (40-44) (45-49) (50-54) (55-59) (60 +)

Thank you!

Thank you for your time and consideration. Your input is extremely valuable to this study and is greatly appreciated. Please contact me at 804-363-8080 or jonesa@vcu.edu if you would like to obtain the results of this study or with any questions or concerns.

Sincerely,
Ambrose Jones III
Ph.D. Candidate - Accounting
School of Business
Virginia Commonwealth University

VITA

Ambrose Jones III was born August 16, 1948 in Wilkes-Barre, PA as the son of Ambrose Jones Jr. and Ruth Jones. He graduated from St Nicholas High School, Wilkes-Barre, PA in 1966. He attended King's College, Wilkes-Barre, PA and received his Bachelor of Science degree in Accounting in 1970, graduating Magna Cum Laude. His professional public accounting career began with Arthur Andersen & Co in New York, NY in June 1970 where he was employed until 1975. In 1972 he completed the requirements to become a Certified Public Accountant in the state of New York. In November 1975, he joined McGladrey & Pullen LLP in Garden City, NY where he became a partner in 1980. In 1984 he transferred to the Richmond VA office of McGladrey & Pullen to assume quality control responsibilities along with serving clients for the firm and where he remained until taking retirement in August 2003, upon which he commenced his doctoral studies at Virginia Commonwealth University.

