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Investigating the Nomological Network of  
Variables Impacting on Burnout among Nurses

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Dedication

For my mother who knew it could be  
and  
for my brother who knew it would be.

## Acknowledgments

First, I would like to express my deepest gratitude and appreciation to my supervisor, Dr. Barbara Byrne whose encouragement, guidance and patience especially during the last several months were the light at the end of the tunnel.

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And finally, the people without whose love, support and patience this particular thesis would never have been completed. To my husband who throughout the whole process was always steadfastly there as big and as strong as life itself. To my two children, Christina and Victoria who grew while the thesis grew and now, all are grown. And to my father who supported and cared.

Thank you.

### Abstract

Research into the phenomenon of burnout has been of an anecdotal nature. The literature abounds with definitional, analytical and psychometric limitations. Although burnout has been defined by numerous researchers in varying terms, research still lacks a universal definition and theory. Therefore, it is essential to develop this universal definition by investigating the existence, and the determinants of the concept. One approach hypothesized to establishing a theoretical definition of burnout is to use a sophisticated and rigorous analyses such as structural equation modeling with a sample of a professionals exhibiting symptoms of burnout. This present study focuses on the nursing profession and endeavours to propose at least an initial theoretical definition of the burnout construct for this profession.

Research has determined that nursing is a profession prone to burnout. The current study elaborated on a postulated framework of burnout as it impacted on a nursing sample of 340 general staff nurses and 204 critical care nurses. In testing this model, the more salient determinants drawn from the research literature, were validated. The model incorporated such variables as Locus of Control,

Professional Identity, and Femininity (personal variables); Role Conflict, Role Ambiguity, Workload, and Autonomy (organizational variables); and Self-esteem and Job Satisfaction (mediating variables).

It was determined that nurses in this sample obtained from three major Ontario hospitals were indeed reporting levels of burnout. Further, the general staff nurses and critical care nurses reported differences in how they experienced that burnout. This information is particularly useful in developing programs to increase the quality of worklife for nurses.

This study provides a foundation on which to expand the knowledge of burnout as a construct, its definition and its determinants. The study concludes with limitations and directions for future research.

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## INTRODUCTION

The concept of burnout was first conceptualized and defined by Freudenberger in 1974 as a process of wearing out. Since that time, the term has evolved through numerous definitions to become the multifaceted, multidimensional construct of Burnout as defined by Maslach and Jackson (1981). According to Maslach & Jackson, burnout, particularly prevalent in the helping professions, has three related but independent components: emotional exhaustion, or progressively debilitating fatigue; depersonalization, or a negative and uncaring attitude; and finally, reduced personal accomplishment which involves one's own sense of self, competence, and achievement.

The definitional evolution of the concept has been rapid due to the enormous financial, emotional, and psychological costs of burnout. In individuals, the cost reflects itself as physical and psychological correlates. In organizations, burnout manifests itself in problems such as productivity and absenteeism (Golembiewski & Munzenrider, 1988). To compound the problem of costs, there is a lack of

information on what proportions of various professions succumb to burnout or to what extent these individuals in various organizations experience the phenomenon (Golembiewski & Munzenrider, 1988). Despite the costs in human and organizational terms, there are few studies dealing directly with the incidence of burnout. Prior to 1980, there were fewer than 50 references related to burnout appearing in any review article (Paine, 1981). This number, magnified by numerous articles, books, and edited volumes at least tripled in the following two years. A summary of the literature dealing with burnout (Perlman and Hartman, 1982) unfortunately still found that of the 48 articles discussed, only five were of a quantitative nature.

Much of the research on burnout has been of a substantive and anecdotal nature (Einsiedel and Tully, 1981; MacNeill, 1981; Meier, 1983, 1984). Research, labelled descriptive and exploratory, had been criticised on the grounds that (a) attention had been given to the practical rather than the empirical research, (b) there was little evidence of programmes of research study (research comprised individual study), (c) conceptual and operational definitions varied extensively, (d) hypothesis formulation and testing were uncommon, (e) there were few extensions

and/or replications of previous studies, and (f) contributions to theory development were far exceeded by the number of studies dedicated to prevention (Einsiedel and Tully, 1981). What is required are studies exploring the relations between burnout and other psychological constructs to which it was theoretically linked, as well as relations among the dimensions of the burnout construct itself.

Exceptions to the criticisms are such researchers as Maslach (1976) and colleagues, Jackson (1978) and Pines (1977, 1978); Pines, Aronson and Kafry (1978); Cherniss (1980); Jones (1981); Meier (1983, 1984); Golembiewski & Munzenrider (1988); and Leiter (1991, 1993). Maslach (1976) and colleagues, Jackson (1978) and Pines (1977, 1978), and Pines, Aronson and Kafry (1978) empirically studied burnout by focusing on the symptomatology and the negative consequences. Cherniss (1980) primarily views the cultural and organizational frames of reference to discover sources of burnout. Jones (1981) organizes his research around the cognitive, affective, behavioural, and psychophysiological experience. Two researchers, Golembiewski & Munzenrider (1988) and Leiter (1991) developed models from the perspective of phases in burnout, the former with an eight phase model and the latter with two phases. Meier (1983,

1984) who investigated and validated burnout as a unique phenomenon, focuses on the construction of an interactional model of burnout based on Bandura's theory of reinforcement.

These researchers share a common thread in that each has a theory of burnout and each has a method of empirically testing the model. The theories have similar components (the physical, the psychological, and the emotional) and are directly related to stress. The authors differentiate between burnout and other concepts, and in doing so define burnout. Ultimately, burnout (a) is equated with the human service professional, (b) is produced by a combination of individual, organizational, and mediating factors, and (c) has a core component of commitment. Finally, the researchers agree that research related to the construct validation of Burnout is essential if progress is ever to be made in the understanding of the etiology and consequences of burnout.

Construct validity focuses on two issues: (a) the extent to which the assessment instrument measures the underlying hypothetical construct for which it was designed, and (b) the theoretical framework within which the construct is found (Cronbach and Meehl, 1955). Cronbach and Meehl, (1955) argue that construct validity research is

particularly essential for theoretical or propositional substantiation when there is no *accepted, adequate* body of knowledge related to a hypothetical construct.

Consistent with Cronbach and Meehl's (1955) views, methodological reviewers of the burnout literature have called for construct validation as a means to establish a potential nomological network of Burnout that can be linked to specific professions. Construct validation on a nomological network involves the investigation of both between-network relations (relations between Burnout and other constructs with which it has been empirically linked) and within-network relations (relations among the postulated facets of Burnout).

Based on the research of Maslach and colleagues that has determined Burnout to be a multidimensional construct of three distinct components, construct validation of the within-network relations of Burnout necessarily focuses on the extent to which the dimensions are related to each other. Construct validation of the between-network relations explores the determinants of a multidimensional Burnout structure.

Given the specificity of burnout relative to different work environments, it is critical that any construct

validation of its nomological network or structure of between and within relations, be investigated within the framework of a particular profession. Nursing is such a profession in that (a) it is the largest health-care professional body in Canada (Grove, 1991); (b) it has been linked to the incidence of burnout (Jones, 1981; Maslach, 1979, 1982, 1986); (c) the very nature of nursing is based on empathy, compassion and humanization of medicine [the antonyms of these concepts are detached concern and dehumanization (Maslach, 1993)]; and (d) nurses as professionals are involved with people on an extremely personal level in an environment that is not always conducive to positive consequences (Buunk & Schaufeli, 1993; Hatcher & Spence Laschinger, 1996).

Empirical research on burnout in the nursing profession has been scant (Morrow, Mullen & McElroy, 1990). Yet shortages of working nurses, a trend that is cyclic, necessitates the investigation of indicators of the quality of Canadian work life. For example, in 1987, 50% to 70% of 667 nurses in Newfoundland reported symptoms of burnout (Grove, 1991). Further, a survey in 1988, of 1,240 Metro Toronto Hospital nurses revealed an overwhelming dissatisfaction with their careers (Grove, 1991). In

addition, at this hospital, 50% of the nurses would not recommend nursing, 50% considered leaving their jobs, and 47% were likely to leave their jobs within a year.

Grove (1991) noted that turnover rates for Vancouver hospital nurses increased from 14% in 1984 to 25% in 1989. In 1988, despite the fact that the number of nurses doubled between 1965 and 1986, only 57% of female graduate nurses in Canada worked full-time by choice. Thus, there is a shortage of nurses that are *willing to work*. Grove (1991) maintains that this dichotomous situation is due to hospital working conditions. Given that these working conditions have since further deteriorated due to restructuring and cutbacks, increasing job insecurity and organizational stress, the potential and milieu for burnout is even greater than reported by Grove (1991).

Reports indicate that nurses are dissatisfied. However, little research has been accomplished to determine the antecedents of this dissatisfaction. While the research focuses primarily on (a) intervention and prevention issues (Cherniss 1980), and (b) the incidence of stress and burnout in health-care professionals (Maslach, 1986 and Jones, 1981), researchers have failed to explore the determinants of the construct of Burnout.

The primary purpose of this thesis was to propose and test a theoretically and empirically derived structure of Burnout as it bears on the nursing profession. This structure is grounded in the substantive theory of burnout based on a review of the research literature. The thesis begins with a review of the literature and the limitations of previous research, followed by a discussion of construct validity in general, and as it relates to burnout in the nursing profession in particular.

Based on the literature review, the variables which were considered to be most salient to the nomological network of Burnout within the context of the nursing profession, were identified and justified. Finally, a theoretically and empirically-substantiated model of Burnout, considered to adequately represent the nomological network relative to the nursing profession, was analyzed. Discussion of this model, as it relates to a nursing sample, concludes the thesis.

### The Theoretical Framework Of The Burnout Construct

Based on the knowledge that there is a theory of burnout rooted in empirical research<sup>1</sup>, a literature review

of this research is essential. In the literature, the numerous researchers each view burnout from a different perspective and develop differing instruments to measure the construct. In order to better understand the construct of Burnout, the researchers and their contributions are now reviewed.

#### Maslach and Jackson

Maslach and Jackson (1981) were the first to construct a measuring instrument designed to assess burnout. Previous researchers, including the Berkley Planning Associates Metz, Gann, and Westerhouse (cited in Perlman and Hartman, 1982), provided a correlation between Burnout and such other concepts as Job Termination, Job Satisfaction, Role Conflict, and various personality traits and forms of communications, and defined burnout in those terms. However, the Berkley Planning Group did not develop an instrument to measure burnout nor did they provide a way in which to clearly define the construct. The seminal work of Maslach and her colleagues however, yielded both a definition of burnout and a means to test that definition, the Maslach Burnout Inventory (MBI).

In 1976, Maslach described burnout as a feeling of distance from the client or a sense of cynicism regarding the client. In 1977, along with Pines, she added descriptors and the factors of physical and emotional exhaustion, and dehumanization. The concept of lowered occupational productivity was appended in 1979. Finally, in 1981 Maslach and Jackson described burnout as a syndrome displaying such characteristics as emotional exhaustion, depersonalization, and dissatisfaction with personal accomplishments, dimensions obtained from a factor analysis of the data collected in the construction of their inventory.

Maslach developed her theory of burnout and the test inventory, based on a need for synthesis and integration of the existing information, and on a need for psychometric assessment tools to evaluate the construct (Einsiedel and Tully, 1981; Maslach and Jackson, 1981). The three facets, Emotional Exhaustion, Depersonalization and decreased Personal Accomplishment, were defined as distinct yet empirically correlated, sharing similarly hypothesized causes (Jackson, Schwab and Schuler, 1986).

**Emotional exhaustion** is considered by Maslach and Jackson (1981) to be the end product of a pattern of too

many emotional commitments. This product of depleted and unreplenishable emotional resources results in decreased motivation and an increased lack of involvement with people (Maslach, 1982). On the assumption that burnout is most prevalent in individuals who systematically interacted with people, this emotional and psychological exhaustion is particularly debilitating. This emotional exhaustion comprises a state of high arousal and is related to such concepts as Cynicism, Rigidity, and increasing Detachment (Maslach and Jackson, 1981; Maslach, 1982; Jackson et al. 1986).

In service-oriented professionals, a professional detachment is considered to be necessary as a buffer for concerned, effective caring. Unfortunately, this professional detachment could deteriorate to become *depersonalization*, the second component of burnout. As such, clients of the professional tend to become dehumanized and labelled by the professional. The caregiver who is burned out, begins to minimize intense emotions and this leads to ineffective crises functioning, feelings of callousness and impersonal behaviours (Maslach, 1982; Jackson et al., 1986).

The third dimension of Burnout, *reduced personal*

*accomplishment*, is a progression from depersonalization. In Depersonalization, the individual has increased negative attitudes to oneself, has an increased sense of inadequacy and helplessness, and ultimately begins to derogate others (Maslach, 1982). As the depersonalization increases, the person has an decreasing sense of having accomplished worthwhile tasks in their workday. These three components, emotional exhaustion, depersonalization and decreased personal accomplishment describe the burned-out professional according to Maslach and Jackson (1976).

Maslach and her colleagues are among the first researchers to investigate the construct of Burnout in an empirical manner. The Maslach Burnout Inventory (MBI), is the seminal instrument for the validation of the multidimensional nature of burnout.

#### Pines and colleagues

Pines, Aronson and Kafry (1978) define burnout and a second concept tedium, as states of mental, physical, and emotional exhaustion. The symptoms of both burnout and tedium include fatigue, emotional draining, helplessness, hopelessness, negative self-concept, and a negative attitude to life and people. Pines et al. (1978) differentiate

between the two concepts of Burnout and Tedium by clarifying the origins of each. They argue that tedium is the result of any daily chronic stress, whereas burnout is the result of constant or repeated stress related to a deep involvement with people over prolonged periods of time. The researchers conclude that tedium is usually an antecedent of burnout.

In addition, Pines et al. (1978) define burnout by comparing it to other concepts. For example, they argue that job alienation is a different phenomenon from burnout because job alienation does not originate in, nor depend on, the initial excitement and idealism of the helping professional, as does burnout; clinical depression is a separate concept in that the causes of depression are rooted in the person. Comparatively, burnout is a psycho-social phenomenon, the sources of which are environmentally determined (Pines et al., 1978).

The three antecedents of burnout, according to Pines et al. (1978), are directly related to the very nature of the human service professions and to the professional themselves, in three ways. First, the work of the professional is emotionally straining. This strain depends on the demands of the job and the resources available. Helping professionals, repeatedly subjected to clients'

problems of varied complexities, are expected to be both adept and concerned. Over time, this altruistic situation becomes intolerable.

Second, the human service professionals has common personality traits. Most professionals are empathic and sensitive to the needs and suffering of others, are oriented to people rather than to objects, and are considered humanitarians. These very characteristics make these professionals susceptible to overidentification with the clients' pain and more susceptible to stress (Pines et al., 1978).

And the third antecedent is a client-orientation. The role of the professional is defined by the needs of those serviced. The relationship between client and professional is therapeutic, not reciprocal. Rewards are inherent in the job itself, and satisfaction is derived from the service. Further, the professional socialization of these human-service professionals emphasize and encourage this absolute ethic of altruism. Pines et al. (1978) argue that these three elements combine incrementally in the helping professional, making them particularly vulnerable to burnout.

According to Pines et al. (1978), human service professionals are prone to burnout for a variety of reasons including: (a) the combination of personality traits, professional training, organizational structures, and political and economic realities; (b) the fact that women who make up the majority of helping professions, are more likely to subscribe to the dedication ethic, and are stereotypically nurturing and idealistic; (c) the increasingly fewer extrinsic rewards such as monetary compensation and recognition; and (d) the fact that few professionals have the necessary skills to identify and/or meet their own needs.

The research of Pines et al. (1978) indicates that almost half of the studied subjects of various professions, experience burnout at the time of study, and a further third had similar feelings in the past. This research conclusion illustrates the prevalence of the phenomenon.

Unfortunately, the targeted human service professionals themselves are slow to recognize their symptoms as burnout and thus are even slower to research the phenomenon of burnout (Pines & Kafry, 1981). The reasons for this slow response are categorized into five areas: (a) the socio-political climate (along with the public funding) is less

than ideal for costly research; (b) there is an oversupply of human service professionals; (c) some of the human service professions are sex-role stereotyped as women's jobs and research into these women's job burnout is not a priority; in addition, women are socialized not to force issues; (d) human services have been traditionally ranked lower than other professions; and (e) management not administration is rooted in human services. For these reasons, Pines et al. (1981) feel that although necessary, research into burnout has not been accomplished and is overdue.

Among the contributions to the field of burnout and tedium, Pines and his colleagues (a) developed inventories to measure the extent to which individuals experience tedium (1981) and burnout (1988; the Burnout Measure); (b) the researchers elaborated further on the concept of burnout by differentiating the concept of Burnout from the concept of Tedium and (c) their research detailed a picture of a helping professional prone to burnout.

### Cherniss

Cherniss (1980), working from the socio-environmental perspective, focuses on the professional just beginning

their career. He contends that public criticism of the human service professions leads to an augmented demand for accountability. Thus, along with the expansion of professional roles has come more responsibility, commitment, and the need for professional effectiveness.

According to Cherniss (1980), human service professionals such as psychologists, social workers, doctors, therapists, transferred their professional practice to agencies and institutions. This migration from independent to institutionally-controlled practice led to an increase in stress, both on the organization, and on the attitude and performance of the individual within the organization. Traditionally, professionals were autonomous and self-regulating. The resulting modifications in the nature of work evolved to become the regulators of the new values and constraints. Thus by altering the work venue, such new problems as role conflict and decreased personal autonomy were added to the pre-existing inherent stresses and strains of professions in general.

Cherniss (1980) defines burnout in terms of these work stresses. He asserts that burnout is a process in which attitudes and behaviours are negatively altered in response to job stress. Ultimately, the response to job stress is

due to a loss of idealism and commitment, and is manifested by a variety of symptoms. The negative symptoms include detachment, loss of concern, pessimism, fatalism, decreased motivation, apathy, increased self-centredness, inflexibility, and a score of physical ailments.

Cherniss (1980) differentiates burnout from other concepts in a number of ways. First, he contends that temporary fatigue is not burnout, although it may be a symptom of it. Second, he argues that while socialization or acculturation are processes in which attitudes and behaviours respond to socially-exerted pressures, changes due to burnout are directly related to overload and job stress. The two concepts are similar in that both involved attitudinal changes in response to roles. However, burnout is an individual stress adaptation. Finally, he maintains that staff turnover is a sign of burnout, and not the process itself.

Believing that the first years are crucial as the professional make the transition from the student role to the accountable worker, Cherniss (1980) focuses on the human service professional new to the job. According to Cherniss (1980), this transition for the professional requires the most behavioural and attitudinal changes for the

professional. Cynicism, lowered self-esteem and decreased job satisfaction developed in the initial years, are likely to persist and are in response to situational restraints (Cherniss, 1980).

The research of Cherniss is of a longitudinal and comparative nature. It consists of in-depth interviews with human service professionals in public institutions. The research is influenced by a socio-ecological perspective of three factors: first, human behaviour is a dynamic interaction of individual and environment; second, the environment imposes demands on the individual; and third, even as the environment influences the individual, the individual continues to force the environment to conform to her/his needs and wishes. Cherniss focuses on the adaptive modifications of the new professional, and on the strain produced by the exposure to new environments.

As a result of his research, Cherniss proposes five major sources of stress: (a) a sense of incompetence or insecurity about one's performance (b) a disillusionment due to client attitudes which are not always motivated by gratitude (c) decreased personal autonomy and self-sacrifice due to institutional bureaucracy with its politics, paperwork, and red tape (d) a boredom resulting from the

lack of stimulation for high achievers and (e) decreased peer support which is not always present but always necessary.

Cherniss observed changes in work goals, in personal responsibility, in idealism, in emotional detachment, in psychological involvement in work, and in self-interest. He determined that by not dealing with stress, by not making the necessary changes, the individual would become more vulnerable to burnout.

Cherniss (1980) identifies four factors as antecedents of burnout: first, the institution which provides such experiences as orientation, heavy workloads, lack of clarity of goals, and leadership; second, the individual with her/his career orientation and with his/her private lives; third, the resistance within the profession itself to role change; in most cases, the causes of this resistance are unclear; and fourth, society influenced by (1) a decline of the community support systems, and (2) a weakening of professional credibility.

Societal influence is further clouded by a professional mystique, or set of myths believed to be true by a culture and by the profession itself. This mystique encompasses (a) a sense of competency in that the professional should feel,

and be, competent; (b) a sense of autonomy, which is a part of professional socialization; (c) a knowledge that the profession provides stimulation and a sense of fulfilment; (d) a sense of collegiality; and (e) a client attitude that is one of gratitude.

Cherniss (1980) views the concept of burnout from a cultural and organizational perspective. The information he attained is invaluable in the understanding of the phenomenon of burnout, its sources, and the implications for future research.

### Jones

The definition of burnout proposed by Jones (1981) includes the concepts of physical and emotional exhaustion, negative job attitudes, poor professional self-concept, and a decrease in empathic concern. Burnout is a work-stress reaction with behavioural, psychological, and psychophysiological facets.

Jones (1981) emphasizes that there is no empirical research yet identifying the causes, the consequences, or the cures of burnout. He developed the Staff Burnout Scale for Health Professionals (SBS-HP; Jones, 1981) and compared his new scale to the MBI. He reported that both yielded a

single score but that the SBS-HP comprises four subscales rather than three: work dissatisfaction, psychological and interpersonal tension, physical illness, and unprofessional patient relationships.

Jones (1981) argues that the correlates of burnout are categorized by three criteria: external stresses, stress reactions, and cognitive variables. External stressors include high patient-staff ratios with inherent overload, emotional drain, and high professional responsibility. Working in high trauma areas, shift work, and perceived family support are also determined to be external stressors.

Stress reactions include high turnover, increased absenteeism and tardiness, and increased addictions to alcohol and drugs. Further, the quality of the care, job dissatisfaction, property theft, and personal illness are considered by Jones as manifestations of stress reactions.

The cognitive variables are considered as mediators of burnout. Jones (1981) focuses on the personality component of the cognitive variables by using the concept of irrational beliefs, and the part the irrational beliefs play in perceptions and burnout.

Jones (1981) emphasizes the necessity for further research into the phenomenon of burnout. He argues for the

need of an operational definition, and a differentiation of the construct of Burnout from other constructs. The definition and differentiation could be accomplished only through the development of measuring inventories. Jones (1981) concludes that future research is essential to minimize burnout and its consequent rising costs.

### Meier

In 1983, Meier presented a model of Burnout based on a definition in which the professional has low expectations of positive reinforcement and high expectations of punishment, has little control of these reinforcers, and has decreased performance competence. A further key element of the model is a contextual processing in which environmental situations are influenced by the individual, by society, and by organizations. This interactionist approach maintains that the causes of burnout are a combination of all of these three influences and not limited to any one. In addition, the model provides an empirical framework within which to develop research, and to compare Burnout to other constructs.

Golembiewski & Munzenrider

Golembiewski and Munzenrider (1988) researched the construct of Burnout in order: (a) to link the observed phenomena to the established research in order to challenge the theories, (b) to determine that burnout was phenomenally, practically and theoretically significant and related to health, well-being and productivity, and (c) to establish the importance of understanding a social phenomenon.

Based on the three components of burnout (Maslach & Jackson, 1976), that is Emotional Exhaustion, Depersonalization and decreased Personal Accomplishment, Golembiewski and Munzenrider (1988) define burnout in terms of eight possible high versus low combinations of the three factors. High scores on each of these factors indicated high levels of burnout; low scores on each of the factors indicated low levels of burnout; varying combinations indicated varying levels of burnout.

Golembiewski and Munzenrider (1988) viewed the Maslach Burnout Inventory (MBI) as a measure of idealized chronic dimensional progression. Underlying the theory is the following rationale: depersonalization begins as a detached concern or objectivity and led to rigidity. Beyond some

point, this depersonalization undermines the professional's feeling of personal accomplishment. The resulting decreased personal accomplishment has two effects: a sense of negativism about others produced by treating them objectively; and a negative self-evaluation about one's performance. Emotional exhaustion, the most potent contributor to burnout, is viewed as a recursive end product of continually trying harder to improve the depersonalization and emotional exhaustion.

The phases in Golembiewski and Munzenrider's model (1988) progress from reported low levels of Depersonalization, Personal Accomplishment and Emotional Exhaustion to reported high levels on each of the dimensions or Burnout. They argue that there are advantages to the phase model of Burnout including: the ability to measure burnout in large numbers, to classify the end of a burnout process, to identify individual differences in the mid-range scores, and to identify particular interventions.

The research by Golembiewski and Munzenrider (1988) provides key information to the understanding of burnout. Major contributions included: the linking of self-esteem, job involvement and autonomy to levels of burnout; the empirical determination that women are more prone to

developing burnout in that they (a) serve in helping professions and are more likely to invest their emotions in their work and (b) differ significantly from men in their levels of depersonalization and decreased personal accomplishment (a difference not accounted for by age or ethnic variables); and lastly, the foundation for the development of further models in the field of Burnout.

### Leiter

In 1988, Leiter and Maslach investigated the impact of selected variables on the construct of Burnout. They determined that emotional exhaustion leads to greater depersonalization, which in turn leads to diminished personal accomplishment. Subsequently, Leiter (1988) reported that workers experience emotional exhaustion due to such work stressors as inadequate resources and excessive demands. The workers compensate for this exhaustion by losing their personal commitment, devaluing their accomplishments and depersonalizing their clients.

In later studies, Leiter (1991) conceptualized the construct of Burnout as a cognitive-emotional reaction to chronic stress. He argued that emotional exhaustion holds a central position as the precursor to the other two

dimensions as postulated by Maslach and colleagues. He evidenced this relationship by asserting that workers not reporting an emotional exhaustion but exhibiting behaviours that impersonalize their clients, are experiencing a job-related difficulty other than burnout (1991).

Subsequently Leiter (1993) revised the model of Burnout such that Emotional Exhaustion led to Depersonalization. However, Emotional Exhaustion and Personal Accomplishment developed in a parallel fashion.

In addition, Leiter differentiated Burnout from such other constructs as Occupational Stress (Cox, Kuk & Leiter, 1993) and Depression (Leiter & Durup, 1994). He contended that differentiating a measure of burnout from those measures of similar concepts or syndromes is necessary to develop the construct and evaluate its validity.

The research by Leiter has increased the understanding of the construct of Burnout. In differentiating between concepts and by evaluating and developing models, Leiter has identified key information in the field of Burnout.

### Summary

Much of the research that followed Freudenberger's introduction of the term burnout has been of an anecdotal

nature. Of the few studies that are empirically-based, most are riddled with methodological limitations. According to Golembiewski and Munzenrider (1988) burnout research has (a) been episodic and ambiguous; (b) portrayed burnout as an acute phenomenon that ignored the chronicity factor; (c) failed to recognize the organizational component; and (d) focused on outcomes rather than antecedents. Research beginning with, and building on the seminal work of Maslach and colleagues, has continued to refine and redefine the multidimensional nature of burnout. Nonetheless, the limitations and problems associated with this area of research persist. We turn now to a summary of these limitations.

#### Limitations Of Previous Research Related To Burnout

From a review of the literature, it is evident that there are numerous limitations in the area of burnout research (Einsiedel and Tully, 1981). These limitations can be categorized into analytical, definitional, and psychometric perspectives.

### Analytical Limitations

The limitations encountered in the empirical literature on the construct of Burnout from an analytical perspective focus on five issues: the nature of the research, concept interrelations, diversity of perspectives, levels of analysis and the research attitude.

Nature of the research. As previously noted, the research on burnout has been mainly anecdotal in nature. MacNeill (1981) stated that there is a lack of accuracy in design and research methodology. For example, although burnout was first identified as a discernible phenomenon in 1974, it was not until Maslach (1981) organized her qualitative data into an inventory that it was quantitatively assessed.

According to Meier (1984), there is a great deal of information on burnout, but still very little empirical validation of propositions, suppositions, and assumptions. The research community pays scant attention to the concept of Burnout despite the consequences of burnout for an overwhelming number of professionals. What is needed is more empirical research (Meier, 1984).

Concept interrelations. Research has failed to acknowledge the nature and extent of the relations between Burnout and other constructs. For example, MacNeill (1981) declared that the descriptions of burnout are similar to the empirical data on occupational stress. He maintains that the theory and possible methodology of measurement already exist in the occupational stress literature and that burnout is actually a form of this stress.

On the other hand MacNeill (1981) asserted that the field of occupational stress is rich in empirical data that could contribute to the pool of knowledge on burnout. Burnout could be validated as a unique, rather than a redundant construct through the clear delineation of relations between Occupational Stress and Burnout.

Other experts differentiate between Burnout and such constructs as Job Alienation (Pines et al., 1981), Fatigue (Cherniss, 1980; Pines et al., 1981) Occupational Stress (Cox et al., 1993) and Depression (Firth, McIntee, McKeown & Britton, 1986 and 1987; Glass, McKnight, & Vladimarsdottir, 1993; Leiter & Durup, 1993; Meier, 1984; Pines et al., 1981)<sup>2</sup>.

Diversity of perspectives. The literature flourishes with numerous perspectives within which the phenomenon of

burnout is studied. Kamis (1981), Maslach (1981), and Carroll and White (1982) each developed their own theory of burnout.

Kamis (1981) utilize an epidemiological methodology to define and study burnout. By defining epidemiology as the study of the distribution of phenomena in specific populations and of the variables in the development and continuance of these phenomena, Kamis (1981) concludes that this perspective could determine causal, predictive, and risk-factor indicators of the phenomenon of burnout.

Carroll and White (1982) analyze Burnout by applying an ecological model based on two key factors - the person and the environment. According to the model, the person is surrounded by a set of environmental systems including: the microsystem or the smallest unit of society (i.e. the office); the mesosystem or the institution with several smaller work units; the exosystem or community and family that impact on the individual; and finally, the macrosystem or the culture or world. Each system is unique, dynamic, and interacts with the other systems. This model also describes the relations and the impact of person-environment on Burnout.

Maslach (1981) uses socio-psychological analyses in her study of Burnout. She believes that the decline of community and family increases the reliance on institutions for help. This increased demand for support results in larger institutions with more specialized staff, and unfortunately, more inherent organizational stress placed on the professional. Burnout is the consequence of this progression of events of increased stress and the individual's response to it.

Each of these theorists explains burnout from their differing perspectives. However, the multitude of perspectives regarding the structure of Burnout confounds the issue of clarity and parsimony in the determination of a universal or standard definition of burnout.

Level of analysis. Heifetz and Bersani (1983) asserted that a major difficulty in burnout research was the multitude of differing levels of analyses including: (1) operational definitions, or negative outcomes, or predictive values; (2) models of individual versus organizational concepts (Einsiedel & Tully, 1981); and (3) combinations of various levels within one study [e.g., the **individual** concerned with stress and burnout, and the **organization** with absenteeism, turnover, and job performance (Shinn, 1982)].

Research is conducted by sociologists on one level and by psychologists on another level, but both groups are concerned with job satisfaction and job strain. Concepts are related to Burnout but are analyzed on varying, and not necessarily comparable levels.

Research attitude. Most studies on burnout are necessarily negative in nature because of the negative sequelae and impact on the individual and the environment. The studies focusing on the positive side of stress are studies from a preventative and not from a determinant perspective.

Summary. Problems encountered in the investigation of the construct of Burnout, from an analytical perspective, can be categorized as the nature of the research, concept interrelations, diversity of perspectives, levels of analysis and the research attitude. This set of difficulties is only one of the cited limitations in Burnout research.

#### Definitional Limitations

The next category of limitations is one of definition. Definitions are neither true nor false, only more or less useful (Berger, 1969). The choice of a definition is

actually a matter of taste. According to Berger (1969), there are three alternatives in choosing a definition: (a) a functional definition which permits a more unambiguous line of analysis, (b) a definition used in substantive research to determine what is relevant or not, and (c) a constant in all fields of analysis. If there is a discrepancy, it is necessary to consider utility.

Substantive research can only proceed within a frame of reference that defines relevance in terms of research (Berger, 1969). In order to develop a theory of burnout that can be applied in varying occupations to determine antecedents and consequent possible interventions, an integration of the existing knowledge and a verified, standard definition is needed. Einsiedel and Tully (1981) found that the empirical research on Burnout lacked a standard definition, thereby rendering validation and generalizability to be problematic. From the perspective of definition, there are four categories of issues: variety, meaningfulness, foundation (the Medical Model) and assumptions.

Variety of definitions. Burnout has been defined in terms of a process with stages (Farber, 1983; Veninga, 1981), as an end product (Cherniss, 1980a, 1980b; Edelwich &

Brodsky, 1980; Maslach, 1981; Pines & Kafry, 1981) and as a syndrome with a multitude of symptoms (Freudenberger, 1975).

Based on their definitions, each of these researchers developed their own theories, models, and measurement tools.

What remains to be accomplished is a standardization of definition required as a basis for collective research.

Meaningfulness of definition. Freudenberger (1983) asserted that researchers tend to be inflexible in their thinking when there is no clear body of knowledge. With this in mind, Freudenberger (1983) identified two definitional problems. First, the term burnout had tended to become less meaningful by overextension and overusage. The term had become a cliché, a panacea for the ills of a profession or of a society. Freudenberger concluded that to increase the effectiveness of research into the concept of Burnout, such disciplines as sociology, political science, and business administration needed to provide input. The second definitional issue for Freudenberger (1983) involved the Medical Model.

Foundation (the Medical Model). Freudenberger (1983) asserted that burnout had been defined within the medical model which has its roots in pathology. Inherent in the medical model is the use of disease, and its signs and

symptoms. By basing a theoretical model on a system of maladaptive behaviours, researchers limits the possibilities and applications of the model. This pathological perspective of burnout biases any data obtained and limited data applicability.

According to Freudenberger (1983), a model of Burnout should be viewed in terms of social systems, values, and processes. He reasons that a number of changes within society including the feminist movement, the decline of family and community, and a large disparity in religious beliefs, has culminated in an increase in an individual's vulnerability to burnout. Freudenberger (1983) concluded that this vulnerability must be studied from the perspective of the social milieu in which it grew.

Definitional assumptions. Inherent in each of the definitions of burnout proposed by various researchers are assumptions based on individual and differing theories. For example, Kamis (1981) in defining her model, lists the assumptions underlying the model as related to content and concepts (i.e., identification of predisposing, precipitating and perpetuating determinants), and measurement and methodology (presented model is one of causality). These assumptions are particular to her model

alone.

Summary. Although assumptions must be thoroughly explained in order to avoid problems with replication, generalizability, and validity, this is not always accomplished. Ultimately, there is only one universal, underlying assumption in the theory of burnout - that it must be preceded by commitment (Farber, 1983; Heifetz and Bersani, 1983).

#### Psychometric Limitations

At least two psychometric limitations associated with burnout research have been proposed. The first is the nature of the study and the second is the variety of assessment tools.

The Nature of the study. Einsiedel and Tully (1981) believed that longitudinal studies are more appropriate in the study of Burnout. Burnout is not an immediate reaction to causal factors. Rather, it is a chain of incidents, spread over a length of time which vary according to the individual and the circumstances. Burnout, according to their understanding, is a chronic, insidious, and pervasive phenomenon. Because of the temporal factor in the development of burnout, longitudinal studies therefore

provide more relevant information on the systematic process.

Unfortunately, a cross-sectional format has been utilized by the majority of researchers.

The Nature of the measurement. Until 1976 there were few assessment tools to evaluate Burnout. The number of such tools has increased but there was still an ongoing need for psychometric validity of the inventories, and of the construct of Burnout itself. Three of the tools, the Maslach Burnout Inventory, the Staff Burnout Scale, and the Burnout Measure (formerly the Tedium Measure), are still the most comprehensive and better validated of the growing list.

However, the tools have inherent problems. First, each is a self-report questionnaire which assumes that the respondent is accurately evaluating their own present situation and condition, and is not unduly influenced by unrelated factors. And second, even though the inventories measure a common concept, there are definitional differences and consequently, differences on the measured factors.

Summary. A solution to the psychometric problems in burnout research is necessary. Research replicability, generalizability and validity, cannot be accomplished without a clear idea of the construct in question. A universal definition and solid psychometric properties of

the construct of Burnout are essential.

### Conclusion

Although there continue to be many limitations associated with Burnout research, one of the most serious is the lack of a clear and universally-accepted definition of the construct itself. Many definitions exist, but each is specific to a particular theoretical perspective. What is needed now is a universally-accepted definition of burnout or a construct validation study that investigates the nomological network of Burnout. More specifically, this area of research demands a knowledge of which variables impact on the multidimensional construct of Burnout (i.e., between-network relations) and the extent to which the three facets of Burnout impact on each other (within-network relations). The most meaningful approach to such construct validation, is to study the process within the framework of a particular profession. As noted earlier, the present thesis studies the process within the framework of the nursing profession.

## Construct Validation of Burnout

According to Cronbach and Meehl (1955), construct validation refers to the scientific validation of tests and measures as indices of postulated attributes (Bentler, 1978). Construct validation is the interplay of the complementary processes of theory construction and test development (Byrne, 1989). Thus construct validity entails two methods of inquiry: validation of a construct, and validation of a measuring instrument. In construct validation, confirmation is needed in support of hypothesized construct relations among (a) the facets of the construct (within-network relations), and (b) other constructs that are known to be theoretically linked to the construct under study (between-network relations), in order to establish a theoretical network or nomological network of the hypothesized construct (Byrne, 1989).

Construct validation of a measuring instrument seeks evidence that the instrument indeed measures the traits it purports to measure. For example, subscales of an instrument demonstrate construct validity if they exhibit a factor structure consistent with the underlying theory (Byrne, 1989).

The connection between construct validation and causal modeling was first elucidated by Bentler (1978) who declared that construct validity of a theory refers to the empirical adequacy of a causal model, evaluated on relevant data by appropriate statistical methods. In other words, a theory can be validated through the use of causal modeling procedures. Because the methodology associated with this analytical approach demands that the researcher postulate both between- and within-network relations a priori, the specified model is grounded in theory. This view of construct validity extends the definition of Cronbach and Meehl (1955) by focusing on the validation of a theory by testing its nomological network of construct relations.

Limitations associated with burnout research necessitate studies of its construct validity. Implicit in the conduct of between-network research is the specification and testing of causal linkages among the related constructs.

The intent of this thesis is to investigate burnout in the nursing profession by exploring the causal linkages among salient variables as they impact on the construct of Burnout.

Structural equation modeling procedures which furnish a statistically and theoretically-sound method for evaluating

causal effects from nonexperimental data (Bentler, 1978; Bentler & Woodward, 1979) were employed in the thesis. The technique of structural equation modeling cannot prove causality but does assist in the choice of relevant causal hypotheses by eliminating those not supported by empirical evidence (Bentler, 1978). Although, admittedly, a longitudinal study of the Burnout construct would yield more rigorous findings (Leiter, 1993; Schaufeli, Maslach & Marek, 1993), practical constraints of time and money necessarily limited the design to a cross-sectional study.

In the present study causal modeling procedures are used to investigate the construct validation of Burnout as it relates to the nursing profession. Based on a review of substantive research concerned with burnout among nurses, and psychometric research concerned with the validation of a three-factor structure of Burnout as defined by Maslach and colleagues (1976), a model of the nomological network is proposed and tested. The decision to use the theory of Maslach and Jackson (1976) and thus utilize the Maslach Burnout Inventory (1981) was based on the fact that (a) the theory of Maslach and Jackson is the foundation of many other theorists' conceptions of Burnout including Pines,

Meier, Golembiewski and Munzenrider, and Leiter, (b) the Maslach Burnout Inventory was the first inventory designed to measure Burnout, and (c) the MBI is the most widely used burnout measure and is thus well validated across numerous and varied samples. We turn now to the hypothesized model of Burnout structure as it bears on the nursing profession.

#### Hypothesized Model of the Structure of Burnout

Nursing is one of the careers identified as being at high risk for the phenomenon of burnout (Maslach & Jackson, 1986). Inherent in the work nurses perform, are many of the antecedents for burnout (Buunk & Schaufeli, 1993). Following a thorough review of the empirical research (Blau, 1993; Greenhaus & Parasuraman, 1986; Lee & Ashford, 1996; Morrow, Mullen & McElroy, 1990; Swanson, 1992; Watkins & Mezydlo, 1995), salient variables were selected for inclusion in the proposed model of Burnout; selection was based on the following criteria: (a) the frequency of variable utilization, (b) the association between variables be at a moderate level, (c) the identification of the variables reported by nurses as those having an important

impact on their quality of worklife, and (d) the research findings being based on previous studies of burnout among nurses. It is important to note that for pragmatic reasons, three particular variables were not considered in model specifications. These were **Coping Styles**, (Blau et al., 1993; Boyle, Grap, Younger & Thornby, 1991; Duquette, Kerouac, Sandhu & Beaudat, 1994; Greenhauss & Parasuraman, 1986; Leiter, 1991, 1992; Lewis & Robinson, 1992; Swanson, 1992;), **Support** (Attridge & Callahan, 1989; Constable & Russell, 1986; Buunk & Schaufeli, 1993; Eisenberger, Huntington, Hutchison & Sowa, 1986; Ganster, Fusilier & Mayes, 1986; Kaufmann & Beehr, 1986; Lee & Ashford, 1996; Robinson, Roth, Keim, Levenson, Flentje & Bashor, 1991; Stechmiller & Yarandi, 1993; Boyle, Popkess-Vawter and Taunton, 1996; Winnubst, 1993) and **Depression** (Frone, Marcia & Cooper, 1995).

Overall, the review of empirical literature revealed personal and organizational variables to be the primary contributing factors in the determination of burnout for nurses. The hypothesized model summarizes this proposed nomological network and is presented schematically in Figure 1.

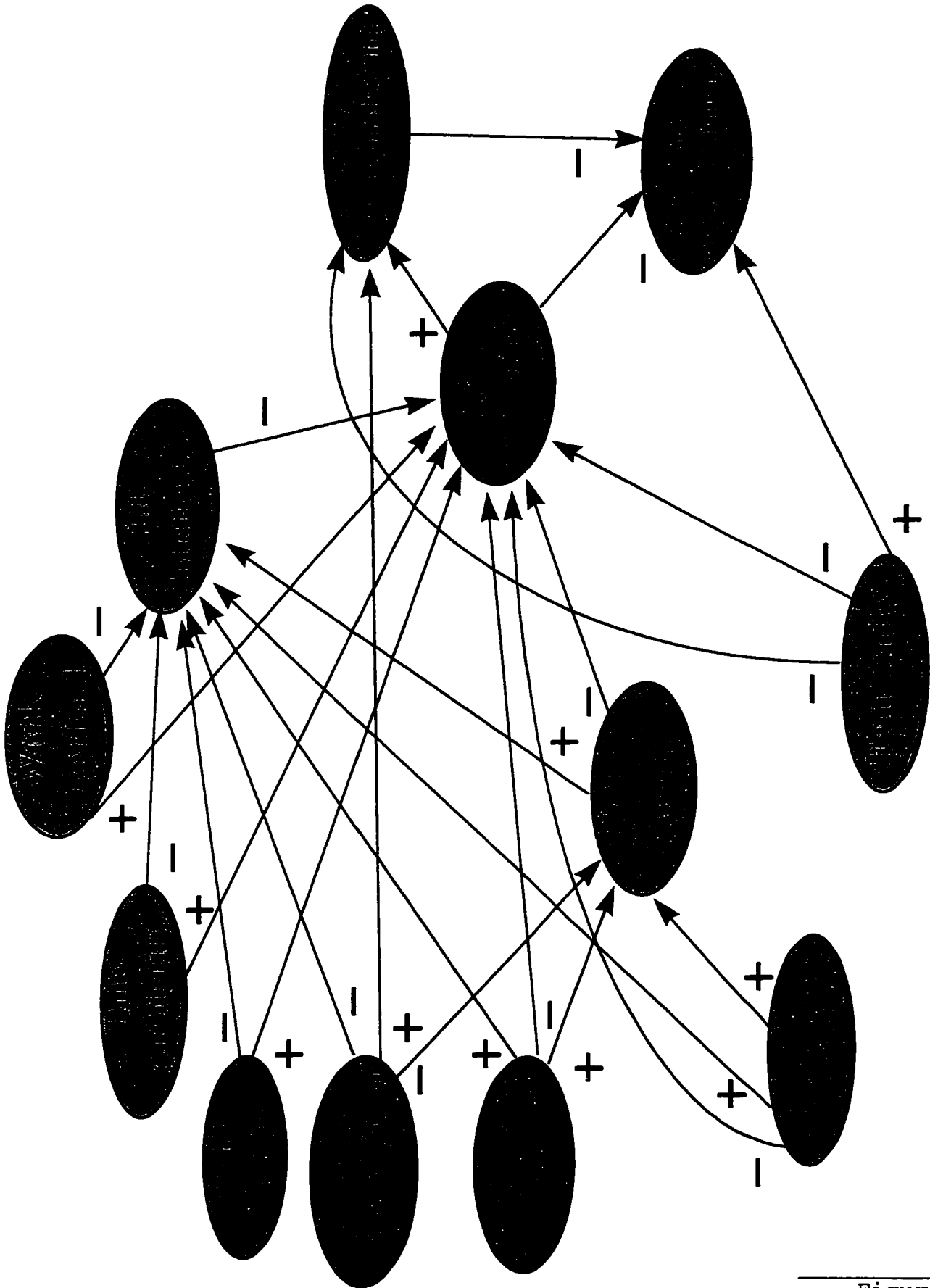


Figure 1

As depicted in Figure 1, salient personal variables selected are: External Locus of Control, Job Satisfaction, Professional Identity, Femininity, and Self-esteem. The arrows in Figure 1 depict an impact of one variable on another. The signs indicate the nature of that impact (e.g., a plus sign indicates that as Professional Identity increases, Job Satisfaction increases; and a negative sign indicates that as Job Satisfaction increases, Emotional Exhaustion decreases).

**Locus of Control** is a perception of one's control over life's events (Rotter, 1966). **Job Satisfaction** is an internal indicator of correspondence representing the individual's appraisal of the extent to which the work environment fulfills her requirements (Dawis and Lofquist, 1982). **Professional Identity** is the degree to which the nurse identifies psychologically with work, or is the importance of work in relation to the individual's total self-image (Lodahl and Kejner, 1965). **Femininity** defines the personality that typically exhibits the characteristics of female stereotypes (Spence & Helmreich, 1978). **Self-esteem** is the personal subjective evaluation of worthiness expressed in attitudes to the self and having such external

indices as behaviour (Coopersmith, 1967).

Within the hypothesized network, the postulated causal influences signified by the arrows are as follows: External Locus of Control impacts negatively on Job Satisfaction and Self-esteem, and positively on Depersonalization; Professional Identity impacts positively on Job Satisfaction and Self-esteem, and negatively on Emotional Exhaustion; Self-esteem impacts positively on Job Satisfaction and negatively on Emotional Exhaustion; Femininity impacts negatively on Emotional Exhaustion and Depersonalization, and positively on Personal Accomplishment; Job Satisfaction impacts negatively on Emotional Exhaustion.

The organizational variables considered salient are Workload, Role Conflict, Role Ambiguity, and Autonomy. Workload involves job complexity and demands (Farber, 1983).

Role Conflict is the dichotomous situation of conflicting, competing demands (Kahn, 1973; Kahn et al., 1964). Role Ambiguity is the experience of unclear goals, status, and accountability (Farber, 1983). Autonomy is independent, self-directed thought and action in the job (Cherniss, 1980).

Within the hypothesized network the postulated causal

influences of the organizational variables signified by the arrows are as follows: Workload impacts positively on Emotional Exhaustion and negatively on Job Satisfaction (i.e., as the workload increases, Emotional Exhaustion increases and Job Satisfaction decreases); Role Ambiguity and Role Conflict impact negatively on Job Satisfaction and positively on Emotional Exhaustion; Autonomy impacts positively on Job Satisfaction and Self-esteem, and negatively on Emotional Exhaustion.

A review of the substantive literature wherein each of the variables has been linked to the nursing profession, is now presented.

### Personal Variables

Locus of Control. Rotter (1966) defined locus of control as the person's perception of control over their world. People who have an internal orientation assume responsibility for their lives while those with an external orientation tend to feel they are lacking control over their lives and assume little responsibility for what happens to them.

Studies demonstrate nurses with an external orientation posit that outcomes are either the result of others'

actions, or the result of luck. In a nursing population, locus of control has been linked to such factors as autonomy and decision-making abilities (Alexander, Weisman & Chase, 1982).

Storms and Spector (1987) stated that nurses with external locus of control are more likely than internal people to respond to frustration with counter productive behaviour. Research indicates that nurses classed as "externals" have a greater alienation from their job and from themselves, and have increased levels of stress and burnout (Dailey, Ickinger & Coote, 1986; Keane, Ducette & Adler, 1985; Topf, 1989).

Job Satisfaction. Although the literature provides a variety of definitions of job satisfaction, the underlying concepts of the various definitions postulate that it is a positive emotional state ensuing from the appraisal of one's job, a perception that the job fulfils one's important job values (Locke, 1984). Job Satisfaction is a complex and well-researched construct as confirmed by the many studies on Job Satisfaction and numerous other variables (Blegen, 1993).

Loher, Noe, Moeller & Fitzgerald (1985) examined the relationship between job characteristics and satisfaction

and concluded that the more complex and enriched a job is (as is nursing), the more likely the person in that job will have a high need for personal growth. Dolan (1987) demonstrated that job dissatisfaction is a reliable indicator of burnout.

In a comparison of general staff nurses and Intensive Care Unit (ICU) nurses, both samples reported job satisfaction (Maloney, 1982). Interestingly Trait Anxiety scores of general staff and ICU nurses have been found by Wallace-Barnhill (1981) to be low in ICU nurses (cited in Hart, 1987), and higher in non-ICU nurses (Maloney, 1982).

Researchers have linked Job Satisfaction to other variables including: Control of the environment (i.e., Locus of Control) (Tetrick and LaRocco, 1987); Autonomy (Cavanagh, 1992; Jamal, 1990; Loher, Noe, Moeller and Fitzgerald, 1985; Stamps & Piedmont, 1986); and Role Conflict which negatively correlates with Job Satisfaction (Chacko & Wong, 1984; Klenke-Hamel & Mathieu, 1990; Mitchell, 1989; Tetrick & LaRocco, 1987).

According to Ashley (cited in Stamps & Piedmont, 1986), socially-determined sex-roles play a part in work satisfaction. In working with nurses, Landeweerd & Boumans (1988) demonstrated that high Job Satisfaction is related to

internal Work Motivation and meaningfulness. In a meta-analysis of Job Satisfaction as it related to the nursing profession based on 48 studies that involved a total of 15,048 nurses, Blegen (1993) determined that Job Satisfaction is most strongly related to Stress and Commitment, less strongly with Autonomy and Locus of Control, and least strongly with Professionalization. Kovner, Hendrickson, Knickerman and Finkler (1994) reported that remuneration, an extrinsic reward, ranks as the primary consideration in a definition of Satisfaction, followed by Autonomy and Professional Status.

Professional Identity. Professional Identity, a concept developed in the present study, was first conceptualized as Job Involvement in 1965 by Lodahl and Kejner who developed an inventory to measure the concept (JIS; 1965). According to their concept (Lodahl & Kejner, 1965), job involvement is the degree to which an individual identifies psychologically with work, is the internalization of the values regarding the goodness and the importance of work, and is the ease with which the professional can be further socialized by the organization. Job involvement is the end product of cultural, professional and organizational socialization processes to the extent that the importance of

work becomes reflected in one's overall perception of self.

Job involvement is the degree to which the person's performance affects her or his self-esteem. It is resistant to environmental change due to the nature of the job and is relatively stable over time. Job involvement is associated with traits of high achievement desire, mobility, drive, activity and aggression. Lodahl and Kejner (1965) noted that the main determinant of job involvement is a value orientation toward work that is learned through socialization. In this present thesis, the concept of Job Involvement was expanded to include the sense of values and ethics specific to the nursing profession and was renamed Professional Identity.

Leiter (1991) contends that values indoctrinated during professional socialization such as valuing and committing to patients, are at odds with the Burnout dimension of Depersonalization. In other words, Job Involvement or Professional Identity is inversely related to Depersonalization.

Other researchers link Job Involvement, or Professional Identity, to Burnout. For example, Runyon (1973) reported that Job Involvement is largely a function of the Locus of Control dimension. People with an External Locus of Control

have low Job Involvement (Evans, cited in Hall & Mansfield, 1971).

In their study, Lodahl and Kejner (1965) found that nurses with higher Job Involvement (Professional Identity) report higher levels of Job Satisfaction. In additional studies, Shoham-Yakubovich, Carmel, Zivanger and Zaltoman (1989) found that for nurses, Professional Self-image is positively related to Autonomy and Job Satisfaction; Jamal (1984) asserted that Professional and Organizational Commitment moderates stress and performance.

Femininity<sup>3</sup>. In 1972 Bardwick and Douvan summarized characteristics of sex-role stereotypes such that women, socialized in different ways to be warmth-expressive (Bardwick & Douvan, 1972; Gilligan, 1982), are described as dependent, passive, nonaggressive, noncompetitive, having an inner orientation, supportive, empathic, sensitive and nurturing; in contrast men are independent, aggressive, assertive, having an outward orientation, rational and self-confident.

A review of 48 studies which explored nurses' personalities concluded that nurses as a group share such characteristics as nurturance, submission, and dependence, and have little dominance, leadership, and autonomy

(Muhlenkamp & Parsons, 1972). Experts argue that the image of nurses is one of a traditional, stereotypic nature and confirm this image by citing nursing theorists who interpret nursing behaviours as those typical of an oppressed group (Attridge, 1996; Attridge & Callaghan, 1989; Bowman, 1993; Hatcher & Spence Laschinger, 1996; Martin, 1990; Stamps & Piedmont, 1986) of low social status (Cherniss, 1993).

VanYperen, Buunk and Schaufeli (1992), have shown that nurses described as low in communal orientation are prone to burnout. Communal Orientation refers to the stereotypically-feminine trait of a desire for reciprocity of benefits in relationships with patients and a motivation to help in response to the needs of, and out of a concern for others. In other words, nurses who are altruistic and who are responsive to needs of others (i.e., are feminine), do not develop depersonalization (VanYperen et al., 1992)

The noted studies, however, are ground-breaking. Little research other than those studies cited has been conducted on nurses, and even less, if any, burnout research has been conducted using the personality variable of Femininity.

Self-esteem. Rosenberg (1965) focused his research on the dynamics of self-image during the developmental years of

adolescence. For Rosenberg, self-esteem is an evaluative attitude, a global property of personality and the summation of evaluations of self in diverse domains. Persons with low self-esteem have more neurotic tendencies, have greater difficulty with social interactions, and have lower aspirations and expectations for success based on negative evaluations and the availability of supportive reference groups than did persons with high self-esteem (Rosenberg, 1965).

In addition, research indicates that underlying processes in self-esteem include a sense of competence (Rosenberg, 1965); a competency motivation (White, 1959); an affiliation and a task success; power and worth; and a mastery of the environment (Woodworth, 1958). These processes link Self-esteem to other concepts as they impact on Burnout.

Research indicates that there are links between Self-esteem and variables in the present study, for example, reactions to **stressful environments**. Self-esteem is a component of self-regulation, the extent to which the self-system is maintained under strain (Ziller, 1969, cited in Wells & Marwell, 1976). In other words, self-esteem is the capacity to react to environmental stress. Low Self-esteem

correlates with shyness, guardedness, rigid conformity to values and increased authoritarianism and self-derogation (Rosenberg, 1965). In addition, it is believed that the relation between Self-esteem and Adjustment, and between Self-esteem and **Tolerance for Ambiguity**, is curvilinear (Stewart, 1968).

According to Coopersmith (1967), there is an positive association between **Autonomy** and Self-esteem. Persons with high self-esteem are more likely to be assertive and independent than persons with low self-esteem.

There are few studies that have focused on Self-esteem as it relates to nurses. In 1975, Manuel and Kimoski explored Self-esteem and its moderating capacity in female nurses and determined that the most important factor in Self-esteem for nurses is Job Complexity. Further, evidence was found for Self-esteem as a moderator in the relationship between Performance and Satisfaction. Mossholder, Bedeian and Armenakis (1982) discovered that Group Interactions have a greater impact on Job Performance and Job Strain in nurses with low, rather than high Self-esteem. In the same study, subjects with low Self-esteem were found to be more dependent on peers for Task Support than subjects with high Self-esteem. In their study Christensen, Lee and Bugg

(1979), concluded that there is a negative relationship between External Locus of Control and Self-appraisal. Burke (1982), in his study of 136 nurses, determined that nurses with more Self-esteem and Internal Locus of Control are more active and satisfied with their jobs than nurses with low Self-esteem.

Other studies have described nurses in terms of an oppressed group having low Self-esteem (Roberts, 1983), and have indicated that female nurses feel inferior and must work to maintain the status quo in hospital organizations (Bullough & Bullough, 1975; Campbell-Heider & Pollock, 1987; Tellis-Nayak & Tellis-Nayak, 1984).

Consistent with the review of the literature, the present study of nurses hypothesizes the personal variables of External Locus of Control, Job Satisfaction, Professional Identity, Femininity and Self-esteem to impact on Burnout. We turn now to a discussion of the organizational variables in the hypothesized model of burnout (see Figure 1).

#### Organizational Variables

The extensive literature review to determine the salient organizational variables utilized the same criteria for inclusion as did the determination of the personal

variables: that is (a) the frequency of variable utilization, (b) the association between variables be at a moderate level, (c) the identification of the variables reported by nurses as those having an important impact on their quality of worklife, and (d) the research findings being based on previous studies of burnout among nurses. In reference to organizational variables, the criterion of the identification of the variable by nurses as those having the greatest impact on the quality of their worklife (Baumgart & Larsen, 1992; Kramer & Schamlenberg, 1988; Kiely et al., 1992; Meltz & Marzetti, 1988; Ontario Nurses' Association, 1988; Ontario Ministry of Health, 1988, 1990; Parkin, 1995; Skelton-Green, 1996; Stamps & Piedmonte, 1986), was considered to be the most important. It should be noted that other organizational variables that impact on Burnout were not considered by nurses to be as important for the nursing profession but still relevant for other professions (e.g., physical properties in the environment; availability of extrinsic rewards such as pay and security; internal rewards such as collegiality; promotion; professional development; evaluation processes; monotony; supervisor support; and shift work). Those organizational variables included in the present thesis are Workload, Role Conflict,

Role Ambiguity and Autonomy. We turn now to a discussion of these variables.

Workload. Work has both a qualitative and a quantitative component (Farber, 1983; French & Caplan, 1973). Qualitative overload refers to job complexity or those tasks which are perceived as too difficult to complete satisfactorily. The quantitative overload component refers to having too many demands and too little time in which to meet them adequately. Research indicates that Work Overload contributes to Job Stress (French & Caplan, 1973).

Studies have linked Burnout in nurses and Workload (i.e., Overload). Pagel and Wittman (1986) reported that patient-care load and overtime for nurses predicts burnout.

Further predictors of Burnout in the nursing profession include Overload and Personality Hardiness (McCranie, Lambert & Lambert, 1987); and Role Ambiguity and Overload (Heim, 1991). Kiely, Ursell & Blyton (1992) demonstrated that nurses' workloads are a major source of job stress.

Role Conflict. Role Conflict is the occurrence of two or more contradictory demands (Kahn, 1973; Kahn et al., 1964). It is the conflict between the employees' demands and expectations and the employer's demands and expectations (Ivancevich and Matteson, 1980).

Studies have reported that Role Conflict is positively related to Emotional Strain and negatively related to Satisfaction (Jackson, 1983; Kahn et al., 1964; Organ & Greene, 1974). In addition, there is an interaction effect on individual Performance between Conflict, and Education and Leadership (Vredenburgh & Trinkhaus, 1983).

Bedeian, Mossholder & Armenakis (1983) have shown that nurses who demonstrate a propensity to leave, report Supervisor and Peer Role Conflict. Further, this perceived Role Conflict is negatively correlated with Job Satisfaction (Jackson, 1983; Posner & Randolph, 1979, 1980). Dailey and Ickinger (1986) reported that Role Conflict is related to Autonomy. Robinson et al. (1991), determined that Work Pressures are related to Burnout for nurses.

Role Ambiguity. Role Ambiguity is the discrepancy between the amount of information a person has and the amount she or he needs to perform the role adequately (Kahn, 1973). Role ambiguity is associated with a lack of clarity in an employees' rights, obligations and accountability (Farber, 1983).

Ivancevich and Matteson (1986) contended that role ambiguity is a lack of clarity about one's role, objectives and responsibilities, and that everyone experienced some

degree of ambiguity in change. Studies into Role Ambiguity (French & Caplan, 1970; Margolis, Kroes and Quinn, 1974 cited in Ivancevich & Matteson, 1980), have reported that Role Ambiguity is related to lowered Self-esteem and decreased Job Satisfaction.

Studies linking Burnout in nurses and Role Ambiguity include: leads to decreased Job Satisfaction and increased perceived Stress (Revicki and May, 1989); is a predictor of short-term Absenteeism (Firth & Britton, 1989); predicts Career Commitment (which shares some of the characteristics of Professional Identity) (Blau, 1985); is positively related to Emotional Strain and negatively related to Satisfaction (Jackson, 1983; Posner & Randolph, 1979, 1980); and is negatively related to Autonomy (Dailey and Ickinger, 1986; Posner & Randolph, 1979).

Nurses in other studies have identified that some of the major sources of their occupational stress include institutions with unclear and/or conflicting goals, and inadequate resources (Motowidlo, Packard & Manning, 1986; Steers, 1981; Wry, 1985).

Autonomy. Autonomy refers to the need to be self-governing, to be responsible for one's own actions.

Friedson (1973) maintained that autonomy in an occupation is

an important factor in job satisfaction. In much the same vein, Cherniss (1980) asserted that novices vary in their perception of the degree of autonomy that they are given, and that at some point, all professionals in institutions face a lack of autonomy not incurred by professionals in private or independent practice. This lack of autonomy is a source of dissatisfaction and frustration.

Autonomy, as defined by Hackman and Oldham (1976), is the degree to which there is freedom, independence and employee discretion in the job. Attridge and Callaghan (1989) argued that this autonomy is a critical variable in determining job stress.

In 1977 Wagner, Loesch & Anderson demonstrated that for nurses, respect, collegiality, tasks and autonomy or responsibility are important factors in job satisfaction. Kanungo (1980) found that nurses who are highly stressed, show greater autonomy-need satisfaction than low stress subjects. Weisman (1982) declared that nurses' perceived Autonomy is the greatest predictor of Job Satisfaction. Constable and Russell (1986) concluded that one of the major determinants of Burnout in nurses is low Job Enhancement, which included the factor of Autonomy.

Additional studies demonstrated that nurses identify the lack of autonomy and power as major sources of their occupational stress (Motowidlo, Packard & Manning, 1986; Steers, 1981; Wry, 1985). Pincus (1986) reviewed studies of Job Satisfaction for nurses and found that Autonomy is an important factor in their Nursing Practice and a source of stress. In 1989, Shalom-Yakubovich et al. reported that during a physicians' strike, nurses expanded their roles and responsibilities and in doing so, their professional autonomy and satisfaction increased.

In 1990, a Nursing Clinics of North America focusing on the dynamics of the nursing shortage, emphasized that autonomy and workload are the two most important factors in nursing dissatisfaction (Cowling, 1990; Ferguson, 1990; Regan, 1990). McCloskey (1990) reported that nurses experiencing low autonomy and reporting fewer relationships with co-workers, express low job satisfaction. Dwyer, Schwartz and Fox (1992) further determined that nurses with a greater preference for autonomy express more job satisfaction than those nurses who did not have a preference for autonomy. Kovner et al. (1994) demonstrated that nurses rank autonomy and professional status as important factors in satisfaction.

With the personal variables (External Locus of Control, Job Satisfaction, Professional Identity, Femininity, and Self-esteem) and the organizational variables (Workload, Role Conflict, Role Ambiguity, and Autonomy) in mind, we turn now to a discussion of the purpose of this present study.

#### The Purpose of the Study

The present thesis represents a construct validation study designed to investigate the structure of Burnout as it relates to the nursing profession. Specifically, the purpose of the study was to validate a proposed model of the nomological network of Burnout. In particular, the model described the impact of particular personal and organizational variables on Burnout (between-network relations) and the impact of the three facets of Burnout on each other (within-network relations). The study was designed to test two following hypotheses. These are as follows:

Hypothesis I: Based on the empirical literature reviewed earlier, the impact of personal and organizational

variables on Burnout, as portrayed in Figure 1, is a valid representation of the nomological network of Burnout as it relates to the nursing profession as a whole. More specifically, it is hypothesized that: (a) Professional Identity, Autonomy, Role Conflict, Role Ambiguity and Workload will impact directly on Burnout<sup>4</sup> and on Job Satisfaction, (b) Professional Identity, Autonomy and Locus of Control will impact on Self-esteem and Burnout, (c) Self-esteem impacts directly on Job Satisfaction and Burnout, (d) Job Satisfaction impacts directly on Burnout, (e) Femininity impacts on Emotional Exhaustion, Depersonalization and Personal Accomplishment, and (f) External Locus of Control impacts on Depersonalization. And finally, consistent with Leiter's theory (1991), Emotional Exhaustion is shown to hold the central position in the structure of burnout; as such it is shown to impact on Depersonalization and Personal Accomplishment; Depersonalization is hypothesized to impact on Personal Accomplishment.

Hypothesis II: Based on empirical findings that have shown reported levels of Job Satisfaction to be higher for

critical care nurses than for general staff nurses, it is hypothesized that the model determined to best represent the data for general staff nurses, as a whole, will exhibit a poorer fit to the data representing the critical care nurses. In other words, variables in the nomological network of Burnout for the critical care nurses are hypothesized to have different impacts than do the variables in the nomological network of Burnout for the general staff nurses. For this thesis, critical care nurses are defined as those nurses whose patients are physiologically unstable, desperately ill with an acute, critical illness, and are frequently sustained by technologically-advanced machinery. Critical care nurses are able to respond quickly and intelligently to physiological and emotional changes in their patients (Clochesy, Breu, Cardin, Rudy, & Whittaker, 1993). Patients under this definition are traditionally found in Intensive Care, Cardiac Intensive Care, Post-Anesthetic Care Units, Operating Rooms and Emergency Departments.

## METHOD

### Sample and Procedures

Eligibility for participation in the study required that the general staff nurses be employed at tertiary care hospitals having at least a 450-bed capacity. The rationale underlying this criterion was to insure that the impact of the organizational variables in the models was optimum. In other words, the organizational structure and practices of hospitals having more than 450 beds are more likely to impact at a greater degree on burnout than hospital organizations with a lesser number of beds. Further, these larger hospitals are more likely to have various critical care areas with patients of higher acuity. Two Ottawa hospitals, the Ottawa Civic and the Ottawa General, were chosen due to their geographic convenience and size. The Toronto Hospital was chosen for its size.

The determination of sample size addressed the large sample-theory demands associated with the analysis of covariance structures which provide the analytic strategy of this study (Boomsma, 1982; Fornell, 1983; Marsh, Balla & McDonald, 1988). Due to the necessity of the large sample

size, all full-time registered nurses employed as general staff at the three Ontario hospitals were considered for inclusion in the study. Packages of questionnaires were distributed to the general staff nurses on the wards. The nurses were asked to spend approximately 50 minutes and return the completed packages to the researcher within a two-week time frame, via hospital intramail, in the provided envelope which was addressed to the researcher. A follow-up letter was distributed as a reminder, three weeks after the initial contact.

The packages contained a demographic sheet with six questions; a series of questionnaires with 114 questions; and a covering document outlining the intent of the study, the option to participate, the completion procedures and a statement of anonymity and confidentiality of the responses.

Because of the number of inventories in the package and the variety of likert-like scales and choices of responses, each of the pages and each new inventory in the package began with a bolded version of the current scale being completed.

The completed packages were numbered upon receipt by the researcher in order to facilitate data entry and validity. Participants in the study were thus assured of confidentiality and anonymity.

A total of fifteen hundred questionnaire packages were distributed to the wards of three major hospitals in Ontario (The Toronto Hospital, The Ottawa Civic and The Ottawa General). Five hundred and sixty-seven of the packages were returned for a response rate of 37.8%.

Of the nurses in the sample, 15% were 20 to 29 years old, 45% were 30 to 39 years old, 28% were 40 to 49 years old, and 12% were over 50 years old. Twenty-seven percent were single, 2% single with children, 22% married, 37% married with children, 3% divorced, 8% divorced with children, and 1% were widowed. Of the overall sample of nurses, 3% had less than four years continued nursing experience, 48% had between five and twelve years, 26% had between 13 and 20 years, and 23% had over 20 years continued experience. Eleven percent worked only days, 2% worked only evenings, 4% worked only nights and 83% worked a combination of shifts, including 12-hour shifts. The nurses worked in various areas including 53% on medical-surgical units, 37% in critical care areas, 4% in oncology, 2% in clinic units and 4% in day units. Finally, 37% of the sample was obtained from Toronto and 63% from Ottawa. Results of the demographic survey are presented in Table 1, in a percentage format.

Table 1

Results in Percentages of the Demographic Survey for the Full Sample of Nurses (N = 544).

<u>Sex</u>		<u>Age (Years)</u>				<u>Marital Status (with Children)</u>			
<u>F</u>	<u>M</u>	<u>21-29</u>	<u>30-39</u>	<u>40-49</u>	<u>&lt;49</u>	<u>Single</u>	<u>Mar.*</u>	<u>Div.*</u>	<u>Widow</u>
94	6	15	45	28	12	27 (2)	22 (38)	3 (8)	1.0

<u>Nursing Experience (Years)</u>				<u>Area</u>	
<u>1-4</u>	<u>5-12</u>	<u>13-20</u>	<u>&lt;20</u>	<u>Medicine/Surgery</u>	<u>Critical Care</u>
3	48	26	23	63	37

<u>Shift</u>				<u>Hospital**</u>		
<u>Days</u>	<u>Evening</u>	<u>Nights</u>	<u>Combination</u>	<u>OCH</u>	<u>OGH</u>	<u>TTH</u>
11	2	4	84	46	17	37

Notes: \*Mar. = Married; Div. = Divorced.

\*\*OCH is Ottawa Civic Hospital; OGH is the Ottawa General Hospital; and TTH is The Toronto Hospital.

### Instrumentation

Collection of data involved the completion of a demographic sheet and several measurement instruments. The demographic sheet asked the respondents to identify their sex, marital status, age, length of nursing experience, area of work in the hospital and what kind of shift work they performed.

The package of several measurement instruments collected data as follows: **Burnout** was measured using the Maslach Burnout Inventory (MBI; Maslach & Jackson, 1986), which measures the three components of Burnout - Emotional Exhaustion, Depersonalization, and decreased Personal Accomplishment. Frequency of burnout symptoms are measured on a 7-point Likert-type scale such that high scores on the first two dimensions and low scores on the third dimension indicate Burnout. Reported subscale reliability coefficients estimated by Cronbach's coefficient alpha include 0.90 for Emotional Exhaustion, 0.79 for Depersonalization, and 0.76 for decreased Personal Accomplishment (Iwanicki & Schwab, 1981); 0.88, 0.75, and 0.77 respectively (Jackson et al., 1986); 0.90, 0.71 and 0.79 respectively (Constable & Russell, 1986); 0.90, 0.79, and 0.71 respectively (Maslach and Jackson, 1986); 0.86,

0.63, and 0.72 respectively (Powers & Gose, 1986); 0.82, 0.72, and 0.83 respectively (Wolpen, Burke & Greenglass, 1991); and an overall coefficient alpha of 0.72 (Stechmiller & Yarandi, 1993); and with nurses, Cronbach's alphas range from 0.75 to 0.91, and alphas from 0.65 to 0.87 (Hatcher & Spence Laschinger, 1996). Test-retest scores range from 0.53 to 0.82 (Maslach and Jackson, 1981); 0.60 to 0.82 (Maslach and Jackson, 1986); and from 0.65 to 0.87 (Hatcher & Spence Laschinger). In this present study, the Cronbach's alpha was 0.70.

**External Locus of Control** was measured using the Internal-External Locus of Control Scale (LCS; Rotter, 1966). The LCS is uses a 5-point Likert-type scale format. The LCS has been widely validated across a variety of populations (Lefcourt, 1976). Test-retest reliability for subscales has been reported as 0.65 to 0.79 (Rotter, 1966); and 0.81 (Tadmire and Hofman, 1985). Split-half reliability coefficients (Spearman-Brown) have been reported as 0.84 (Frost & Wilson, 1983). Alphas have been reported as 0.71 (Sheridan & Vredenburgh, 1978) and 0.81 (Luthans, Baack & Taylor, 1987). Cronbach's coefficient alphas have been reported as 0.77 (Goodman & Waters, 1987); and for nurses as 0.84, 0.85 and 0.88 (Dailey, Ickinger & Coote, 1986).

Kruder-Richardson Formula 20 for reliability has been reported as 0.72 (Bigoness, Keef & Du Bose, 1988). In this present study, the Cronbach's alpha was 0.55 for the overall scale, and 0.51 and 0.66 for the Internal and External scales respectively.

**Job Satisfaction** was measured using the Minnesota Satisfaction Questionnaire (MSQ; Dawis & Lofquist, 1983). The short form consists of 20 items measuring concepts that have been reported by nurses as important features of their worklife [i.e., Autonomy, Skill Utilization, Collegiality, Value, and Policies and Procedures (Attridge, 1996)]. The items are anchored in a 5-point Likert-type scale. Hoyt reliability coefficients for the 20 scales range from 0.97 to 0.59 (Dawis & Lofquist, 1983). Test-retest correlation coefficients range from 0.91 to 0.66 on the scales (Dawis & Lofquist, 1983). Cronbach's coefficient alphas have been reported as 0.91 and 0.92 (Klenke-hamel & Mathieu, 1990; Duxbury, Armstrong, Drew & Henly, 1984); 0.85 (supervision), 0.79 (pay), 0.72 (co-workers) and 0.72 (work) and an overall alpha of 0.87 (Chacko & Wong, 1984). Further alpha coefficients for the intrinsic scale and extrinsic scale are 0.73 and 0.81 respectively (Ivancevich, Matteson & Preston, 1982); and 0.86 and 0.81 respectively, with an overall

satisfaction of 0.90 (Jackson, 1983). In this present study, the Cronbach's alpha was 0.895.

**Professional Identity** was measured using the Job Involvement Scale (JI; Lodahl & Kejner, 1965). The short form consists of six items with a 4-point Likert-type scale such that a low score equates with high Professional Identity. The measure has been shown to have reliability and validity over a number of studies (Lodahl & Kejner, 1965; Rabinowitz & Hall, 1977; Rabinowitz, Hall & Goodale, 1977). The split-half correlations have been reported as 0.57 (Lodahl & Kejner, 1965), and 0.72 to 0.89 (Rabinowitz & Hall, 1977); correlation to the long form 20-item test was 0.87 (Lodahl & Kejner, 1965). The Spearman-Brown reliability has been reported as 0.73 (Lodahl & Kejner, 1965). Cronbach's coefficient alphas have been reported as 0.79 to 0.81 (Lodahl & Kejner, 1965); as 0.83 (Rose, 1969, cited in Rabinowitz & Hall, 1977); as 0.81 (Lawler, Hackman & Kaufman, 1973, cited in Rabinowitz & Hall, 1977); as 0.73 (Runyon, 1973, cited in Rabinowitz & Hall, 1977); as 0.65 (Baba & Jamal, 1991); and as 0.48 (Lance, 1991). Alphas have been reported as 0.81 (Siegel & Ruh, 1973); 0.79 (Gould & Werbel, 1983); and 0.59 (Huselid & Day, 1991). In this present study, the Cronbach's alpha was 0.70.

**Femininity** was measured using the Australian Sex-Role Scale (ASRS; Antill, Cunningham, Russell & Thompson, 1981).

The long Scale comprises 50 items on a 7-point Likert-type scale. Three items from each of the five scales (masculinity positive and negative, femininity positive and negative, and social desirability) were chosen randomly from this version. Cronbach's coefficient alphas for the scales range from 0.78 to 0.81 for the Masculine scale and 0.69 to 0.80 for the Feminine scale (Antill, Cunningham, Russell & Thompson, 1981); 0.67 and 0.78, 0.73 and 0.63 to 0.69 for the Masculine and Feminine Scales respectively (Marsh, 1987). In this present study, the Cronbach's alpha was 0.51 for the overall scale, and 0.42 and 0.47 for the Femininity and Masculinity scales respectively.

**Self-esteem** was measured using the Rosenberg Self-esteem Scale (SES; Rosenberg, 1965). The SES comprises 10 items using a 4-point Likert-type scale. Test-retest reliability of 0.62 and validity coefficients ranging from 0.56 to 0.79 have been reported (Byrne, 1983). In this present study, the Cronbach's alpha was 0.85.

**Workload** was measured using a subscale of the Michigan Organizational Assessment Questionnaire (MOAQ; Seashore, Lawler, Mirvis & Cammann, 1982). The MOAQ has a 5-point

Likert-type scale with a reported Cronbach alpha of 0.65. In this present study, the Cronbach's alpha was 0.73.

**Role Ambiguity and Role Conflict** was measured using the Role Questionnaire (RQ: Rizzo, House, & Lirtzman, 1970). The RQ has a 7-point Likert-type scale with low scores on the Role Ambiguity subscale indicating high Role Ambiguity and high scores on the Role Conflict subscale indicating high Role Conflict. Spearman-Brown internal reliability coefficients of 0.74 to 0.90 for Role Ambiguity and 0.81 to 0.94 for Role Conflict have been reported in samples of hospital employees (Seybolt & Pavett, 1979; Bedeian, Armenakis and Curran, 1980; Posner & Randolph, 1980; House, Schuler, & Levanoni, 1983; Kemery, Mossholder & Bedeian, 1987). Alphas have been reported as 0.71 for Role Conflict and 0.70 for Role Ambiguity (Brief & Aldag, 1976); 0.84 and 0.74 (Posner & Randolph, 1980) respectively; 0.89 and 0.79 (Bedeian et al., 1980; 1981) respectively; 0.78 and 0.79 (Bedeian et. al. 1983) respectively; and 0.85 and 0.81 (Kemery et al., 1987) respectively. Cronbach's coefficient alphas have been reported as 0.84 (Parasuraman, Drake & Zammuto, 1981) and 0.61 (Tetrick & LaRocco, 1987) for Role Conflict; 0.81 for Role Conflict and 0.77 for Role Ambiguity (Seybolt & Pavett, 1979); 0.84 for Role Conflict and 0.74

for Role Ambiguity (Randolph & Posner, 1981); 0.82 and 0.86 (Jackson, 1983) respectively; 0.82 and 0.77 (Ganster, Fusilier & Mayes, 1986) respectively; 0.55 and 0.60 (Lance, 1991) respectively; and for a nursing populations as 0.78, 0.83 and 0.84 for Role Conflict and 0.80, 0.83 and 0.86 for Role Ambiguity, (Dailey & Ickinger, 1986) and 0.76 for Role Conflict and 0.60 for Role Ambiguity (Baba & Jamal, 1991). In this present study, the Cronbach's alpha was 0.60 for the overall scale, and 0.83 and 0.82 for the Role Ambiguity and Role Conflict scales respectively.

**Autonomy** was measured using the questionnaire developed by Beehr (1976). The questionnaire has a 4-point Likert-type scale. Spearman-Brown internal reliability coefficient of 0.74 (Beehr, 1976) has been reported. In this present study, the Cronbach's alpha was 0.81.

### Data Analysis

All analyses were conducted based on the analysis of covariance structures within the framework of structural equation modeling using the EQS computer program (Bentler, 1992). Structural equation models represent regression equations with less restrictive assumptions that allow measurement error in both the explanatory and dependent

variables to be evaluated. Full structural equation models extend (a) the factor analytic model by permitting the specification of both direct and indirect effects among variables, and (b) the path analytic model through its use of multiple indicators of the underlying latent constructs (Bollen, 1989).

Structural equation modeling involves (a) the postulation of an a priori model, (b) the fitting of this model to sample data, (c) the evaluation of parameter estimates, and (d) modification of the model to establish a valid representation of the postulated structure for the population of interest (Bentler, 1990). In structural equation modeling, the researcher postulates a model of relations among particular variables a priori, and then tests the goodness-of-fit of the model to the sample data. Given findings of poor fit, the researcher may proceed in conducting post-hoc model-fitting procedures. As such, the model is respecified to include a previously omitted variable. It is critical to note, however, that such inclusion must be meaningful and theoretically grounded.

Testing of postulated the model. A postulated model is grounded in theory and empirical research. In most instances the initial model does not fit the data adequately. This

initial misfit, detected in part by disturbance effects, represents a misspecified model. This misspecification can be a result of an inappropriate inclusion or exclusion of a particular variable, or it can result from a fundamentally-flawed hypothesized model (Bollen, 1989).

Model respecification can involve (1) theoretical and substantive revisions and (2) empirically based revisions. Respecification is accomplished statistically using goodness-of-fit indices.

Goodness-of-fit indices. An important aspect of the data analyses entails the goodness-of-fit criteria to be used in evaluating the adequacy of model fit. The evaluation of model fit requires the use of several goodness-of-fit indices. In the present study, the goodness of fit indices used included the chi-square statistic ( $\chi^2$ ), the Comparative Fit Index (CFI; Bentler, 1990), the Expected Cross-validation Index (ECVI; Browne & Cudeck, 1989) and the Parsimony Index (PCFI; Mulaik, James, Van Alstine, Bennet, Lind & Stilwell, 1989).

Traditionally, model fit has been based on the Chi-square statistic (Byrne, 1994). However, one major problem with the  $\chi^2$  statistic is that it is sensitive to sample

size; the larger the sample, the greater the likelihood that the model will be rejected. Given that structural equation modeling is grounded in large-sample theory, this sensitivity of the  $\chi^2$  statistic is highly problematic. In addressing this limitation, statisticians have developed alternate indices that more appropriately reflect the goodness-of-fit of data to the postulated model (for a review, see Marsh, Balla & McDonald, 1988). These indices are typically termed "practical" or "ad hoc" criteria of fit since they reflect the degrees of covariation in the data. In the present thesis, the  $\chi^2$  statistic was accompanied by these additional indices of fit as described below.

The CFI is a revised version of the Bentler-Bonett (1980) normed fit index that adjusts for degrees of freedom (Byrne, 1993; 1994). The CFI is derived from the comparison of a restricted model with a null model. The index ranges from zero to 1.00 and a psychometrically-acceptable fit to the data is a value greater than 0.90 (Byrne, 1993; 1994)

The ECVI is proposed as a means to assessing, in a single sample, the likelihood that the model cross-validates across similar-sized samples from the same population (Browne & Cudeck, 1989). Specifically, it measures the

discrepancy between the fitted covariance matrix in the analyzed sample, and the expected covariance matrix that would be obtained in another sample of equivalent size (Byrne, 1993; 1994). Application of the ECVI assumes a comparison of models whereby an ECVI index is computed for each model and then all ECVI values placed in rank order; the model having the smallest ECVI value exhibits the greatest potential for replication size (Byrne, 1993; 1994).

The PCFI (Mulaik et al., 1989) is calibrated from the CFI. This coefficient weights model parsimony against its use of the data in achieving goodness-of-fit (Byrne, 1994). The PCFI ranges between 0.00 and 1.00.

In this present study, analyses involved the testing of postulated models such that given evidence of misfit, post-hoc analyses were conducted to identify ill-fitting parameters. The models were then respecified and re-estimated in order to establish a theoretically-sound model structure for each of the models (i.e., the models for the overall sample of nurses, for general staff nurses and for the critical care nurses). The analyses included (a) testing the factorial validity of the measuring instruments using confirmatory factor analysis; (b) the formation of the measurement model; (c) the formation of the calibration and

validation samples in order to test for invariance across the two samples; (d) the formation of the structural component of the model; (e) the test for invariance across the calibration and validation samples as a means of cross-validation; (f) the formation of a model for general staff nurses; and (g) the formation of a model for critical care nurses. We turn first to a description of these stages in the analyses.

Testing the factorial validity of the measures. It is important to emphasize that before the validity of the postulated structural paths in the full model of the nomological network can be adequately tested, it is imperative to first establish that the measuring instruments are appropriately measuring their underlying latent constructs. Therefore, based on the full sample of nurses, confirmatory factor analysis (CFA) was used to test the factorial validity of the observed variables as they relate to each instrument. Given evidence of model misspecification, post-hoc analyses were conducted in order to establish a theoretically and substantively better-fitting measurement model.

These analyses included model respecification of additional paths identified by the Lagrange Multiplier Test

(LM) as those contributing most to a better-fitting model, in particular, some misspecified parameters, factor cross-loadings and correlated errors. The LM test examines hypotheses that bear on the statistical viability of specified restrictions in a model (Byrne, 1994). The basic purpose of the LM test is to determine if the specification of certain parameters, initially constrained to zero, would lead to a model that better fits the data if the parameter were to be freely estimated (Byrne, 1994).

Formation of measurement model. The measurement model depicts the links between the latent variables and their observed measures, in other words the confirmatory factor analysis model (Byrne, 1994). For each latent construct in the postulated model of Burnout structure (see Figure 1), items from the related measuring instrument were grouped to form multiple measurement indicators. The items were combined to take advantage of the correlated errors within each of the measuring instruments.

This process was conducted such that the relations between observed variables and unobserved (i.e., latent) hypothetical constructs were defined by the measurement model (Byrne, 1994). In other words, each latent construct was measured by two or more indicator variables that

represented the observed variables. A schematic summary of all the latent constructs, together with their related indicators variables, is shown in Figure 2.

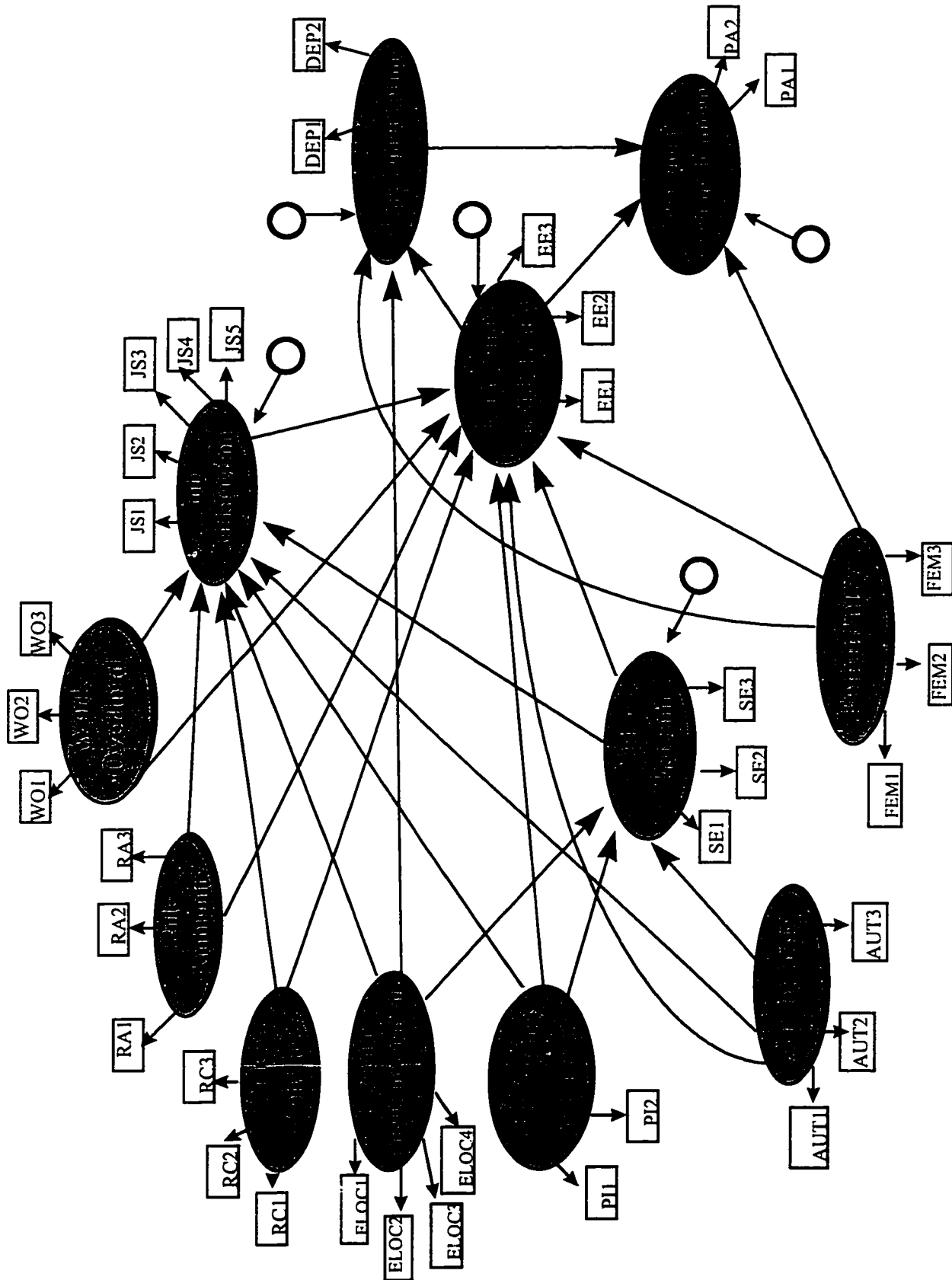


Figure 2

The indicator variables can be identified in Figure 2 by the rectangular boxes; as noted above, each represents a combination of observed item scores from a particular measuring instrument (please see Tables 6 through 9). The single-headed arrows leading from each factor to its respective box operate as regression paths that reflect the impact of the factor on its indicator set of item measurements. Finally, the single-headed arrow pointing to each indicator represents measurement error associated with the observed indicator variables. In the interest of clarity, the symbols that represent these errors [ $\varepsilon$ 's] are not included in Figure 2.

Formation of the calibration and validation samples.

The full sample of nurses was split into two samples for purposes of cross-validation<sup>5</sup>: (1) the nurses on day units, clinics and medical and surgical areas and (2) the nurses in such critical care areas as Intensive Care, Emergency, Post Anesthetic Care Unit, Coronary Intensive Care and Operating Rooms. Each of the two groups were then randomly split into two, and each half randomly assigned to either the calibration or the validation subsamples.

Formation of the structural model. Having determined a well-fitting measurement model, testing for the validity of

the postulated causal paths linking the constructs of interest (see Figures 1 and 2) followed next. The structural regression equations, termed "structural" paths, represent the regression of one latent construct upon another; in combination, they comprise the structural (as opposed to the measurement) portion of the structural equation model. In other words, this structural model defines the pattern of relations among the unobserved constructs. The arrows leading from one construct to another represent these structural paths. For example, Job Satisfaction impacts on Emotional Exhaustion. The hypothesized model (Figure 2) was tested to determine the extent to which it fit the calibration sample data.

Given findings of misspecification, the analyses including the LM test then proceeded in an exploratory, rather than a confirmatory mode, in order to detect areas of misfit in the model. Specifically, post-hoc procedures were conducted to establish the model fitting the data most appropriately, both statistically and theoretically. In a full model (i.e., with measurement and structural components), the LM statistic reports (a) misspecified paths (i.e., paths that are not specified but should be) and (b) misspecified covariances among disturbance terms (Byrne,

1994).

Once this model for the calibration sample was determined, nonsignificant parameters identified by the Wald test (W-Test) were eliminated. The Wald test determines whether sets of parameters specified as free in the model could be simultaneously set to zero without substantial loss in model fit. More specifically, this test takes the least significant parameter (i.e., the parameter with the smallest  $z$  statistic) and adds other parameters such that the overall multivariate test yields a set of free parameters that can be dropped from the model in future runs without significant loss in model fit (Bentler, 1989; Byrne, 1994).

Invariance across the calibration and validation samples. The final, best-fitting structure of Burnout determined from the calibration sample was then imposed on the validation sample to determine the adequacy of model fit to these data. Thus, each specified structural and measurement path was constrained as equal across calibration and validation subsamples and tested for their invariance across groups. Replicability was based on two criteria: (a) goodness-of-fit of the constrained model and (b) the probability level of the equality constraints (with  $p < .05$  being untenable) as determined by the LM Test.

Formation of the model for the general staff nurses.

Given a validated model of Burnout for the overall sample of nurses, this nomological structure was then tested for the subsample of general staff nurses (i.e., nurses working in areas other than critical care) to determine the extent to which the model fits the data from this subgroup<sup>6</sup>. Given evidence of misfit in the model for general staff nurses, post-hoc analyses were conducted to identify ill-fitting parameters. The model was then respecified and re-estimated with a view to establishing a theoretically-sound model of Burnout structure for general staff nurses.

Formation of the model for the critical care nurses.

Given a validated model of Burnout for the subsample of general staff nurses, this nomological structure was then tested for the subsample of critical care nurses to determine the extent to which the model fits the data from this smaller specialized group<sup>7</sup>. Given evidence of misfit in the model for critical care nurses, post-hoc analyses was conducted to identify ill-fitting parameters. The model was then respecified and re-estimated in order to establishing a theoretically-sound model of Burnout structure for critical care nurses.

Results of the aforementioned analyses will now be

presented. The data analyses will be presented in tabular form and will be described in the discussion section of the thesis.

## RESULTS

For the sake of clarity and for consistency with the stages of data analyses, results are now described in three phases: (1) the preliminary analyses, (2) the confirmatory factor analyses of the measuring instruments and (3) the testing of the models, consisting of the full model for the overall sample of nurses (including the cross-validation of this model), the full model for the general staff and the full model for the critical care nurses.

### Preliminary analyses

The initial step in preliminary analyses involved data preparation. Initially the data was reviewed to determine cases with missing data. Sixteen cases with more than 5% missing data were eliminated (therefore  $N = 551$ ). Regression analysis rather than mean imputation was utilized for the remaining cases with missing data (Bentler, 1992).

Because it is meaningful to know the extent to which the nurses in the sample reported levels of burnout compared to previous studies, the means and standard deviations of the three dimensions of Burnout, that is Emotional

Exhaustion, Depersonalization and Personal Accomplishment, were examined and compared to the Maslach healthcare sample (1986). These findings are summarized in Table 2.

Table 2

Summary of Means and Standard Deviations of the Three  
Dimensions of Burnout.

	Emotional Exhaustion		Depersonalization		Personal Accomplishment	
	M	SD	M	SD	M	SD
Maslach Healthcare Sample (Maslach & Jackson, 1986) (N = 1104)	22.19	9.53	7.12	5.22	36.53	7.34
Full Sample of Nurses (N = 544)	23.92	14.17	7.70	7.77	33.13	10.14
Subsample of General Staff (N = 340)	24.27	14.39	7.68	7.81	33.27	10.03
Subsample of Critical Care (N = 204)	23.02	13.66	7.76	7.73	33.07	10.19

Notes: **Emotional Exhaustion:** low is less than 19; average = 19-26; high is more than 26

**Depersonalization:** low is less than 6; average = 6-9; high is more than 9

**Personal Accomplishment:** low (higher Burnout) is less than 34; average = 34-39; high is more than 39

M = Mean; SD = standard deviation.

### Confirmatory Factor Analyses

Confirmatory factor analyses were conducted for each measuring instruments to determine that, in fact, the instrument measured the construct in question and did so in accordance with its unidimensional/multidimensional structure. In the process of conducting these analyses, a total of seven cases having multivariate-outlier scores were identified; they therefore were removed from all subsequent analyses, thereby resulting in a final sample size of 544. Of these full-time registered nurses, 340 represented general staff and 204 represented critical care. Findings from the confirmatory factor analyses of the instruments measuring the personal variables are presented in Table 3 and those measuring the organizational variables in Table 4, respectively.

Table 3  
Summary of Indices of Fit of the Measurement Instruments for  
Personal Variables

	$\chi^2$	<i>df</i>	$\Delta\chi^2$	$\Delta df$	CFI	ECVI	PCFI
<u>Femininity</u>							
Model 1	205.547	9		6	.402	.42	.6
Model 2	74.151	8	131.396	1	.799	.182	.533
Model 3	34.266	7	39.885	1	.917	.114	.467
Model 4	10.131	6	24.135	1	.987	.073	.4
<u>Locus of Control</u>							
Model 1	141.383	34		11	.832	.329	.778
Model 2	46.851	32	94.532	2	.977	.169	.711
<u>Self-esteem</u>							
Model 1	486.914	35			.773	.958	.778
Model 2	456.	35	30.914	0	.792	.906	.778
Model 3	103.138	32	352.862	3	.965	.272	.711

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Results

Table 3 cont'd

	$\chi^2$	<i>df</i>	$\Delta\chi^2$	$\Delta df$	CFI	ECVI	PCFI
Professional							
Identity							
Model 1	69.939	9			.907	.169	.6
Model 2	72.044	9	2.105	0	.909	.176	.6
Model 3	21.458	7	50.586	2	.979	.090	.467
Job Satisfaction							
Model 1	816.891	134			.803	1.619	.876
Model 2	360.477	130	456.414	4	.934	.801	.849
Burnout							
Model 1	972.26	206			.833	1.939	.892
Model 2	566.254	201	406.006	5	.921	1.220	.870
Model 3	533.066	199	33.188	2	.927	1.168	.867
Model 4	504.935	198	28.131	1	.933	1.119	.857

Notes:  $\chi^2$  is chi-square; *df* is the degrees of freedom;  $\Delta\chi^2$  is the difference in chi-square;  $\Delta df$  is the difference in degrees of freedom; CFI is the Comparative Fit Index; ECVI is the Expected Cross Validation Index; and the PCFI is the Parsimony Comparative Fit Index.

Table 4

Summary of Indices of Fit of the Measurement Instruments for  
Organizational Variables

	$\chi^2$	<i>df</i>	$\Delta\chi^2$	$\Delta df$	CFI	ECVI	PCFI
Role Ambiguity and Conflict							
Model 1	376.129	76		15	.889	.789	.836
Model 2	377.68	76	1.551	0	.889	.794	.836
Model 3	325.827	73	51.853	3	.907	.709	.802
Model 4	206.918	70	118.909	3	.950	.505	.769
Workload							
Null					1.00		

Table 4 cont'd

	$\chi^2$	<i>df</i>	$\Delta\chi^2$	$\Delta df$	CFI	ECVI	PCFI
<u>Autonomy</u>							
Model 1	35.740	2		4	.957	.094	.333
Model 2	29.613	2	6.127	4	.965	.083	.333
Model 3	6.037	1	23.276	1	.994	.044	.167

Notes:  $\chi^2$  is chi-square; *df* is the degrees of freedom;  $\Delta\chi^2$  is the difference in chi-square;  $\Delta df$  is the difference in degrees of freedom; CFI is the Comparative Fit Index; ECVI is the Expected Cross Validation Index; and the PCFI is the Parsimony Comparative Fit Index.

The confirmatory factor analyses on the Workload measure indicated that the CFI was 1.00 with no degrees of freedom and it, therefore, constituted a just-identified model. In other words, the number of data variances and covariances equalled the number of parameters to be estimated. Given that a just-identified model has no degrees of freedom, the model cannot be rejected and therefore is of little scientific interest (Byrne, 1994). In structural equation modeling, only models that are over-identified can be adequately tested. Such a model is one in which the number of estimated parameters is less than the number of data points. This model provides for a number of degrees of freedom which allow for its possible rejection as a viable representation of the data.

The just-identified model for the Workload measure was considered in the full structural equation model. However, when the full model was submitted for computer analysis, convergence problems were encountered. One solution to the convergence problem involved an increase in the limit of iterations. In other words, the number of iterations was increased to over 60. However, the convergence problem remained.

A second possible solution to the convergence problem involved the just-identified model. In other words, the solution is to increase the number of degrees of freedom in the model for the Workload measure. In order to increase the number of degrees of freedom and thus change the model to an over-identified model, two of the indicators were constrained as equal. However, despite the different combinations of constrained and free parameters, the problem of convergence remained. Because of the convergence problems and the moderate correlations between this factor and such other factors as Role Ambiguity (.412), Role Conflict (.694) and Autonomy (-.47), it was decided to delete the factor from further analyses. For a complete picture of correlations among the proposed Burnout factors, see Table 5.

Table 5

Correlation between Factors

	FEM	ELOC	SE	RA	RC	PI	AUT	JS	EE	DEP	PA
FEM	1.000										
ELOC	-0.315	1.000									
SE	0.614	-0.669	1.000								
RA	-0.368	0.349	-0.483	1.000							
RC	-0.210	0.392	-0.369	0.537	1.000						
PI	0.175	-0.092	0.057	-0.208	-0.082	1.000					
AUT	0.270	-0.259	0.286	-0.604	-0.486	0.277	1.000				
JS	0.353	-0.300	0.437	-0.591	-0.579	0.413	0.841	1.000			
EE	-0.179	0.443	-0.403	0.470	0.509	-0.350	-0.514	-0.676	1.000		
DEP	-0.614	0.424	-0.484	0.417	0.438	-0.152	-0.316	-0.447	0.481	1.000	
PA	0.615	-0.341	0.414	-0.434	-0.196	0.412	0.569	0.516	-0.475	-0.480	1.000

Results

Confirmatory factor analyses were performed on each of the measuring instruments to determine a fit to the data (see Tables 3 and 4). No further problems encountered with respect to confirmatory factor analyses of all other instruments. Once a well-fitting model for each of the instruments was established (range of CFI's = .933 to .994), the indicators were determined for the measurement model based on correlated errors and cross loadings within each factor. For example, because one set of correlated errors in the Self-esteem measure involved the errors with items 1 and 2 of the measure, one of the indicators for this construct (i.e., SE 1) was a combination of the two items. Summaries of the descriptive statistics related to each indicator variable, as it relates to the calibration, validation, general staff and critical care samples, are presented in Tables 6, 7, 8 and 9 respectively.

Table 6

Summary of Means, Standard Deviations, Skewness and Kurtosis  
of Indicator Variables for the Calibration Sample.

Item Combination	Indicator Variable	M	SD	SK	KU
FEM 1, 6	FEM1	5.745	0.952	-1.053	1.071
FEM 4, 10	FEM2	5.560	0.859	-0.460	-0.168
FEM 13, 14	FEM3	4.060	1.217	0.084	-0.407
LOC 3, 4, 13	ELOC1	2.579	0.804	0.211	-0.218
LOC 17, 20	ELOC2	2.513	0.958	0.296	-0.518
LOC 6, 19	ELOC3	3.358	0.866	-0.106	-0.293
LOC 10, 12, 15	ELOC4	2.648	0.737	0.200	-0.030
SE 1, 2, 9	SE1	3.504	0.489	-0.762	0.255
SE 3, 5, 6, 7	SE2	3.582	0.517	-1.472	2.209
SE 4, 8, 10	SE3	3.408	0.622	-0.805	0.002
RCA 1, 3	RA1	5.090	1.153	-0.518	0.025
RCA 2, 4	RA2	5.509	1.069	-0.531	-0.331
RCA 5, 6	RA3	5.485	1.245	-0.706	01.01
RCA 8, 13	RC1	3.288	1.557	0.444	-0.689

Table 6 cont'd

Item Combination	Indicator	M	SD	SK	KU
Variable					
RCA 7, 9, 14	RC2	3.446	1.381	0.230	-0.456
RCA 10, 11, 12	RC3	3.883	1.525	0.136	-0.749
WO 1	WO1	3.231	1.307	-0.304	-1.132
WO 2	WO2	2.599	1.305	0.323	-1.170
WO 3	WO3	3.165	1.311	-0.379	-1.152
PI 1, 2	PI1	3.050	0.663	-0.404	0.292
PI 3, 5	PI2	2.393	0.673	0.232	-0.122
PI 4, 6	PI3	3.121	0.647	-0.532	-0.004
AUT 1, 3	AUT1	2.545	0.774	-0.180	-0.467
AUT 2, 4	AUT2	2.811	0.779	-0.360	-0.537
JS 1, 3, 7, 9	JS1	3.951	0.525	-0.770	1.154
JS 2, 4, 11, 16	JS2	3.604	0.635	-0.672	1.158
JS 8, 10, 15, 20	JS3	3.626	0.630	-0.731	0.917
JS 5, 12, 14	JS4	2.793	0.854	-0.055	-0.572
JS 6, 13, 19	JS5	3.021	0.906	-0.245	-0.631
BI 1, 13, 14	EE1	3.086	1.349	0.154	-0.655
BI 3, 8, 20	EE2	2.418	1.450	0.476	-0.593

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 Results

Table 6 cont'd

Item Combination	Indicator Variable	M	SD	SK	KU
BI 2, 6, 16	EE3	2.137	0.812	0.716	0.696
BI 5, 10, 15	DEP1	1.228	1.052	0.910	0.618
BI 11, 22	DEP2	1.901	1.349	0.578	-0.280
BI 4, 9, 17, 19	PA1	4.417	0.791	-0.153	-0.552
BI 7, 12, 18, 21	PA2	3.961	0.880	-0.353	0.131

Notes: M = Mean; SD = standard deviation; SK = skewness; KU = kurtosis.

FEM is from the Androgyny measure; LOC is from the Locus of Control measure; SE is from the Self-esteem measure; RCA is from the Role Conflict and Role Ambiguity measure; WO is from the Workload measure; PI is from the Professional Identity measure; JS is from the Job Satisfaction measure; and BI is from the Burnout measure.

Table 7

Summary of Means, Standard Deviations, Skewness and Kurtosis  
of The Indicator Variables of the Validation Sample.

Item Combination	Indicator Variable	M	SD	SK	KU
FEM 1, 6	FEM1	5.724	0.984	-1.022	1.281
FEM 4, 10	FEM2	5.483	0.972	-0.552	-0.053
FEM 13, 14	FEM3	4.340	1.346	-0.061	-0.461
LOC 3, 4, 13	ELOC1	2.606	0.740	0.060	-0.189
LOC 17, 20	ELOC2	2.555	0.938	0.571	-0.451
LOC 6, 19	ELOC3	3.353	0.896	-0.223	-0.338
LOC 10, 12, 15	ELOC4	2.692	0.721	0.255	0.010
SE 1, 2, 9	SE1	3.466	0.511	-0.593	-0.175
SE 3, 5, 6, 7	SE2	3.505	0.547	-1.154	0.687
SE 4, 8, 10	SE3	3.325	0.591	-0.463	-0.420
RCA 1, 3	RA1	5.268	1.086	-0.332	-0.496
RCA 2, 4	RA2	5.473	1.083	-0.484	-0.576
RCA 5, 6	RA3	5.512	1.197	-0.682	0.038
RCA 8, 13	RC1	3.327	1.512	0.436	-0.454

---

 Results

Table 7 cont'd

Item Combination	Indicator	M	SD	SK	KU
Variable					
RCA 7, 9, 14	RC2	3.621	1.413	0.313	-0.618
RCA 10, 11, 12	RC3	4.096	1.544	0.057	-0.717
WO 1	WO1	3.354	1.235	-0.400	-0.930
WO 2	WO2	2.610	1.191	0.356	-0.881
WO 3	WO3	2.924	1.336	0.075	-1.224
PI 1, 2	PI1	3.053	0.704	-0.462	-0.019
PI 3, 5	PI2	2.379	0.631	0.134	-0.105
PI 4, 6	PI3	3.169	0.602	-0.254	-0.556
AUT 1, 3	AUT1	2.410	0.805	-0.145	-0.882
AUT 2, 4	AUT2	2.708	0.798	-0.353	-0.418
JS 1, 3, 7, 9	JS1	3.873	0.561	-0.847	1.977
JS 2, 4, 11, 16	JS2	3.519	0.689	-0.525	0.572
JS 8, 10, 15, 20	JS3	3.579	0.680	-0.691	0.464
JS 5, 12, 14	JS4	2.740	0.900	-0.031	-0.612
JS 6, 13, 19	JS5	2.974	0.945	-0.214	-0.641
BI 1, 13, 14	EE1	3.123	1.230	0.196	-0.404
BI 3, 8, 20	EE2	2.474	1.392	0.543	-0.245

Table 7 cont'd

Item Combination	Indicator Variable	M	SD	SK	KU
BI 2, 6, 16	EE3	2.424	1.201	0.614	0.152
BI 5, 10, 15	DEP1	1.332	1.203	1.103	1.155
BI 11, 22	DEP2	1.968	1.488	0.622	-0.278
BI 4, 9, 17, 19	PA1	4.344	0.828	-0.408	-0.212
BI 7, 12, 18, 21	PA2	3.867	0.893	-0.242	-0.619

Notes: M = Mean; SD = standard deviation; SK = skewness; KU = kurtosis.

FEM is from the Androgyny measure; LOC is from the Locus of Control measure; SE is from the Self-esteem measure; RCA is from the Role Conflict and Role Ambiguity measure; WO is from the Workload measure; PI is from the Professional Identity measure; JS is from the Job Satisfaction measure; and BI is from the Burnout measure.

Table 8

Summary of Means, Standard Deviations, Skewness and Kurtosis  
of The Indicator Variables of the General Staff Sample.

Item Combination	Indicator Variable	M	SD	SK	KU
FEM 1, 6	FEM1	5.786	0.963	-1.067	1.231
FEM 4, 10	FEM2	5.549	0.941	-0.585	-0.005
FEM 13, 14	FEM3	4.182	1.267	0.059	-0.420
LOC 3, 4, 13	ELOC1	2.573	0.807	0.172	-0.200
LOC 17, 20	ELOC2	2.500	0.950	0.317	-0.616
LOC 6, 19	ELOC3	3.335	0.876	-0.194	-0.351
LOC 10, 12, 15	ELOC4	2.646	0.743	0.339	0.069
SE 1, 2, 9	SE1	3.472	0.520	-0.711	0.076
SE 3, 5, 6, 7	SE2	3.550	0.533	-1.323	1.423
SE 4, 8, 10	SE3	3.391	0.592	-0.638	-0.140
RCA 1, 3	RA1	5.165	1.143	-0.508	0.040
RCA 2, 4	RA2	5.430	1.107	-0.476	-0.560
RCA 5, 6	RA3	5.421	1.230	-0.616	-0.115
RCA 8, 13	RC1	3.399	1.519	0.297	-0.669

Table 8 cont'd

Item Combination	Indicator	M	SD	SK	KU
Variable					
RCA 7, 9, 14	RC2	3.568	1.326	0.268	-0.508
RCA 10, 11, 12	RC3	3.920	1.485	0.007	-0.670
WO 1	WO1	3.510	1.216	-0.577	-0.728
WO 2	WO2	2.753	1.247	0.174	-1.122
WO 3	WO3	3.194	1.321	-0.269	-1.194
PI 1, 2	PI1	3.079	0.687	-0.495	0.242
PI 3, 5	PI2	2.436	0.675	0.190	-0.230
PI 4, 6	PI3	3.135	0.642	-0.525	0.031
AUT 1, 3	AUT1	2.449	0.802	-0.113	-0.713
AUT 2, 4	AUT2	2.763	0.808	-0.322	-0.565
JS 1, 3, 7, 9	JS1	3.874	0.570	-0.871	1.767
JS 2, 4, 11, 16	JS2	3.563	0.705	-0.651	0.892
JS 8, 10, 15, 20	JS3	3.565	0.701	-0.754	0.609
JS 5, 12, 14	JS4	2.700	0.888	0.036	-0.519
JS 6, 13, 19	JS5	2.956	0.965	-0.152	-0.730
BI 1, 13, 14	EE1	3.197	1.339	0.147	-0.581

---

 Results

Table 8 cont'd

Item Combination	Indicator Variable	M	SD	SK	KU
BI 3, 8, 20	EE2	2.510	1.461	0.528	-0.417
BI 2, 6, 16	EE3	2.383	1.195	0.703	0.252
BI 5, 10, 15	DEP1	1.253	1.143	1.047	0.986
BI 11, 22	DEP2	1.959	1.457	0.589	-0.241
BI 4, 9, 17, 19	PA1	4.385	0.797	-0.318	-0.360
BI 7, 12, 18, 21	PA2	3.933	0.872	-0.335	-0.083

Notes: M = Mean; SD = standard deviation; SK = skewness; KU = kurtosis.

FEM is from the Androgyny measure; LOC is from the Locus of Control measure; SE is from the Self-esteem measure; RCA is from the Role Conflict and Role Ambiguity measure; WO is from the Workload measure; PI is from the Professional Identity measure; JS is from the Job Satisfaction measure; and BI is from the Burnout measure.

Table 9

Summary of Means, Standard Deviations, Skewness and Kurtosis  
of The Indicator Variables of the Critical Care Sample.

Item Combination	Indicator Variable	M	SD	SK	KU
FEM 1, 6	FEM1	5.650	0.970	-1.005	1.164
FEM 4, 10	FEM2	5.476	0.876	-0.445	-0.068
FEM 13, 13	FEM3	4.230	1.329	-0.011	-0.461
LOC 3, 4, 13	ELOC1	2.625	0.712	0.101	-0.294
LOC 17, 20	ELOC2	2.590	0.943	0.360	-0.263
LOC 6, 19	ELOC3	3.390	0.889	-0.129	-0.264
LOC 10, 12, 15	ELOC4	2.711	0.706	0.020	-0.101
SE 1, 2, 9	SE1	3.507	0.465	-0.552	-0.336
SE 3, 5, 6, 7	SE2	3.532	0.535	-1.271	1.250
SE 4, 8, 10	SE3	3.327	0.632	-0.606	-0.416
RCA 1, 3	RA1	5.203	1.090	-0.313	-0.579
RCA 2, 4	RA2	5.593	1.014	-0.525	-0.326
RCA 5, 6	RA3	5.627	1.197	-0.843	0.516
RCA 8, 13	RC1	3.154	1.550	0.685	-0.293

---

 Results

Table 9 cont'd

Item Combination	Indicator	M	SD	SK	KU
Variable					
RCA7, 9, 14	RC2	3.476	1.458	0.301	-0.555
RCA 10, 11, 12	RC3	4.105	1.617	0.181	-0.912
WO 1	WO1	2.930	1.283	-0.007	-1.174
WO 2	WO2	2.358	1.213	0..637	-0.647
WO 3	WO3	2.795	1.305	0..036	-1.251
PI 1, 2	PI1	3.005	0.677	-0.343	-0.025
PI 3, 5	PI2	2.302	0.605	0.094	0.031
PI 4, 6	PI3	3.162	0.596	-0.173	-0.819
AUT 1, 3	AUT1	2.525	0.774	-0.262	-0.598
AUT 2, 4	AUT2	2.754	0.761	-0.434	-0.284
JS 1, 3, 7, 9	JS1	3.978	0.488	-0.584	0.768
JS 2, 4, 11, 16	JS2	3.560	0.589	-0.444	0.170
JS 8, 10, 15, 20	JS3	3.670	0.567	-0.419	-0.120
JS 5, 12, 14	JS4	2.871	0.853	-0.159	-0.689
JS 6, 13, 19	JS5	3.064	0.854	-0.346	-0.471
BI 1, 13, 14	EE1	2.949	1.192	0.121	-0.582
BI 3, 8, 20	EE2	2.340	1.347	0.419	-0.598

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 Results

Table 9 cont'd

Item Combination	Indicator Variable	M	SD	SK	KU
BI 2, 6, 16	EE3	2.218	0.847	0.596	1.158
BI 5, 10, 15	DEP1	1.325	1.111	1.061	1.265
BI 11, 22	DEP2	1.895	1.357	0.643	-0.299
BI 4, 9, 17, 19	PA1	4.374	0.853	-0.259	-0.303
BI 7, 12, 18, 21	PA2	3.882	0.913	-0.234	-0.524

Notes: M = Mean; SD = standard deviation; SK = skewness; KU = kurtosis.

FEM is from the Androgyny measure; LOC is from the Locus of Control measure; SE is from the Self-esteem measure; RCA is from the Role Conflict and Role Ambiguity measure; WO is from the Workload measure; PI is from the Professional Identity measure; JS is from the Job Satisfaction measure; and BI is from the Burnout measure.

The means of the skewness and kurtosis for the calibration, validation, general staff and critical care samples are presented in Table 10. The skewness and kurtosis levels were within acceptable range (Muethin & Kaplan, 1987).

Table 10

Summary of Means of Skewness and Kurtosis of the Indicator  
Variables of the Samples.

Sample	M of SK	M of KU
Calibration	-0.182	-0.086
Validation	-0.139	-0.184
General Staff Nurses	-0.184	-0.114
Critical Care Nurses	-0.114	-0.193

Notes: M = Mean; SD = standard deviation; SK = skewness; KU  
 = kurtosis

We now turn to a review of the findings related to the full structural equation models. More specifically, we examine findings relative to the calibration and validation samples of nurses as a whole, and the separate samples of general staff nurses and critical care nurses.

#### The Model of Burnout for the Calibration Sample of Nurses

The hypothesized or initial model of Burnout for this calibration sample of nurses<sup>8</sup> yielded an inadequate fit to the data (CFI = .70). The LM-Test indicated that the addition of eight correlations between factors and seven paths, would lead to a significantly better fitting model. Based on an evaluation of the relations of these factors in the literature, and on which of the factors were substantively salient and important, the correlations between the constructs Role Conflict and Ambiguity, Autonomy and Role Ambiguity, Role Conflict and External Locus of Control, Role Ambiguity and External Locus of Control, Autonomy and Role Conflict, Role Ambiguity and External Locus of Control, and External Locus of Control and Femininity were added to the model. In addition, the structural paths leading from Femininity to Self-esteem, from Role Ambiguity to Self-esteem, from External Locus of

Control to Emotional Exhaustion, from Role Conflict to Depersonalization, from Role Conflict to Personal Accomplishment, from Professional Identity to Personal Accomplishment and from Autonomy to Personal Accomplishment were specified as parameters in Model 2. This respecified model resulted in a substantially better-fitting model (CFI = .910). Model 3 was respecified to include correlations between Autonomy and Professional Identity, Autonomy and Femininity and Professional Identity and Role Conflict and External Locus of Control (CFI = .914).

In order to assess the improvement in fit from one model to the next when the models are nested within one another (as in the present case), the difference in  $\chi^2$  values fit the competing models can be examined. This differential ( $\Delta\chi^2$ ) is itself  $\chi^2$  distributed with degrees of freedom equal to the difference in degrees of freedom ( $\Delta df$ ), and can be tested for significance. A significant  $\Delta\chi^2$  demonstrates a substantial improvement in fit. As indicated in Table 11, the addition of these correlations and paths yielded a significantly improved and adequately fitting model ( $\Delta\chi^2_{(5)} = 213.692, p < .001; CFI = .914$ ).

Table 11

Summary of the Goodness-of-fit Indices of the Model for the Calibration Sample.

	$\chi^2$	<i>df</i>	$\Delta\chi^2$	$\Delta df$	CFI	ECVI	PCFI
Model 1	1001.947	464			.859	3.918	.879
Model 2	805.055	461	196.892	3	.910	3.672	.873
Model 3	788.255	459	16.8	2	.914	3.625	.869
Model 4	798.051	464	9.796	5	.912	3.661	.879

Notes:  $\chi^2$  is chi-square; *df* is the degrees of freedom;  $\Delta\chi^2$  is the difference in chi-square;  $\Delta df$  is the difference in degrees of freedom; CFI is the Comparative Fit Index; ECVI is the Expected Cross Validation Index; and the PCFI is the Parsimony Comparative Fit Index.

In Model 4, the application of the W-Test identified thirteen nonsignificant causal paths, that is Professional Identity to Self-esteem, Autonomy to Self-esteem, External Locus of Control to Job Satisfaction, Role Ambiguity to Job Satisfaction, Femininity to Emotional Exhaustion, Self-esteem to Emotional Exhaustion, Role Ambiguity to Emotional Exhaustion, Role Conflict to Emotional Exhaustion, Professional Identity to Emotional Exhaustion, Autonomy to Emotional Exhaustion, External Locus of Control to Depersonalization, Femininity to Personal Accomplishment, and Emotional Exhaustion to Personal Accomplishment. These paths were eliminated from the model resulting in a final CFI of .912. As identified by the W-Test, the removal of these correlations and paths resulted in a model in which the  $\Delta\chi^2$  between Model 3 and Model 4 was not significant ( $\Delta\chi^2_{(5)} = 9.796$ ). As compared with previously-tested models, the resulting model of the calibration sample of nurses (Model<sub>cal</sub>) was more parsimonious and most likely to be able to be replicated (ECVI = 3.661; PCFI = .879). The ECVI was higher than in previous models as a result of minor degradation in fit (in the interests of parsimony). Model<sub>cal</sub> is presented diagrammatically in Figure 3.

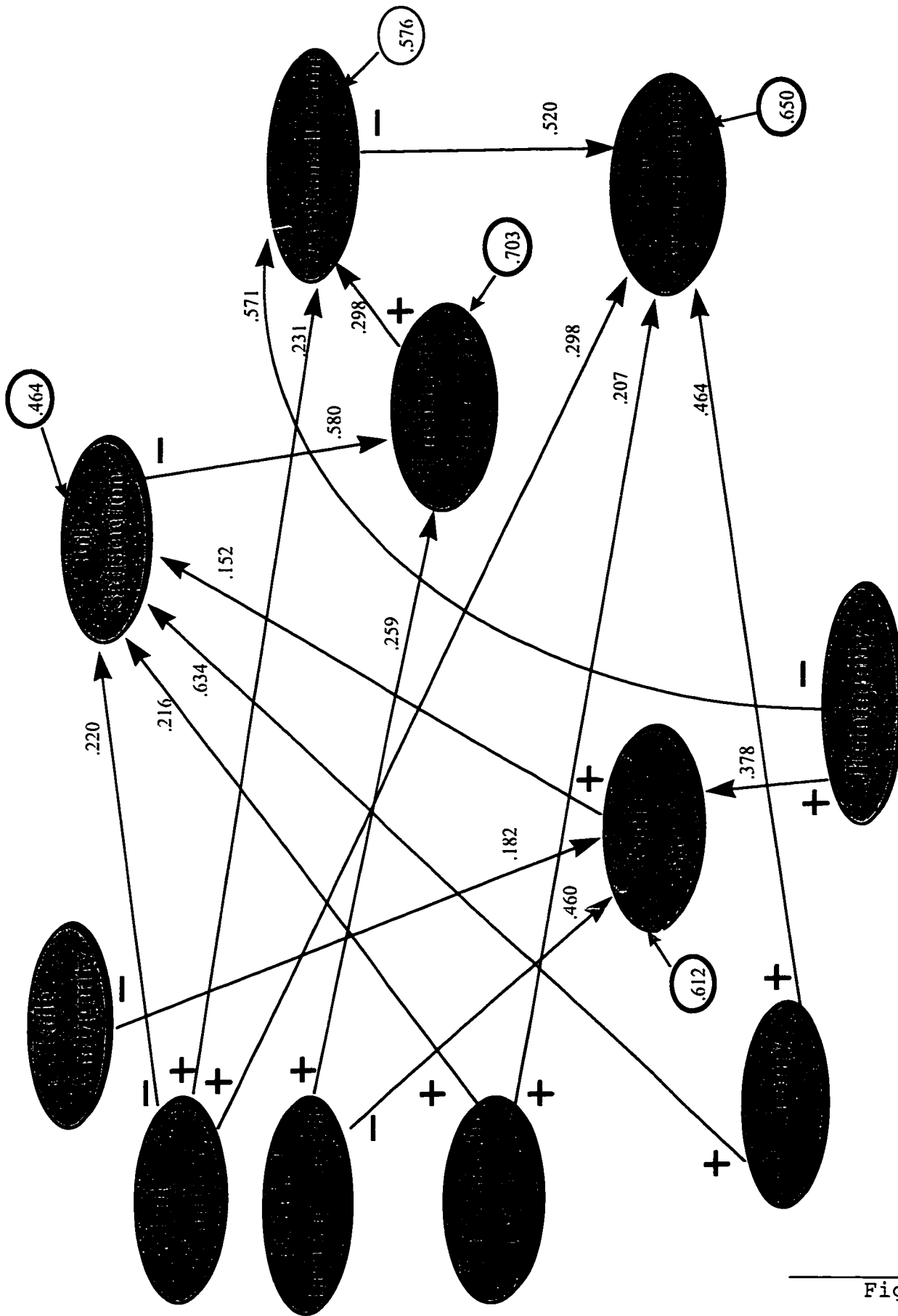


Figure 3

All values reported in the figure represent standardized estimates. Those associated with each of the paths represent regression coefficients, whereas those in the small circles represent error in the prediction of related constructs from antecedent variables. All but one of the associated signs, (i.e., Role Conflict to Personal Accomplishment), were in the expected direction.

For purposes of cross validation, Model<sub>cal</sub> was tested for its replication across the validation sample. As such, all freely-estimated factor loadings and structural paths were constrained equal across the calibration and validation samples, and then tested statistically. This test of invariance represented an extremely rigorous test of cross-validation (see Bollen, 1989).

The LM-Test on this highly restrictive model (CFI = .894) identified three constraints in the measurement model to be untenable; these three factor loadings were (a) one indicator of the External Locus of Control factor, and (b) the second and third indicators of the Emotional Exhaustion factor. As Bollen (1994) has noted, the best fit of data is usually from the calibration sample and that it is possible that the fit of the validation sample may not be as good, thus leading to the necessity of freeing constraints.

Bollen (1989) has asserted that if the focus in testing for the invariance across groups (e.g., calibration and validation samples), is directed more to the equality of structural rather than measurement parameters, then the testing of invariance of the structural parameters may precede the testing of invariance of the measurement parameters. Therefore, in this study, a further test of invariance was conducted such that only structural paths and factor correlations were constrained as equal. Results yielded a finding of total equivalency across the calibration and validation samples. The resulting model was considered to represent an adequate fit to the data (CFI = .91). Results are presented in Table 12.

Table 12

Summary of the Goodness-of-fit Indices Relating to Tests for Invariance Across Calibration and Validation Groups.

	$\chi^2$	$df$	$\Delta\chi^2$	$\Delta df$	CFI	ECVI	PCFI
Model 1	1806.518	978			.894	7.316	.926
Model 2	1672.324	955	134.194	23	.908	7.012	.904

Notes: Model 1 has the all measurement and structural parameters constrained as equal. Model 2 has all structural parameters constrained as equal.

$\chi^2$  is chi-square;  $df$  is the degrees of freedom;  $\Delta\chi^2$  is the difference in chi-square;  $\Delta df$  is the difference in degrees of freedom; CFI is the Comparative Fit Index; ECVI is the Expected Cross Validation Index; and the PCFI is the Parsimony Comparative Fit Index.

### The Model of Burnout for General Staff Nurses

The final model for the sample of nurses (Model<sub>ca1</sub>) was imposed the subsample of general staff nurses and yielded an inadequate goodness-of-fit to the data (CFI = .871). The LM-Test indicated that the addition of one correlation between factors and four paths, would lead to a significantly better fitting model. Consequently, based on an evaluation of the relations of these factors in the literature, and on which of the factors were substantively salient and important, Model 2 was respecified to include the correlation between Professional Identity and Femininity and to include four further causal paths leading from Role Conflict to Emotional Exhaustion, from Professional Identity to Emotional Exhaustion, External Locus of Control to Depersonalization, and from Role Ambiguity to Depersonalization. As indicated in Table 13, the addition of this correlation and these paths yielded a significantly improved and adequately fitting model ( $\Delta\chi^2_{(3)} = 155.9, p < .001; CFI = .918$ ).

Table 13

Summary of the Goodness-of-fit Indices of the Model for the  
General Staff Samples.

	$\chi^2$	<i>df</i>	$\Delta\chi^2$	$\Delta df$	CFI	ECVI	PCFI
Model 1	1037.274	468			.888	3.608	.886
Model 2	881.374	465	155.9	3	.918	3.166	.881
Model 3	883.856	466	2.482	1	.918	3.149	.883

Notes:  $\chi^2$  is chi-square; *df* is the degrees of freedom;  $\Delta\chi^2$  is the difference in chi-square;  $\Delta df$  is the difference in degrees of freedom; CFI is the Comparative Fit Index; ECVI is the Expected Cross Validation Index; and the PCFI is the Parsimony Comparative Fit Index.

In Model 3, the application of the W-Test identified five nonsignificant factor correlations and two nonsignificant causal paths. The correlations were between Role Ambiguity and External Locus of Control, Autonomy and External Locus of Control, External Locus of Control and Femininity, Autonomy and Femininity, and between Professional Identity and Role Conflict. The paths included Role Conflict to Depersonalization and Role Conflict to Personal Accomplishment. These correlations and paths were eliminated (CFI = .918). As identified by the W-Test, the removal of these correlations and paths resulted in a model in which the  $\Delta\chi^2$  between Model 2 and Model 3 was not significant ( $\Delta\chi^2_{(4)} = 2.42$ ). Compared with the previously-tested models, the resulting model, Model<sub>gen</sub> was more parsimonious and most likely to be able to be replicated (ECVI = 3.149; PCFI = .883). Model<sub>gen</sub> is presented diagrammatically in Figure 4.

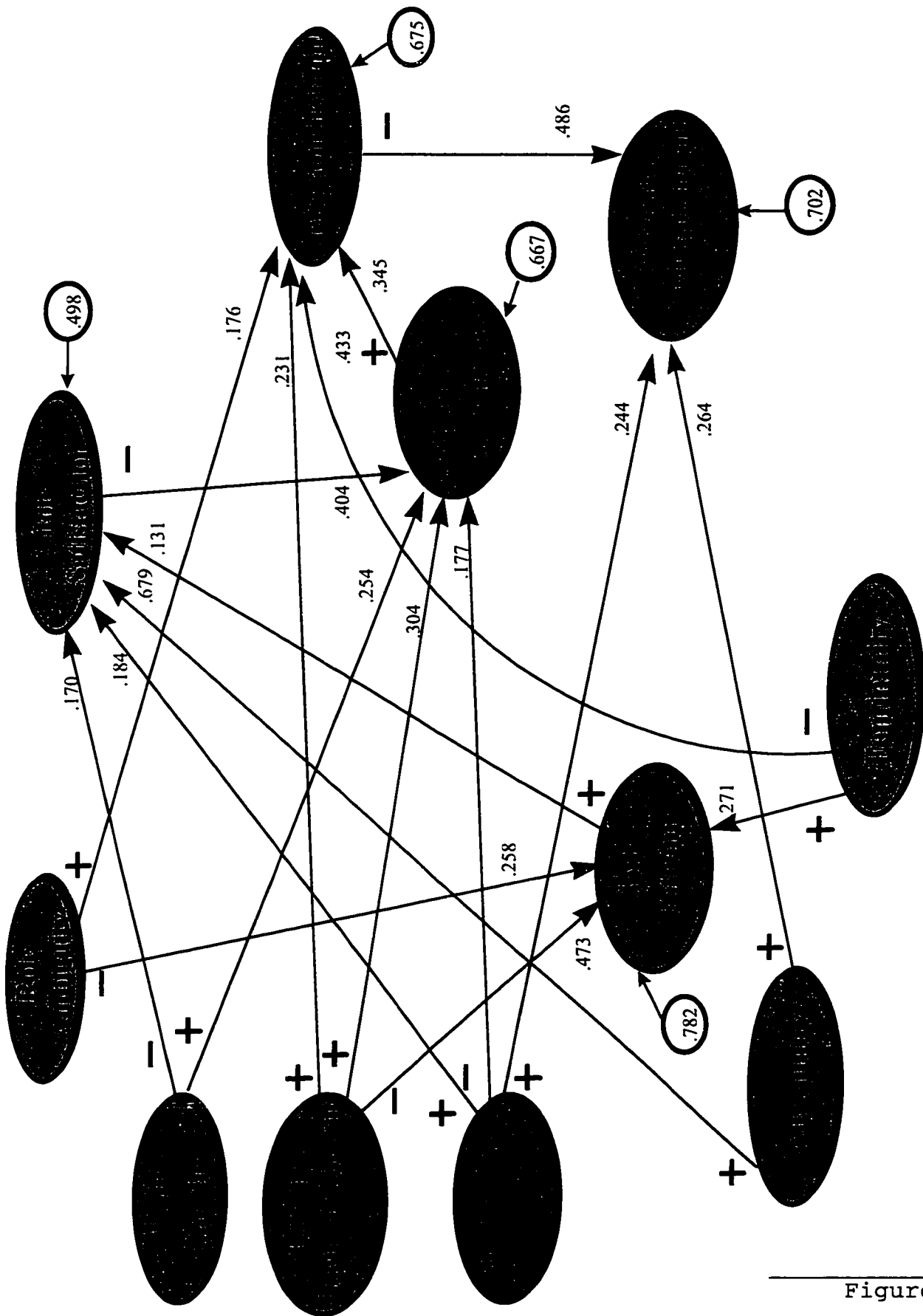


Figure 4

Once again, estimates associated with each of the paths represent standardized coefficients: those associated with paths represent those in the small circles represent error in the prediction of related constructs from antecedent variables. All of the associated signs were in the expected direction.

#### The Model of Burnout for Critical Care Nurses

An initial model derived from the model of general staff nurses yielded an inadequate goodness-of-fit to the data (CFI = .862). The LM-Test indicated that the addition of two correlations between factors, would lead to a significantly better fitting model. Based on an evaluation of the relations of these factors in the literature, and on which of the factors were substantively salient and important, Model 2 was respecified to include two correlations between the factors Autonomy and External Locus of Control, and External Locus of Control and Femininity (CFI = .899). A further LM-Test indicated that the addition of six paths, would lead to a significantly better fitting model. In Model 3 six causal paths were added, that is leading from Job Satisfaction to Self-esteem, Femininity to Emotional Exhaustion, Autonomy to Emotional Exhaustion,

Depersonalization to Emotional Exhaustion, Personal Accomplishment to Depersonalization and Role Conflict to Personal Accomplishment. As indicated in Table 14, the addition of these correlations and paths yielded a significantly improved and adequately fitting model ( $\Delta\chi^2_{(5)} = 27.424, p < .001; CFI = .902$ ).

Table 14

Summary of the Goodness-of-fit Indices of the Model for the  
Critical Care Sample.

	$\chi^2$	<i>df</i>	$\Delta\chi^2$	$\Delta df$	CFI	ECVI	PCFI
Model 1	763.907	467			.894	4.689	.885
Model 2	748.961	464	14.946	3	.899	4.625	.879
Model 3	736.483	462	12.478	2	.902	4.574	.875
Model 4	739.349	463	2.866	1	.902	4.292	.877

Notes:  $\chi^2$  is chi-square; *df* is the degrees of freedom;  $\Delta\chi^2$  is the difference in chi-square;  $\Delta df$  is the difference in degrees of freedom; CFI is the Comparative Fit Index; ECVI is the Expected Cross Validation Index; and the PCFI is the Parsimony Comparative Fit Index.

In Model 4, application of the W-Test identified two nonsignificant factor correlations (i.e., between Autonomy and External Locus of Control, and between External Locus of Control and Femininity) and three nonsignificant causal paths (i.e., from Professional Identity to Emotional Exhaustion, from External Locus of Control to Depersonalization and from Role Ambiguity to Depersonalization). These correlations and paths were eliminated (CFI = .902). As identified by the W-Test, the removal of these correlations and paths resulted in a model in which the  $\Delta\chi^2$  between Model 3 and Model 4 was not significant ( $\Delta\chi^2_{(1)} = 2.866$ ). Compared to previously-tested models, the resultant model, Model<sub>cc</sub> was found to be more parsimonious and most likely to be able to be replicated (ECVI = 4.292; PCVI = .877). Model<sub>cc</sub> is presented diagrammatically in Figure 5.



Once again, estimates associated with each of the paths represent standardized coefficients: those associated with paths represent those in the small circles represent error in the prediction of related constructs from antecedent variables. All but two of the associated signs (i.e., Role Conflict to Personal Accomplishment and Autonomy to Emotional Exhaustion) were in the expected direction.

We turn now to a discussion of the aforementioned results of the present study. This discussion will follow three lines of presentation: (a) the demographic survey, (b) the results bearing on the hypothesized model of Burnout with respect to the overall sample of nurses, and (c) a comparison of the models for the general staff nurses and the critical care nurses within the perspective of the similarities and differences associated with the two models.

## DISCUSSION

Survey of Demographic Data

Several important points related to the demographic aspects of the data are noteworthy. First, 60% of the nurses in this sample were under forty years of age. Ninety-seven percent of the sample had over five years of experience. This indicates that although the sample is somewhat younger than the average Ontario hospital nurse, the nurses in this study have considerable experience.

Second, only 10% of the nurses are divorced (with/without) children and 1% are widowed. This is indicative of at least one possible source of support, (i.e., the family), for the other 89%.

Third, 27% of the nurses reported that they were single with no children. Therefore, 73% of the nurses have husband and/or children responsibilities. The recent research literature abounds with studies that indicate that there is a multiplicity of jobs for women with husbands and dependants and that this multiplicity is a source of stress for these women (Bacharach, Bacharach & Conley, 1991; Mueller & McCloskey, 1990; Parasuraman, Drake & Zammuto, 1981). It is not within the realm of this present study to

do other than speculate as to how home activities might have an effect on the nurses' stress levels in their occupational activities.

Finally, 83% of the nurses indicated that they work some combination of shiftwork, including twelve-hour shifts.

Research has proven that shift work has biological, sociological and psychological implications (Hirsh & Rapkin, 1986; Parasuraman, Drake & Zammuto, 1981; Wolpen, Burke & Greenglass, 1991) and these sequelae are related to age (Cleland, Bass, McHugh & Montano, 1976; Gaertner, 1984; Grove, 1991; Holt, 1993). This is a source of stress inherent in nursing.

#### Model of Burnout: Overall Sample of Nurses

The model for the overall nursing sample is now described. As demonstrated in the literature, (French & Caplan, 1970; Margolis, Kroes and Quinn, 1974 cited in Ivancevich & Matteson, 1980), **Role Ambiguity** impacted on Self-esteem such that nurses experiencing low levels of Ambiguity in the organization also reported high levels of Self-esteem. Interestingly, in this present study, Role Ambiguity was the only hypothesized variable not to impact on Burnout. This unexpected finding is contradictory to

reports from government (Parkin, 1995) and Nursing Associations (Ontario Ministry of Health, 1988, 1990; Ontario Nurses Association, 1988;) of the occupational problems associated with resource shortages.

Role Conflict was shown to impact on Job Satisfaction and Depersonalization in the expected way, [i.e., high levels of Role Conflict equated with low levels of Job Satisfaction and high levels of Depersonalization (Jackson, 1983; Kahn et al., 1964; Organ & Greene, 1974; Posner & Randolph, 1979, 1980)]. However, contrary to the literature, Role Conflict impacted on Personal Accomplishment positively such that high levels of Role Conflict equated with high levels of Personal Accomplishment. This unexpected finding may be explained in that the healthcare system may have become somewhat immune to the factors within the organization that result in Role Conflict. For example, Ivancevich and Matteson (1980) argued that role conflict is the conflict between the employer's and the employees' demands and expectations. Given this postulation, it is noteworthy that the expectations from the healthcare system have shifted drastically in very recent times to emphasize a corporate efficiency, whereas the expectations of the nurses from a

patient-care perspective have not changed. This shift in expectations is a chronic as well as an acute problem across the system and not just in any one hospital. The paradoxical connection between Role Conflict and Personal Accomplishment may be a reflection of these times, a reflection of the reported just average levels of Personal Accomplishment, or a combination of the two.

As expected, the influence of **External Locus of Control** on Self-esteem was negative (i.e., high levels of External Locus of Control led to decreased Self-esteem) and on Emotional Exhaustion was positive (i.e., increased External Locus of Control led to increased Emotional Exhaustion). In other words, as the former path suggested, nurses who felt less responsible for life and situation (high external), experienced less Self-esteem or confidence. As demonstrated in the literature, persons with an external perspective on the world tend to report higher levels of Emotional Exhaustion (Dailey, Ickinger & Coote, 1986; Keane, Ducette & Adler, 1985).

The factor of **Professional Identity** impacted on Job Satisfaction and Personal Accomplishment in expected ways. High levels of Professional Identity (associated with low scores on the JIS) equated with high levels of Job

Satisfaction and high levels of Personal Accomplishment (Leiter, 1991; Lodahl & Kejner, 1965; Shoham-Yakubovich et al., 1989).

As previously noted, Professional Identity (Job Involvement) tends to be resistant to environmental change due to the nature of the job and is therefore relatively stable over time. It is interesting to note that although the profession of nursing is changing in certain ways, (e.g., more emphasis on technology), the socialization of nurses to the profession is still instilling the same values and sense of psychological commitment (Parkin, 1995).

Autonomy was found to impact on Job Satisfaction and Personal Accomplishment positively. This finding is in keeping with reports from nurses and the research literature that indicates autonomy plays a central role in job satisfaction and increases a sense of accomplishment in nursing (Dwyer, Schwartz and Fox, 1992; Kiely et al., 1992; Shalom-Yakubovich et al., 1989; Weisman, 1982).

Research into Femininity in nurses, has been minimal. Therefore, in this thesis, the study of the impact of the personality variable of Femininity was exploratory in nature. It was demonstrated that Femininity and Self-esteem in the sample of nurses under study were positively related.

In other words, the more stereotypically feminine the nurses perceived themselves to be, the higher their reported Self-esteem scores.

It was further demonstrated that the level of Depersonalization was inversely related to Femininity (i.e., the less feminine the nurses perceived themselves to be, the higher the scores of the experience of Depersonalization). This finding seems appropriate in that nurses as a group share characteristics typically feminine stereotypes, in other words supportive, empathic, sensitive and nurturing (Bardwick & Douvan, 1972; Muhlenkamp & Parsons, 1972). These stereotypes are further ingrained in that women were socialized in different ways to be warmth-expressive (Bardwick & Douvan, 1972; Gilligan, 1982). By behaving in ways that are incongruent with their personal and professional socialization (i.e., the less stereotypically-feminine) the nurses in the study did, in fact, report more experienced Depersonalization. This finding is in keeping with the results of a study on male nurses that indicated that more feminine female nurses expressed the least isolation (Krausz, Kedem, Tal & Amir, 1992) as compared to more masculine male nurses.

Similar to the model of Burnout described by Leiter (1991), this present study demonstrated that Emotional Exhaustion did indeed play a central role in the theory of Burnout in that it impacted on Depersonalization which in turn impacted negatively on Personal Accomplishment. However, Emotional Exhaustion did not play a role in the factor of Personal Accomplishment for nurses in this study.

Therefore, this model of Burnout for the nurses is similar to the revised model of Leiter (1993) which posits that Emotional Exhaustion and Personal Accomplishment develop independently or in parallel with each other and do not follow from each other.

In summary, the nurses in three major Ontario hospitals reported levels of burnout similar to a sample of health-care workers (Maslach & Jackson, 1986). The organizational factors shown to impact on Burnout were Role Conflict and Autonomy. Personal factors shown to impact on Burnout were Job Satisfaction, Femininity, External Locus of Control and Professional Identity. Job Satisfaction and Self-esteem were shown to be mediators between the organizational and personal variables, and the dimensions of Burnout.

The sample of nurses in this study consisted of general staff nurses from medical and surgical wards, day units and

clinics ( $N = 340$ ) and of nurses from critical care areas ( $N = 204$ ). A model was developed for (a) the group of general staff nurses and (b) the group of critical care nurses. These two models have similarities and differences rooted in the nature of the nursing care and in the nature of the nurse herself.

Given that the present study is concerned with the experience of burnout, a discussion of the two models will entail a comparison focusing on the differences between the two groups of nurses on Emotional Exhaustion, Depersonalization and Personal Accomplishment. This thesis will now turn to the comparison between the two subgroups of nurses (i.e., the general staff nurses and the critical care nurses).

#### The Model of Burnout: General Staff and Critical Care Nurses

The models of Burnout for general staff and critical care nurses can best be illustrated from the perspective of the differences and similarities between the two models.

Both of the two models, that is the model for the general staff and critical care nurses, displayed similar patterns of factors impacting on the two mediating factors (i.e., Self-esteem and Job Satisfaction). Role Ambiguity,

External Locus of Control and Femininity impacted on Self-esteem; and Role Conflict, Professional Identity, Autonomy and Self-esteem on Job Satisfaction. However, in the model for the critical care nurses, Job Satisfaction also impacted on Self-esteem in an inverse fashion; in other words, the more the sense of job satisfaction, the less the sense of self-esteem. This is the first of three such "paradoxical" paths.

Differences began to appear in the levels of experienced burnout and in the pattern of impacting variables on the three factors of Burnout. Of the two groups, the general staff nurses exhibited more Emotional Exhaustion, slightly less Depersonalization and slightly more Personal Accomplishment (i.e.,  $M = 24.27, 7.68$  and  $33.27$  respectively), than did the critical care nurses ( $M = 23.03, 7.76,$  and  $33.02$  respectively). Although these differences are not statistically significant, nor even clinically significant, they are of practical importance (see example Azar, 1997; Cohen, 1994; Howell, 1997; Kirk, 1996; Thompson, 1996).

These levels of the dimensions of Burnout indicated that overall the critical care nurses were experiencing less Emotional Exhaustion, but slightly more Depersonalization,

and were reporting less of a sense of Personal Accomplishment from their work. Given the critical and highly technical nature of critical care units and the present day hospital milieu of shortages in human and physical resources, practical indications of higher levels of Burnout seem to be appropriate (Mitchell, 1989).

The critical care nurses demonstrated slightly lower levels of Personal Accomplishment than did the general staff nurses. This lower sense of accomplishment may be a reflection of the acute and demanding nature of nursing in these areas, an increased required level of education and socialization of the nurse into critical care areas (Boyle et al., 1996), and a sense of confusion from organizational mixed messages of priorities and resource allocations. The combination of these three factors may counteract the sense of accomplishment that the nurse in a critical care may experience.

We will now turn to a discussion of the reported experiences of burnout for the general staff and critical care nurses. The discussion extrapolates on the individual dimensions of Burnout.

**Emotional Exhaustion.** For both groups of nurses, Emotional Exhaustion was triggered by External Locus of

Control, Role Conflict and Job Satisfaction. In the model for general staff nurses **Emotional Exhaustion** was further impacted on by Professional Identity.

Professional Identity was found to have an inverse relation with **Emotional Exhaustion**; in other words, the higher the reported Professional Identity, the lower the **Emotional Exhaustion**. Lodahl and Kejner (1965) defined Job Involvement (i.e., Professional Identity) as the degree to which an individual identifies psychologically with work, or as the internalization of the values regarding the goodness and the importance of work. This sense of commitment to nursing, both physically and psychologically, perhaps acts as a buffer against the negative impact of resource shortages which can lead to a sense of futility, draining and ultimately burnout. In many ways, nurses temper the reality of the situation with a clear sense of commitment. (Ahmadi, Speedling & Kuhn-Weissman, 1987; Omery, 1989; Arthur, 1992).

Three further factors impacted on **Emotional Exhaustion** in the model for critical care nurses (i.e., Femininity, Autonomy and Depersonalization). These two last factors for the critical care nurses, Autonomy and Depersonalization, are of interest in that Depersonalization had a negative

impact (the second "paradoxical" path) while Autonomy had a positive impact on **Emotional Exhaustion** which is contradictory to theory and empirical literature.

For critical care nurses, Femininity proved to have an impact on **Emotional Exhaustion**. It must be remembered that the stereotypic characteristics of Femininity portray the person as nurturing, caring. Critical care nurses are much more likely to be involved in the caring part on many more levels than the general staff nurse. Further, contact of the nurse with a critical care patient is one to one, as opposed to a ratio of four to one for the general staff nurse.

The critical care nurses reported that increased autonomy led to increased **emotional exhaustion** which seems to be contradictory. It is noteworthy that critical care nurses in reality have a great deal more autonomy in the care of their patients than do general staff nurses. This increased autonomy leading to increased **emotional exhaustion** is perhaps (a) a reflection that even higher levels of autonomy may indeed be burdensome and provoke a contradictory response in critical care nurses; (b) is an indication that in other than the present cross-sectional study (i.e., a longitudinal study), the relation (between

Autonomy and Emotional Exhaustion) may be of a curvilinear nature and thus more complex and requiring further analysis beyond the scope of this thesis; or (c) an indication that the factor of professional Autonomy as opposed to organizational Autonomy may be having an impact (Parkin, 1995).

Depersonalization. Femininity impacted on Depersonalization for both groups of nurses (i.e., lower Femininity equated with higher scores on Depersonalization).

This impact, likely due to the feminine-stereotypic characteristics of nurturance and closeness, was expected in that the literature indicates that nurses with low levels of communal orientation (low levels of feminine traits) are more prone to burnout (VanYperen et al., 1992).

The experience of depersonalization for the two groups of nurses proved to also have different triggering factors. In the model for general staff nurses, External Locus of Control, Role Ambiguity and Emotional Exhaustion impacted on Depersonalization.

For the critical care nurses, Personal Accomplishment was a stimulus. In the same way that Emotional Exhaustion had a paradoxical effect in Depersonalization, Personal

Accomplishment was positively related to **Depersonalization**.

**Personal Accomplishment**. This last facet of Burnout, is the one dimension that is a positive experience and the opposite to the experiences of emotional exhaustion and depersonalization. **Personal Accomplishment** was reported by the general staff and the critical care nurses to have much the same pattern. That is to say, Autonomy, Professional Identity and Depersonalization impacted on **Personal Accomplishment** for both groups of nurses.

However, for critical care nurses, Role Conflict was a further influencing factor. Role Conflict impacted on the Personal Accomplishment for the critical care nurses in an unexpected, inverse way; in other words, the greater the Role Conflict, the greater the reported Personal Accomplishment. As was previously mentioned, the expectations from the healthcare system have shifted drastically in very recent times to emphasize a corporate efficiency, whereas the expectations of the nurses from a patient-care perspective have not changed. The critical care nurses' expectations may be even more patient-focused given the very close bond of the relationship between acutely-ill patients in a tertiary-care hospital and the critical care

nurse. To reiterate, the paradoxical connection between Role Conflict and Personal Accomplishment may be a reflection of the shift in, and the difference of expectations; a reflection of the reported just average levels of Personal Accomplishment; or a combination of the two.

It is important to note that the three "paradoxical" paths, i.e., Self-esteem to Job Satisfaction, Emotional Exhaustion to Depersonalization and Depersonalization to Personal Accomplishment (all dependent variables), may be considered (a) reciprocal relations and most appropriately tested through the comparison of alternately specified models (Byrne, 1993); or (b) an artifact of the statistical methodology. To disentangle these possible reciprocal relations, is beyond the scope of this present thesis and must be the work of future research.

### Summary

This study of the nomological network of Burnout focused on the nursing profession. Scores on the MBI for the nurses in this study demonstrated that the nurses at the three selected hospitals were reporting similar levels of emotional exhaustion, depersonalization, and personal accomplishment compared to the nurses in the Maslach health-

care group (Maslach & Jackson, 1986). Of critical importance in the findings of this study was the differential pattern of causal links for two groups of nurses - general staff nurses and critical care nurses.

## CONCLUSIONS

This present study determined that for the selected sample of Ontario hospital nurses, the organizational factors of Role Ambiguity, Role Conflict and Autonomy were important components of the phenomenon of burnout. Furthermore, it determined that the personal variables of External Locus of Control, Professional Identity and Femininity triggered experienced Burnout. In addition, Self-esteem and Job Satisfaction were found to be mediators in the process of burnout. Differences in how these variables impacted on the dimensions of Burnout were encountered when two groups of this nursing sample (i.e., general staff and critical care nurses) were compared.

Burnout itself was validated as a multidimensional construct wherein Emotional Exhaustion impacted on Depersonalization which, in turn, impacted on Personal Accomplishment. Consistent with the revised burnout model proposed by Leiter (1993), Emotional Exhaustion did not trigger Personal Accomplishment. The study further supported the notion that each of the dimensions of Burnout must be considered as a separate construct in determining the impact of other theoretically-related constructs.

## Study Limitations and Suggestions for Future Research

### Study Limitations

The present study has at least five limitations that require elucidation. The first limitation involves the cross-sectional nature of study. Nurses in this sample from three of the largest hospitals in Ontario expressed similar levels of emotional exhaustion, depersonalization and personal accomplishment as compared to the Maslach health-care sample (1986). To this point in time, the studies of occupational stress and burnout with nurses have determined that nursing is a profession prone to burnout. These previous studies were conducted at a time in hospital history termed "fat" times when budgets were highly inflated as compared to today, and when medical expenses were unlimited and considered sacrosanct. This fact argues for longitudinal studies into burnout that may indeed capture the true state of the nursing population despite the shift in times, foci and priorities. The fact that this study is cross-sectional is a limitation.

A second limitation involves the sample and generalizability. The model of the causal links determined

by structural equation modeling are group specific. In other words, the model determined by this study is appropriate for the nursing sample studied. This specificity makes generalizability to other professions difficult (Maslach & Schaufeli, 1993). However, structural equation modeling does help to identify and confirm possible global causes and in doing so allows indicators to be identified for future use in hypothesized models.

A second part of generalizability is the representativeness of the sample of nurses, and the ability to generalize to other groups of nurses. There are some significant differences between this sample of nurses, and all nurses working as general staff in Ontario hospitals (Health Statistics Division, 1995). For example, in this study, 94% of the nurses were female compared to 97% for Ontario; 60% of the nurses in this study were under 40 years old compared to 45% for Ontario; and 37% of the nurses in this study were from critical care areas as compared to 29% in Ontario. This last statistic may be due in part to the broad designation of work areas by the College of Nurses of Ontario. This comparison illustrates that the sample of nurses in this present study may not be as representative of the whole group of nurses working in Ontario hospitals as

would allow for generalizability. However, it must be noted that the Ontario statistics were obtained from registration forms that must be completed by the nurses yearly in order to maintain registration. On the other hand, participation in this study was voluntary.

A third limitation is more directly related to the sample (i.e., sample selection). The response rate of 37.8% is perhaps indicative of a group of nurses who are very conscientious. On the other hand, that 62.2% did not respond may be an indication (a) of generalized apathy due to Ministry of Health restructuring and layoffs, (b) of impinging organizational factors (time pressures) and thus an inability of 62.2% to respond, or (c) that 62.2% of the nurses are experiencing more severe levels of burnout (Maslach & Schaufeli, 1993). It is noteworthy that the questionnaires were distributed and completed at the Ottawa Civic Hospital before restructuring and massive budget cuts were announced (46% returned); at The Toronto Hospital after restructuring and one month before Hospital closures were announced by the Ministry (37% returned); at the Ottawa General Hospital with massive budget cuts, layoffs and in the middle of Health District Council recommendations (17% returned).

The fourth limitation involves the possible impact of organizational and personal variables on Burnout in nurses. For example, it is possible that some aspects of burnout in nurses, actually represents an individual nurse's response to organizational burnout. In the present day milieu of clawbacks, cutbacks, layoffs, added responsibilities and skill mixes, it is very difficult to conceptually differentiate the "chicken and the egg". There has been very little research accomplished on "organizational healthiness" (Cox, Kuk & Leiter, 1993) and there is no inventory yet developed that can distinguish between organizational burnout or an individual's response to it.

A final limitation of this study is the assumption that Burnout represents a distinct construct whose definition can be clarified using structural equation modeling procedures. In an effort to substantiate the uniqueness of this construct, depression has received increasing attention because of the perceived similarities to burnout. For example, Meier (1983), in exploring the **construct validity** of Burnout, determined that there is considerable overlap in measures of both Burnout and Depression.

Although this perceived overlap may seem to weaken the argument for the discriminant validation of the construct of Burnout, the same study also strengthened the argument for **convergent validity** of burnout.

Meier (1983) reasoned that it is likely that measures of Burnout would indicate moderate correlations with any measures of negative emotional states (expressed as global feelings). Both burnout and depression are primarily feelinged states and difficult to define precisely. Meier (1984) concluded that (1) causal operations would be better determined through observation and theoretical analysis rather than test analysis, (2) dissimilar developmental sequences from similar outcomes warrant different labels, and (3) Burnout is a valid construct with strong connections to Depression.

Research by Leiter and Durup (1994), supports the **discriminant validity** of the Burnout construct. Using confirmatory factor analysis with one Burnout measure and two Depression measures, Leiter and Durup concluded that (a) burnout and depression are distinct but related and (b) their study contributed to the **construct validity** of both constructs. The differentiation between burnout and

depression was upheld in that the model with two primary factors was an improvement over a one-factor model, which argues for the distinctiveness of constructs; and this improved model recognizes the diverse aspects of both concepts (Leiter & Durup, 1994).

Thus, although some research concludes that Burnout does exist as a distinct construct (Cox et al., 1993; Firth et al., 1986, 1987; Glass et al., 1993; Leiter & Durup, 1994; Meier, 1983), the same research indicates considerable overlap in the manifestations of burnout and such similar constructs as Professional Depression, Compassion Fatigue and Stress (please see Endnote 2). The question then becomes whether burnout is unique, or merely a violation of Occam's Razor which states "intra non sunt multiplicanda praeter necessitatum" (entities are not to be multiplied beyond necessity). Are the dimensions of Emotional Exhaustion, Depersonalization and Decreased Personal Accomplishment distinctive enough for new nomination? Is burnout really depression in the professional forum? Or a heightened occupational stress (MacNeill, 1981)?

### Directions for Future Research

The present study yields many possibilities for future research; these include an examination of: (a) the dynamics of professions and the link to burnout, (b) the link between sex-role traits (i.e., Androgyny, Femininity) and the personality of ideal nurses, (c) the characteristics of male nurses and the part these traits play in Burnout, (d) the existence of nursing group differences and the impact on burnout, (e) the part that the critical nature of nursing ("life and death factor") plays in the burnout cycle, (f) the curvilinear nature of variables and how that nature fits in the structural equation modeling scheme of things, (g) the differentiation between such concepts as professional and personal Self-esteem, and between professional and personal Autonomy, and what part the professional and the personal play in the experience of burnout and (h) the differentiation between Burnout and other constructs.

The dynamics of professions. By definition, professions and professionals are dynamic systems, changing, evaluating, assessing their knowledge and practice. Research is initial in making the connection between job stress and identity theory (Joseph, 1985; Frone et al., 1995). On one hand, the definition of commitment may be closely related to the idea

of one of Kobasi's dimensions of hardiness. The hardiness personality exhibited by nurses has had inaugural investigation (Duquette et al., 1994; Sortet & Banks, 1996; Wright, Blache, Ralph & Luterman, 1993).

On the other hand, the definition of Job Involvement, or Professional Identity, as named and developed in this present thesis, is the sense of the professionalism and not the altruism as defined by "Nightingalism" (Martin, 1990; Muff, 1982). The question becomes the extent to which the dynamics of a profession (learned in the professional socialization process) attenuate the stress response (of an individual and their personality). If indeed the socialization of a nurse into the profession is an extension of societal's stereotypically-feminine socialization (Howard, 1984; Howard, 1986; Gervaise & Howard, 1984), then socialization into the profession perhaps holds the key to decreasing stress. This study evaluating the impact of both professional identity and a stereotypical personality on burnout, is an initial step in determining the links.

The link between sex-role and personality of "ideal" nurses. The personality of Androgyny is a new field of study. This present thesis decidedly explored one of the dimensions of Androgyny (i.e., Femininity) based on the

concept of nursing as a traditionally female occupation, and developed a rationale to explain how that personality might impact on burnout. Research into nursing and other professions has determined that androgynous characteristics are considered ideal<sup>9</sup> (Minnigerode et al., 1978; Napholz, 1992; Simpson & Green, 1975) and that there is a connection between the traits of an androgynous personality and effective helpers (Burke, 1982). It would thus be advantageous to determine what role androgyny might play in the nursing profession.

Characteristics of male nurses. One possible way to determine the role and the importance of stereotypic and androgynous characteristics, is to study a traditionally-male profession, for example, police officers. In a similar fashion, it would be beneficial to examine what types of characteristics are displayed by the minority group (i.e., male nurses or female police officers) within this professional context.

The existence of nursing group differences. Studies of other specialties in nursing have found differing responses to stress and burnout. Applying the sophisticated methodology of structural equation modeling would be useful both to the individual and to organizations to determine

which type of nurse might be best suited to different specialties such as Cardiology, Oncology, Gerontology, and Palliative Care. Given the financial and temporal costs to train specialty nurses, research into differing responses to stress would be cost effective for retention.

The critical nature of nursing. To date, there have been very few if any studies designed to measure the impact of the "life and death" factor on nurses. A study conducted in Ontario (van den Berg, 1996), used simulated situations to determine the factors in the decision-making processes of Intensive Care nurses. The findings provided insights into this process but unfortunately, the situations were simulated and could not provide the stressful environment inherent in the "life and death factor".

An initial study by this author of the stress levels of nurses involved in an organ donor program using cadavers (Howard, 1987), determined that nurses in the critical care area of the Operating Room have lower state anxiety and stress levels than expected given the nature of the organ retrieval procedure. It would be beneficial to (a) develop a measure of this "life-and-death" factor to determine the impact of the consequences of life and death decision-making and (b) to determine what impact this factor has on nurses,

their stress (and thus burnout potential) and their work.

The curvilinear nature of variables. Autonomy was postulated to be one of the essential factors for nurses to improve working conditions (Baumgart & Larsen, 1992; Kiely et al., 1992; Kramer & Schamlenberg, 1988; Meltz & Marzetti, 1988; Ontario Nurses' Association, 1988; Ontario Ministry of Health, 1988, 1990; Parkin, 1995; Skelton-Green, 1996; Stamps & Piedmonte, 1986). It was curious therefore, that Autonomy was paradoxical in its relation to Burnout in critical care nurses. It is beyond the scope of this present thesis to explore the nature and reasons for this relation. Longitudinal studies would be beneficial to determine if indeed the nature of Autonomy is curvilinear for subgroups of nurses.

Differentiation between professional and personal. A further area for future research could be the development of an instrument to differentiate between professional and personal factors, such as those factors from this present thesis (i.e., Self-esteem and Autonomy). Initial research on work Self-esteem has begun based on the assumption that work Self-esteem is only one dimension of the multidimensional global Self-esteem (Arthur, 1992; Cherniss, 1993; Rindskopf, 1993). In the same fashion, Autonomy can

be separated into professional, organizational and individual spheres. In order to determine the impact of these factors in the different spheres (professional and personal) on occupational stress and burnout, it is essential to differentiate the dimensions empirically by developing tools (Elston, 1991 cited in Parkin, 1995).

The differentiation between burnout and other constructs. Given that there is a body of research indicating symptomatology overlap between burnout and such constructs as Depression and Occupational Stress, it would be interesting to explore and perhaps determine, using techniques such as a multitrait - multimethod framework, the extent to which depression and occupational stress are unique from burnout.

Another potential for future study can involve the development of a tool measuring the concepts as separate entities rather than measuring similar symptoms. Developing this tool would be no easy task in that the symptoms of burnout, depression and occupational stress are pervasive and negative in nature.

## Conclusions

In conclusion, the present study, despite its limitations, has discovered or confirmed some important features of health-care institutions, of the nursing profession and of nurses themselves that can lead to burnout. However, the study also validates the notion that more needs to be done in the realm of burnout.

In 1990, a review of international literature on burnout listed nearly 2500 articles written in the 15-year span 1974-1989 (Kleiber & Enzmann, cited in Leiter & Durup, 1994). In 1993, a review of the burnout literature revealed more 1,100 articles and more than 100 books (Figley, 1995).

The definition of burnout posited by, and the inventory developed by Maslach and Jackson still remain the most popular and widely used. By inference, the consequent theory of burnout is directly related to these researchers.

However, there are various theories and definitions that are developed daily by numerous other researchers and each one is felt by these researchers to be **the theory**. In the end, this particular study does provide a foundation on which to expand the knowledge of Burnout as a construct, its definition and its determinants.

## Recommendations

Given that the author of the thesis, in addition to being a doctoral candidate in Clinical Psychology, is also a practising Registered Nurse, it was considered to be both appropriate and essential that recommendations, based on the present research findings of burnout among nurses, be proposed to organizations and training facilities. These recommendations are as follows:

### Organizations

Autonomy. This present study determined that (a) as job satisfaction increases, burnout decreases and (b) as job satisfaction and personal accomplishment increase, autonomy increases. It therefore behooves organizations to increase that sense of autonomy or ability to make decisions about patients, and thus increase satisfaction.

Autonomy was reported by nurses in previous studies to be an area of concern. It was mandated by the Ministry of Health that nurses sit on hospital decision-making committees. This mandate was accomplished. However, follow-up reports indicated that the level of satisfaction did not increase significantly to indicate success. It is likely

that nurses need to be able to make decisions at a level lower than hospital-wide. One program that brings decision-making to the nurse is one which includes ward Unit Councils (a group of staff nurses making decisions by consensus on patient care and unit functioning). Unit Councils were instituted at the Ottawa Civic Hospital and the program has proved successful in giving the participating groups a sense of control in the patients' care and the running of the units. These kinds of programs are time-consuming to set up, but are well worth the rewards. It is recommended to other hospitals that they too institute such programs.

A second recommendation regarding autonomy deals with the delivery system of nursing care. Research indicates that nurses who are responsible for total patient care, report greater levels of satisfaction. This kind of delivery system, called Primary Care, is having some success at the Ottawa Civic Hospital in increasing nurses' job satisfaction. It is recommended that when a patient-care delivery system is instituted in any hospital, that the choice of system be determined by taking job satisfaction into account. Both of these recommendations must be tempered with the knowledge that too much of a good thing can be harmful as indicated by Critical Care nurses whose

level of burnout increased with their level of autonomy.

Role Conflict, Femininity and Self-esteem. Nurses in this study reported that, as role conflict decreases, job satisfaction increases; and as role conflict increases, burnout increases. Further, as self-esteem increases, job satisfaction increases; and as femininity increases, self-esteem increases and burnout decreases.

Within the power structure of hospitals, there are many situations which exacerbate the response to **role conflicts** and ultimately, the individual nurse's **self-esteem**; for example, the dichotomous situation of paternalistic hospital structure using traditionally-feminine professions. Hospitals originally developed based on the very structured and paternalistic religious and military models. Nursing is a traditionally-feminine profession with all the inherent pitfalls of women in organizations including sexual harassment and violence (Davis, 1995; Robbins, Bender & Finnis, 1997; Suominen, Kouvasin & Ketola, 1997).

Violence, a form of abuse, is one of the more insidious and pervasive environmental stressors. In a Fifth Estate documentary (1993), it was reported that nurses ranked second only to Police in the risk for, and actual violence against, their person. Traditionally, nurses have felt an

inability for recourse. Further, professional socialization has instilled a sense of personal compromise in the face of patient (and physician) abuse. This situation provides a clear sense of **role conflict** and a direct violation of the nurses' **feminine** nature.

Although extreme physical violence in the workplace has increased in recent years, violence is not a new phenomenon for nurses. Research indicates that verbal abuse with varying degrees of potential for escalation, has been rampant in the hospitals for many decades but has been condoned under the guise of situational appropriateness.

In order to decrease the stress of this workplace hazard, hospitals need to adopt programs of Zero Tolerance (Whitehorn, 1997) and institute mechanisms of reporting all and any forms of violence. Within these programs there is a need for non-violent crisis intervention workshops, debriefing sessions, crisis intervention teams, support groups, and information sessions on legal and civil options. Zero Tolerance programs provide clear criteria of what constitutes abuse and clear guidelines for recourse. These criteria and guidelines decrease **role conflicts** and increase a sense of **self-esteem**.

A second recommendation that is tied to the issue of violence relates to the responsibility to report violence of any form. Traditionally, patients have had recourse when they have been abused by health-care providers. The Health Disciplines Act guarantees this right. Within this act there is also a clause that demands that any health-care provider covered under this Act, has the responsibility to report abuse. A recommendation is made that this clause be expanded for the further protection of nurses against physical, verbal and psychological abuse.

Locus of Control. The present study determined that, for the nurses, the higher their sense of external locus of control, the higher the level of emotional exhaustion and the lower the level of self-esteem that they express. In other words, the nurses need to have a better sense of their own control in their working lives. When the nurses are under stress, there is a need to have this sense of control and to have the ability to turn to the hospital and to co-workers for support. In other organizations, Employee Assistance Programs (EAP) perform this function. The best case scenario would be in-house EAP where staff are provided empathic support. Increasing numbers of hospitals are, unfortunately, using outside consulting groups.

There are two sides to the issue: on one hand, some staff are uncomfortable using services in their very place of work, while on the other hand, others do not trust that their issues will be dealt with, with the same understanding if the service is outside the hospital. The problem is that in-hospital services may not be as global (e.g., medical, emotional and financial) as provided by outside companies with varied kinds of resources. It is recommended that minimally, an EAP program be ascribed to. Optimally, this program should be in-house with the ability to access outside resources.

Job Satisfaction. In this present study, job satisfaction was a mediating influence in the burnout levels reported by the nurses. When hospital employees are dissatisfied and under increased work stress, research indicates that their place of work becomes a venue to express that dissatisfaction in counterproductive ways such as absenteeism, theft and substance abuse (Jones, 1981a, 1981b). Unfortunately, having the knowledge of the unpleasant sequelae and concomitant problems, does not make the nurse any less susceptible. In many ways, hospital nurses have easier access to substances and drugs than do lay persons. The Registered Nurses of Ontario have

instituted a program for nurses with substance abuse problems. Unfortunately, access to the program is limited to those belonging to the Association. It is recommended that all nurses have access to this kind of program.

Job Satisfaction, Locus of Control and Self-esteem.

Kramer (1974) described a "reality shock" in which new registered nurses are overwhelmed with the reality of nursing. Many teaching facilities are providing more on-hands experiences through internships and placements in order to prevent "reality shock".

It is recommended that a further step be taken. A system of mentoring would expand the concept of experience with support. This mentor would be more than just a presence in times of trouble. The mentor would be a resource and a support for the first crucial months as a new graduate. Organizations would benefit to the extent that turnover and absenteeism would decrease. Mentors would increase the individual nurse's sense of **self-esteem, control of situations and job satisfaction.**

Training facilities

Training facilities include community colleges and universities. The following recommendations are made to both

of these institutions under the assumption that there are certain global characteristics of the professional socialization process within both institutions.

Professional Identity and Locus of Control. The nurses in this study reported that as their sense of professional identity increased, so did their job satisfaction and personal accomplishment. Using these findings as a foundation, there are two recommendations that can be made within the perspective of Professional Identity and Locus of Control:

First, it behooves training facilities to begin the process of professional identity by preparing the student for the profession by imparting knowledge. It has been stated that knowledge is power. This knowledge, assumed to be attained through the socialization process and to become part of the nurses' professional identity, is indeed a powerful tool. Part of the assumption is that the nurse will acquire what nursing knowledge she/he will need to function. While students need to develop professional expectations, a sense of self and what fits in the workplace (Fagermoen, 1997), nurses need knowledge in order to deal with situations such as death, ethical dilemmas, diverse cultures, drug abuse (patients' and/or their own) and

critical situations. Unfortunately, many nursing training facilities do not make allowances in curricula for the type of courses with this kind of knowledge. Therefore, it is recommended that more courses in psychology such as personal development, death and dying, interpersonal communications, stress management, and assertiveness training be compulsory. These courses will increase the student's sense of self as a person and as a professional, and will give her/him the proper tools to deal with the real world of nursing.

Second, entrance into a profession that demands commitment and adaptability (as is the case with nursing), requires that each person make a conscious and informed decision to follow a certain career path. The assumption on the part of the training facility is that this decision is the right one. However, in medicine and in particular nursing, this assumption is not necessarily correct. Some initial career counselling, instituted in the early phases of training may determine if there is a potential for mismatch between the person and the profession. A match between person and profession increases the likelihood of satisfaction and self-esteem.

There are many programs routinely utilizing well-validated instruments in career counselling (e.g., the

Holland system and the Minnesota theory). Although these programs cannot absolutely determine a mismatch, and should not under any circumstances, be used as a determining factor for entrance into, or maintenance in a program, the Holland and Minnesota systems can aid the student in making an informed decision on a career. Therefore, a second recommendation within the perspective of **Professional Identity and Locus of Control** is that programs of initial career counseling be incorporated into the curriculum of training facilities in order to give the student a sense of control of their professional potential.

Locus of Control and Self-esteem. As previously recommended, mentors are important role models and support systems for nurses. As such, mentors should therefore be part of the training process. Whether this mentor be a student farther along in the process or a counsellor attached to the faculty, the underlying rationale is the same - support. Many times students will forgo seeking help due to time constraints or a sense of problem uniqueness. Many nurses learn how to help others but not themselves. Therefore, it is important that in professionalization, this mentoring provide the student with a growing **sense of control and of self-esteem.**

Nursing Specialty differences. As was discussed, the differences between the general staff nurses and the critical care nurses in this study may not be statistically, or even clinically significant. The differences are however, important from a practical standpoint. This is most evident for training facilities. Much, if not most **specialty training** is done subsequent to graduation. Many of these "post" programs focus on the peculiar aspects of patient care for that specialty and little, if any, is accomplished from the perspective of nursing issues. It is recommended that nursing training facilities give all students a sense of these specialty units by: (a) providing a limited rotation in one of the specialties in order to provide exposure; (b) mandating compulsory courses in specialities or (c) providing elective courses dealing with critical issues of specialty areas. These options will give the students an awareness of the unique issues of specialty nursing.

The recommendations proposed here, represent only a few possibilities. Changing organizations and training facilities is a slow process at best. However, research such as has been presented in this thesis, is a first step to acknowledging that the art and science of nursing does not

have to be painful. This thesis provides a clearer sense of what burnout represents for some nurses. Knowing what burnout is for some nurses, is the first step to prevention.

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## Endnotes

1. There is a debate that no traditional theory of burnout exists due to the empirical nature of the research in burnout (albeit scant). In essence then, it is argued that research related to burnout is atheoretical, or lacking theory (Maslach & Schaufeli, 1993; Schaufeli, Maslach & Marek, 1993).

This perspective of "blind empiricism" (Schaufeli, Maslach & Marek, 1993) can be refuted from a definitional standpoint of the following rationale: a theory is defined as a set of statements, general laws and principles that serve as axioms and definitions of concepts (Reese & Overton, 1970). These statements and assumptions link concepts and hypotheses to observations (Alcock, Carment & Sadava, 1988). In addition these integrated principles or hypotheses explain a wide array of phenomena and findings, and predict new events and experimental outcomes. These definitions of theory and hypotheses, clearly weaken the argument that burnout, being based on empirical research, is atheoretically derived.

2. One study by Meier (1984) demonstrated that depression is a steep loss of reinforcement over a short time and with some positive work outcomes. Burnout on the other hand, is a gradual loss of reinforcement with few positive work outcomes. He concluded that burnout is a valid construct with strong connections to depression and job satisfaction.

In a second example of the similarities between burnout and depression, Glass et al. (1993) in their study of hospital nurses, determined that a substantial amount (19%) of the variance associated with Emotional Exhaustion, a facet of Burnout, is accounted for by Depression. However, this finding is expected given that Emotional Exhaustion is that one dimension which shares most of the symptomatology of depression (Figley, 1995).

Glass et al., 1993, determined the discriminant validity of the measures of Burnout and depression using factor analysis. Further, Glass et al. (1993) indicated that Burnout has dimensions unique from depression. The researchers reasoned that if the perception of

uncontrollability is associated with burnout and subsequently to depressive affect, burnout is thus a precursor to job-related depression.

Other experts (Pines et al., 1981; Pines, 1993a,b) differentiated between burnout and depression. According to these experts, many professionals can experience stress, but only those professionals with high ideals, motivation and commitment can experience burnout. Without this element of commitment, the professional will describe job stress, alienation or depression, but not burnout.

Pines and colleagues (1981) described depression as a symptom which originated from within the individual or from the clinical history. In burnout, the antecedents and modes of coping are located in the environment. They confirmed that the **sypmtomatolgy** of burnout and depression are similar, but that the concepts are different (Pines et al., 1981). A burned-out individual can become depressed but a depressed individual does not necessarily burn out (Pines, 1993a,b).

Firth, McIntee, McKeown and Britton (1986 & 1987) studied the similarities between the concepts of Professional Depression and Burnout. They reported that professional depression is distinguishable from avoidance of problems, depersonalization, emotional draining and lack of accomplishment, but that there is some overlap with reported **symptomatology** of professional depression and of emotional exhaustion. The authors concluded that the definition of professional depression is very similar to the definition of burnout (Maslach & Jackson, 1981; Firth, et al., 1986 & 1987).

Indeed, the concept of professional depression originated from a study of the care of children in Long Stay Hospitals which included a section on the care-givers (Oswin, 1978). The term was developed by Oswin to describe what she likened to the depression experienced by unsupported parents of very mentally-handicapped children. The institutions where these nurses worked were described as chronically short staffed, less than adequate organizations with no guidelines. The nurses were characterized as concerned and caring but expected

to cope without complaints re lack of support and overwork. A typical staff member experiencing "professional depression" was depicted as disappointed in work aspirations, hardened, resigned, noncaring, flippant, obstructive, negative, apathetic, blaming the organization and feeling isolated (Oswin, 1978). The similarities between the description of a person in burnout and a person in "professional depression" are striking.

Likewise, Figley (1995) described compassion fatigue or Secondary Traumatic Stress (STS), referring to the Joinson (1992) discussion of nurses. Joinson (1992) reported that nurses preferred to discuss burnout from the perspective of compassion fatigue in that (a) compassion fatigue is related to the concept of empathy and (b) burnout is a derogatory label. Figley (1995) further reported that burnout, compassion fatigue and secondary traumatic stress can be used interchangeably. Figley (1995) thus demonstrated the **similarity of symptomatology** between Burnout and other constructs.

Many if not most of the discussions on burnout begin with a description of the characterizing symptoms (Mahrer, 1983). Initially it appears that the different authors in presenting the different symptoms are indeed presenting different syndromes. In reality, the authors are presenting a single phenomenon with overlap in symptoms (Cherniss, 1993; Hallsten, 1993; Mahrer, 1983; Maslach & Schaufeli, 1993; Pines, 1993). In a comprehensive review of empirical literature, Kahill (1988) categorized the symptomatology of burnout into: (a) physical symptoms including fatigue, exhaustion, sleep problems and gastrointestinal upsets; (b) emotional symptoms including anxiety helplessness and depression; (c) behavioural symptoms including aggression, callousness and pessimism; (d) work-related symptoms including quitting, absenteeism and theft; and (e) interpersonal problems including those of concentration, communication, dehumanization and withdrawal. These symptoms define all such phenomena as professional depression, compassion fatigue, tedium and burnout.

A second similar compilation of symptoms cited in the literature determined that of 130 symptoms arbitrarily divided into sub- and super-categories, none of the symptoms described were unique to burnout. Rather the symptoms describe many other concepts including depression (Burish, 1993).

Thus, though the symptoms of depression and burnout are similar, the constructs are separate and unique as indicated by: (a) the proven discriminant (Leiter & Durup, 1994) and convergent (Meier, 1983, 1984) validity; (b) the rationale of necessary and sufficient, i.e., a burned-out person is likely to be depressed, but a depressed person is not necessarily experiencing burnout; (c) a cluster of symptoms, interrelated and clinically-applied are not black and white but may shift categorically; and (d) different labels and designations for the same phenomena are applied, based on different researchers' training and thus, may vary extensively.

3. Femininity/masculinity has been treated by personality theorists as mutually exclusive poles on a continuum of sex-role orientations. In 1973, Constantinople argued

that indeed people could possess both female and male stereotypic characteristics and were determined to be androgynous in nature. From this perspective, femininity and masculinity are considered to be independent dimensions of personality (Thompson, 1986). Marsh and Myers (1986) reported that femininity and masculinity can more appropriately be conceived of as higher order constructs defined by a variety of characteristics. In other words, androgyny can be considered as a personality type rather than a range of traits on a continuum of sex-role orientations.

4. The empirical and anecdotal literatures do not specifically identify which facet or facets of burnout (Emotional Exhaustion, Depersonalization, Personal Accomplishment), upon which job satisfaction impacts. Therefore for purposes of simplification, job satisfaction will be posited here to impact directly on Emotional Exhaustion.
  
5. In order to form the calibration and validation subsamples, it was necessary to (a) separate the sample of critical care nurses into two equal groups such that

$N_{CC1} = N_{CC2} = 102$  where  $N_{CC1}$  is one half of the critical care nurses and  $N_{CC2}$  is the second half; (b) separate the sample of general staff nurses into two equal groups  $N_{GS1} = N_{GS2} = 170$  where  $N_{GS1}$  is one half of the general staff nurses and  $N_{GS2}$  is the second half; and (c) randomly assign one of the critical care and one of the general staff nursing groups to form the calibration sample ( $N_{cal}$ ) and the other critical care and the other general staff nursing sample to the validation sample ( $N_{val}$ ) such that  $N_{cal} = N_{val} = 272$ .

6. Bentler (1978) declared that the construct validity of a theory refers to the empirical adequacy of a causal model and is evaluated on relevant data by appropriate statistical methods. In other words, a theory can be validated through the use of causal modeling procedures. Because the methodology associated with this analytical approach demands that the researcher postulate both between- and within-network relations a priori, the postulated model is grounded in theory and empirical research. Because the first phase in the study had already determined a model based on theory and empirical data, it was decided to use this "determined" model

(i.e., the model for the overall sample), as the postulated or initial model for the next phase of determining models for the general staff and critical care subsamples. Ideally, the models for these subsamples should be validated using independent samples.

7. The model for general staff nurses is based on the full subsample of general staff nurses ( $N = 340$ ) and will be imposed on the model of the entire subsample of critical care nurses ( $N = 204$ ). Given that the analysis of covariance structures is grounded in large sample theory, the small number of critical care nurses precludes any cross-validation testing of the model for this specialized group of critical care nurses.
8. For clarification, results will be analyzed and discussed from the perspective of the models from the three samples [i.e., the model for the sample of nurses ( $\text{Model}_{\text{nu}}$ ), the model for the general staff nurses only ( $\text{Model}_{\text{gen}}$ ) and the model for the critical care nurses ( $\text{Model}_{\text{cc}}$ )].
9. Rossi (1965) defined Androgyny as a sex-role orientation that includes varying degrees of both stereotypic

feminine and masculine traits. Implicit in the literature is the assumption that androgyny contributes to personal and social effectiveness (Zeigler, 1977). Bem (1975) maintained that an androgynous person would do well regardless of the sex-typing behaviour while sex-typed persons would not. Spence, Helmreich and Stapp (1975), reported that androgynous persons score highest in measures of Self-esteem, and hypothesized that the androgynous person has higher levels of ego-functioning, is self-actualized and is better adjusted than the feminine, masculine, or undifferentiated individual.

Although studies have indicated that nurses tend to be stereotypically feminine, nurses themselves report that androgynous characteristics are considered to be the ideal. For example, in a pilot study of nurses, Simpson and Green (1975) determined that one third of their sample described themselves as androgynous. Likewise, Minnigerode, Kayser-Jones & Garcia (1978) found that the "ideal" nurse is described as being highly masculine, highly feminine, and at the median between masculine and feminine. Furthermore, Minnigerode reported that graduate nurses rate the "ideal" nurse as being more

masculine than feminine. Further support of the androgynous characteristic comes from a study by Napholz (1992) who found that, as a whole, nurses are androgynous and, in addition possess an internal Locus of Control.

Appendix A: Participation letters

Dear Registered Nurse,

My name is Terry Howard and I too am a registered nurse. I am asking you to participate in a research project that is the foundation of my doctoral thesis under the supervision of Dr. Barbara Byrne of the University of Ottawa. The focus of my thesis is some of the perceptions that nurses have of themselves and of the quality of their worklife.

#### Procedure

You are being asked to complete an information sheet and a series of questions which describe how you feel about yourself and your job. The questions should take about 50 minutes to answer.

#### Voluntary Participation

Your participation is voluntary and your right to decline will be respected without any jeopardy to you or to your employment.

#### Risks and Benefits

There is no risk involved in filling out the questionnaires.

All responses are anonymous and there are no questions pertaining to your identity. Only I will see the completed questionnaires. Confidentiality is assured.

There are no direct benefits to you as a participant in the study. However, your participation may assist in adding to the knowledge about the quality of worklife for nurses.

#### Questions

If you have any comments or questions about participation in the study, please contact me at 225-7537. You may also call Dr. Byrne at 564-4242 if you have questions. Final results from the project will be presented at a future nursing forum.

---

Letters

Consent

If you consent to participate, please complete the questionnaires at your convenience within the next few days and return them by \_\_\_\_\_ via intra mail to myself in the envelope provided.

I wish to thank you in advance for your willingness to help and for your time spent in filling out the sheets.

Yours sincerely,

Terry Howard,  
Doctoral Candidate, Clinical Psychology,  
University of Ottawa.

by  
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Dear Register  
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Sincerely,

Terry Howar  
Doctoral Ca  
University

Dear Registered Nurse,

I want to express my appreciation for your consideration of my research project looking at nurses' perceptions of the quality of their worklife.

If you have not been able to complete the questionnaires as yet, but are still interested in doing so, it is not too late. I would welcome any additional responses. If the package of questionnaires has accidentally been misplaced, you can obtain a replacement by calling my office at 225-7537.

Many participants have returned the completed package and I want to thank you for the time taken and the assistance given. Thank you for your support.

Sincerely,

Terry Howard,  
Doctoral Candidate, Clinical Psychology,  
University of Ottawa.

Dear Registered Nurse

My name is Terry Howard and I too am a registered nurse. I am asking you to participate in a research project that is the foundation of my doctoral thesis under the supervision of Dr. Barbara Byrne of the University of Ottawa. The focus of my thesis is some of the perceptions that nurses have of themselves and of the quality of their worklife.

#### Procedure

You are being asked to complete an information sheet and a series of questions which describe how you feel about yourself and your job. The questions should take about 50 minutes to answer.

#### Voluntary Participation

Your participation is voluntary and your right to decline will be respected without any jeopardy to you or to your employment.

#### Risks and Benefits

There is no risk involved in filling out the questionnaires. All responses are anonymous and there are no questions pertaining to your identity. Only I will see the completed questionnaires. Confidentiality is assured.

There are no direct benefits to you as a participant in the study. However, your participation may assist in adding to the knowledge about the quality of worklife for nurses.

Chers(ères) Infirmiers(ères) Diplômés(ées)

Je m'appelle Terry Howard et je suis également une infirmière diplômée. Je sollicite votre participation dans un projet de recherche qui est la base de ma thèse doctorale, sous la supervision du Dr. Barbara Byrne de l'Université d'Ottawa. La concentration de ma thèse vise certaines perceptions que les infirmiers(ères) ont d'eux(elles)-mêmes et de leur qualité de vie au travail.

#### Procédures

On vous demande de compléter un questionnaire qui décrit la façon dont vous vous sentez par rapport à vous même et à votre travail. Environ 50 minutes devraient être nécessaires pour répondre aux questions.

#### Participation volontaire

Votre participation est strictement volontaire. De plus, votre droit de refuser sera respecté sans que vous ou votre employeur ne soient menacés.

#### Risques et Bénéfices

Il n'y a aucun risque à remplir le questionnaire. L'information obtenue par le questionnaire demeurera anonyme et aucune question ne concernera votre identité. Je suis la seule personne qui prendra connaissance des questionnaires complétés. Il reste entendu que ces renseignements sont confidentiels.

Questions

If you have any comments or questions about participation in the study, please contact me in Ottawa at (613) 225-7537 (answering machine), or Dr. Byrne in Ottawa at (613) 562-5799. Final results from the project will be presented at a future nursing forum.

Consent

If you consent to participate, please complete the questionnaires at your convenience within the next few days and return them in the envelope provided by \_\_\_\_\_ via intra hospital mail to the office of Dr. Sal Colletta, Dept. of Psychology, Ottawa General Hospital. I wish to thank you in advance for your willingness to help and for your time spent in filling out the sheets.

Yours sincerely,

Terry Howard, R.N.  
 Doctoral Candidate, Clinical Psychology  
 University of Ottawa

Vous ne retirerez aucun bénéfice en participant dans cette étude. Toutefois, votre participation pourra nous permettre d'agrandir notre connaissance sur la qualité de vie au travail des infirmiers(ères).

Questions

Si vous avez des commentaires ou des questions, n'hésitez pas à me contacter à (613) 225-7537 (boîte vocale), ou Dr. Byrne à (613) 562-5799. Les résultats du projet vont être présentés à un forum futur des soins infirmiers.

Consentement

Si vous êtes intéressé de participer, veuillez compléter le questionnaire en vous assurant de le retourner au bureau du Dr. Sal Colletta, Département de Psychologie, Hôpital général d'Ottawa dans l'enveloppe ci-jointe. J'apprécierais recevoir votre questionnaire dans les meilleurs délais, au plus tard le \_\_\_\_\_. Je vous remercie à l'avance pour votre collaboration.

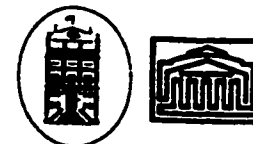
Terry Howard, R.N.  
 Candidat en doctorat, Psychologie clinique  
 Université d'Ottawa

Appendix B: Permission letters

LOEB MEDICAL RESEARCH INSTITUTE  
INSTITUT DE RECHERCHE MEDICALE LOEB

wp/DLB

OTTAWA CIVIC HOSPITAL  
HÔPITAL CIVIC D'OTTAWA



UNIVERSITÉ D'OTTAWA  
UNIVERSITY OF OTTAWA

November 8, 1994

Ms. M.T. Howard  
Division of Nursing  
Special Services  
D Main, Ottawa Civic Hospital

Dear Ms. Howard:

**Re: Protocol #94-180E Investigating the Personal and Organizational Variables  
that Impact on Burnout Among Nurses**

I am pleased to inform you that your project (listed above) was given expedited review by the Research Ethics Committee and approved. No changes, amendments or addenda may be made in the protocol or the consent form without the Research Ethics Committee review and approval.

Approval is valid for a period of one year ending November 8, 1995. Approximately one month prior to that time, a single renewal form should be sent to the Research Administration office.

The new guidelines of the Medical Research Council require a greater involvement of the Research Ethics Committee in studies over the course of their execution. You must maintain as part of your records copies of the signed consent form. As well, you must inform the Committee of adverse events encountered during the study, here or elsewhere, or of significant new information which becomes available after the Committee review, either of which may impinge on the ethics of continuing the study. The REC will review the new information to determine if the protocol should be modified, discontinued, or should continue as originally approved.

Sincerely,

A handwritten signature in black ink, appearing to read 'R. Saginur', written over a horizontal line.

Raphael Saginur, M.D.  
Chairman  
Research Ethics Committee

RS/mal

Conseil d'éthique en recherches  
737-8930



HÔPITAL GÉNÉRAL D'OTTAWA OTTAWA GENERAL HOSPITAL

Research Ethics Board  
APPROVAL 1995

December 1, 1995

Ms. Mary Theresa Howard  
72 Meadowlands Drive  
Nepean, Ontario  
K2G 2R8

Dear Ms. Howard:

**RE: OGH-95-121 Investigating the Nomological Network of Burnout Among Nurses**

The Research Ethics Board has reviewed your response to a letter of concerns that you submitted on the above protocol.

I am pleased to inform you that the REB finds these revision to be acceptable with respect to the ethics of research with human subjects and has therefore approved this protocol from December 1995 to December 1996. Enclosed are various forms which you may use throughout your study to inform us of any changes such as amendments, annual reports, toxicities or closure of study protocol.

The new guidelines of the Medical Research Council require a greater involvement of the REB in studies over the course of their execution. You must maintain, as part of your records, copies of the signed consent form. As well, you must inform the REB of adverse events encountered during the study, here or elsewhere, or of significant new information which becomes available after the REB review, either of which may impinge on the ethics of continuing the study. The REB will review the new information to determine if the protocol would be modified, discontinued, or should continue as originally approved.

Yours sincerely,

G.D. Goss, M.D., F.C.P.(SA), F.R.C.P.C.  
Chairman  
Research Ethics Board

GG/ram (SUBMITTED TO REB FOR SIGNATURE DEC 1/95)

encl (Approval Package)



THE  
AUSTRALIAN  
PSYCHOLOGICAL  
SOCIETY LTD

---

Mr. T. Howard  
72 Meadowlands Dr.  
Nepean  
Ont. K2G 2R8  
Canada

Dear Mr. Howard

Thank you for your letter dated 20 Nov. requesting permission to use test items from the article by Antill, Cunningham, Russell & Thompson appearing in the *Australian Journal of Psychology*, 1981, 33, 169 - 183.. Permission is given provided that the source of the material is acknowledged in full, and provided that it is accompanied by the following acknowledgment; Copyright (1981) The Australian Psychological Society Ltd. Reproduced by permission.

Good luck with your doctoral research.

Yours sincerely

G. R. Davidson Ph.D., F.A.P.S.  
Director of Communications  
5 December, 1996



Mary Theresa Howard  
72 Meadowlands Dr. W.  
Nepean, Ontario Canada K2G2R8

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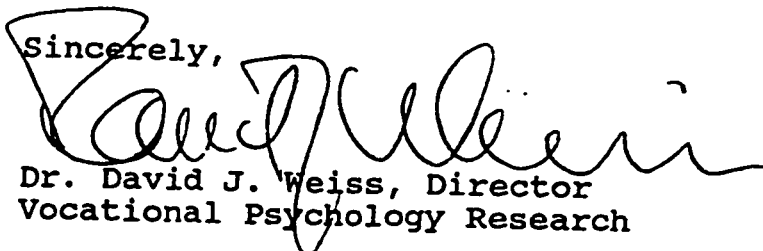
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Appendix C: Questionnaire

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Appendix C

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