Listening to New Zealand nurses.

A survey of intent to leave, job satisfaction, job stress,

and burnout,

A thesis submitted to

Auckland University of Technology in partial fulfilment of the degree of

Master of Health Science

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July 2004

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Attestation of Authorship

"I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person nor material which to a substantial extent has been accepted for the qualification of another degree or diploma of a university or other institution of higher learning, except where due acknowledgement is made in the acknowledgements."

Anne Daniels

Acknowledgements

Abstract

Background

Human and financial costs generated by nurse shortages, within a context of increasing numbers of patients requiring nursing care, demonstrate the potential significance of this study which aims to identify work related factors contributing to New Zealand nurses' intent to leave the job.

Methods

Two hundred and seventy five usable paper and pencil surveys (Response rate = 68.8%) from a random sample of 400 nurses employed in one New Zealand District Health Board were used to explore intent to leave the job. Three research questions directed the description of levels of job satisfaction, job stress, and burnout found in nurse participants, correlations between the three variables, and the identification of variables predicting intent to leave the job through regression analyses.

Results

Levels of job satisfaction were high, job stress was low, and burnout was average. Specifically, lack of opportunity to participate in organisational decision making, control over work conditions, control over what goes on in the work setting (key Magnet Hospital characteristics) were not evident, and with pay rates, were the main sources of job dissatisfaction. Workload was the most frequently experienced source of stress by nurse participants. Twenty-five per cent of nurse participants reported high levels of intent to leave the job. Correlations suggested that reductions in job satisfaction influenced increases in job stress and burnout. Job stress was associated with increases in emotional exhaustion. Emotional exhaustion was influenced by eight job satisfaction, job stress, and burnout subscales. Five subscales (professional

opportunities, praise and recognition, interaction opportunities, extrinsic rewards, lack of support) explained 26.2% of the variance in nurse participant's intent to leave.

Conclusion

Issues of power and control were associated with job dissatisfaction, job stress and burnout in nursing practice. However, predictors of intent to leave the job suggest a growing realisation by nurse participants that postgraduate education and nursing research may provide the tools to create positive change in the health care environment and make nursing visible, valued and appropriately rewarded.

Keywords: intent to leave, intention to leave, propensity to leave, job satisfaction, job stress, burnout.

Chapter One

Introduction

The New Zealand Nurses Organisation and the New Zealand Health Workforce Advisory Committee have estimated a national shortage of 2000 nurses which has led to the cancellation of surgical procedures and the closure of hospital beds (Carter, 2003; Dearnaley, 2002; Masters & Black, 2001; Health Workforce Advisory Committee, 2002). In addition, nurse shortages may be impacting on standards of nursing care (Cobden-Grainge & Walker, 2002; Gower & Finlayson, 2002) and the incidence in patient adverse events in hospitals across the country (Chisholm, 2003; Health and Disability Commissioner, 1998). Nurse turnover has been linked to nurse shortages (Goodwin, 2003). An understanding of the factors affecting nurses' decisions to leave the job could assist employers to develop responsive strategies to address nurse recruitment and retention in New Zealand. Therefore, the purpose of this thesis is to explore the relationship between the work-related variables of job satisfaction, job stress and burnout as predictors of nurses' intent to leave the job in New Zealand.

Structure of the Thesis

The aim of this introductory chapter is to present the background to the study summarising the complexity of work-related factors that contribute to the nurse retention and recruitment issue in New Zealand. It will proceed to outline the study aim and research questions. A review of national and international research literature in Chapter 2 provides an analysis of how the relationships between job satisfaction, job stress, burnout and intent to leave have been

studied. A conceptual map of these variables, drawn from the literature, will provide a framework for the study. The study methodology and assumptions will be outlined and critiqued in Chapter 3. Details of the research design, measurement method, data collection, ethical approval and analysis will be justified. Research results will be presented in Chapter 4 and discussed in Chapter 5. Implications for the nursing profession will be considered and recommendations made, concluding the thesis.

Background

Over the past decade a limited number of New Zealand studies have investigated nurse shortages specifically addressing why nurses leave the job (Cobden-Grainge & Walker, 2002; Gower & Finlayson, 2002; Ng, Jenkins, Dixon, & Cram, 1992) in comparison with the volume of research that has been conducted internationally (Cameron, Horsburgh, & Armstrong-Stassen, 1994; Lake, 1998; Shelledy, Mikles, May, & Youtsey, 1992). Nursing shortage evaluations in New Zealand indicate a multifaceted and costly impact (Health Workforce Advisory Committee, 2002; Jackson, Mannix, & Daly, 2001). Currently, replacing one nurse is estimated to cost NZ$48,000 and nurse turnover costs are estimated to be $100 million per annum (Ministry of Health, 2002). .

Research has demonstrated that a nurse's intent to leave the job is a consistent predictor of turnover behaviour (Tett & Meyer, 1993; Lake, 1998). Turnover is defined as involuntary or voluntary separation from a job. Involuntary turnover represents employer initiated job separation such as dismissals or redundancies where employees have little or no personal control (Griffeth & Hom, 2001). Voluntary turnover represents employees who freely

choose to leave a job to go to either another job within the same organisation or to go to another organisation (Griffeth & Hom, 2001). Intent to leave has been used as a proxy for voluntary turnover in a number of studies (Armstrong-Stassen, Al-Ma'aitah, Cameron, & Horsburgh, 1994; Cowin, 2002). For example, a study involving 1800 New Zealand nurses found that intent to leave was a consistent predictor of turnover for up to fifteen months after a nurse had reported seriously considering leaving the job (Ng et al,1992).

An emphasis on cost effectiveness during New Zealand health reforms in the late 1980s to 1990s (Davis & Ashton, 2001) has been associated with a reduction in nurse staffing and an increase in part time and casual nurse employment to maximise resource flexibility (Greenglass & Burke, 2001). Increases in nurse/patient ratios and part time or casual nurse employment have led to reports of higher nursing care workload (Alley, 2003; Fridkin, Pear, Williamson, Galgiani, & Jarvis, 1996; Kovner & Gergen, 1998; Newman & Maylor, 2002; Wickett, McCutcheon, & Long, 2003) resulting in an increased incidence of job dissatisfaction (Aiken et al, 2001), job stress and burnout (Duquette, Kerouac, Sandhu, & Beaudet, 1994), which are common predictors of intent to leave the job (Aiken, Clarke, Sloane, Sochalski, & Silber, 2002; Irvine & Evans, 1995; Shelledy et al, 1992). Nurse workload has been described in terms of quantifying nurse staffing (staffing levels and skill mix [the range of competencies and experience of registered nurses available to a service on any shift]), patient demand (patient acuity, patient turnover, assignment of nursing hours to individual patients), and patient outcomes (Wood & Rimmer, 2001).

Nurse Staffing, Patient Demand, and Patient Outcomes

Statistical information collected by government agencies show that the number of inpatients and day patients cared for in New Zealand public hospitals has nearly doubled, rising from 414,409 in 1990 to 799,973 by the year 2001 (see Figure 1), an increase of 193% (New Zealand Health Information Service, 2004). The number of day patients accessing health care from New Zealand public hospitals has increased from 71,017 in 1990 to 236,079 in 2000/01, which is a 332% rise in day patient throughput over ten years (Kay, 2003). Conversely, between 1994 and 2000/01 nurses caring for inpatients and day patients decreased from 19,217 to 17,085 respectively (see Figure1), a reduction of 12% (Kay, 2003). Nurse statistics prior to 1994 were not available from the New Zealand Health Information Statistics (Kay, 2003) therefore comparisons from 1990 to 1994 were not made.

Figure 1. Trends in Numbers of Patients and Nurses in New Zealand public hospitals (1990-2001)
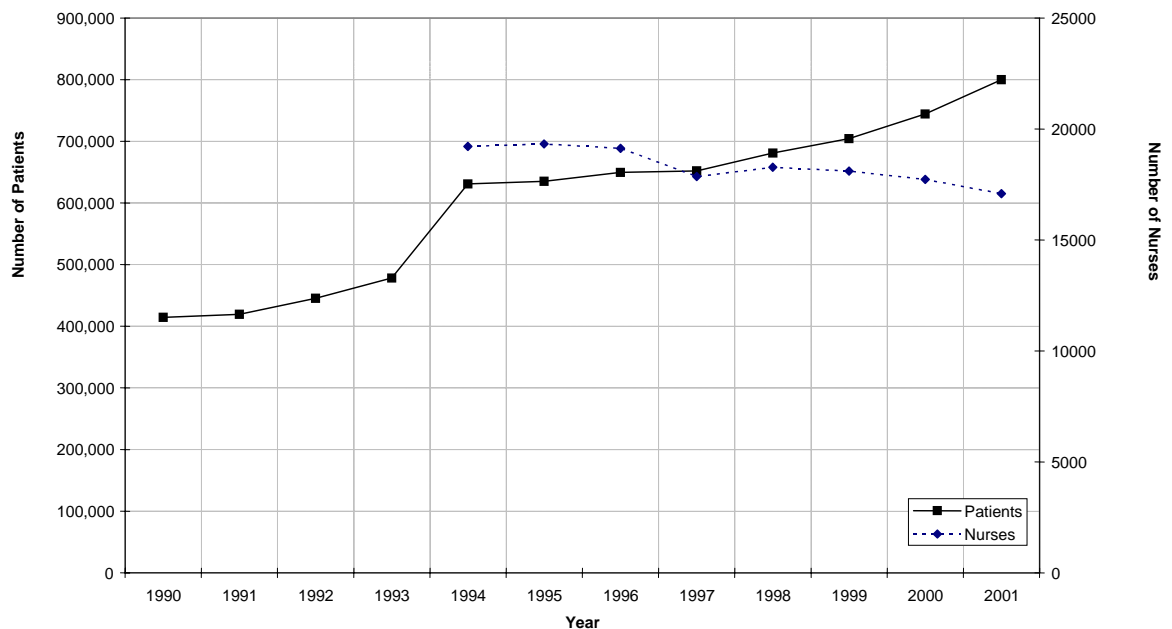
Source: New Zealand Health Information Service (NZHIS).

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An ageing New Zealand population has also contributed to an increased strain on the health service. In 1990, 121,446 patients admitted to New Zealand public hospitals were over the age of 60 (Kay, 2003). By 1999/2000 this number had doubled to 241,233 (Kay, 2003). Older patients often have a high acuity of illness requiring complex treatment, on going comprehensive assessment, and timely interventions (Ministry of Health, 1998). The increasing acuity of illness has also meant that patients no longer recover in acute care hospitals, but remain acute throughout their stay and are discharged as their recovery begins. The combination of increased patient throughput, the complexity of care required by an ageing population, and a decrease in the number of nurses caring for patients in acute care, have markedly intensified nurse workload (Ministry of Health, 1998).

Statistics cited in this study indicate that the increasing number of patients requiring nursing care from a diminishing nursing workforce will place extra strain on the health service and may increase the incidence of adverse event reporting. Adverse events are defined as unintentional or unintended complications resulting in temporary or permanent disability, including increased length of stay and/or financial loss to the patients (Davis, Lay-Lee, Schug, Briant, Johnson, & Bingley, 2001). Nurse/patient ratios have been associated with adverse but preventable outcomes by a gathering momentum of research internationally (Blegan, Goode, & Reed, 1998; Fridken et al, 1996; Needleman, Buerhaus, Mattke, Stewart, & Zelevinsky, 2002).

Adverse event research has demonstrated that nurses have a significant role to play in promoting optimal patient outcomes, but this is dependent on appropriate staffing mix and adequate nurse/patient ratios (Aiken et al, 2002). In addition to the increased demand for health care in New Zealand, the literature

identifies that key nurse recruitment and retention issues are associated with changes in the number of annual nurse graduate registrations, career choices made by students, and numbers of new graduate nurses who remain in nursing balanced against concerns over an ageing nursing workforce (Health Workforce Advisory Committee, 2002). Furthermore, attrition rates caused by New Zealand nurses going overseas, as well as changes in the hours of work and nursing skill mix, appear to further compound the problem (Wood & Rimmer, 2001).

Nurse Recruitment

New graduate nurse registrations averaged 2274 annually between 1990 and 2002 (Lee, 2003). Total numbers of registrations, which are displayed in Figure 2, include nurses who were educated in New Zealand and overseas nurses applying for registration in New Zealand. New Zealand nurse registrations have decreased by 41% from a high of 2043 in 1990, to a low of 1199 in 2002 (Lee, 2003). Overseas nurses registering in New Zealand for the first time picked up some of the shortfall. In 1990, 718 overseas nurses registered for the first time in New Zealand, a number that increased to 1360 in 2002 (Lee, 2003).

The decrease in the number of New Zealand students choosing nursing as a career in the last decade is reflected in several factors (Staiger, Auerbach, & Buerhaus, 2001). The first factor can be found in the proportion of women working in the business and financial sector which has increased from ten per cent in 1986, to fourteen per cent in 1996 (Statistics New Zealand Te Tari Tatau, 1998). In 1997, women tertiary students were more likely to be studying toward a national diploma/degree (50%) and be enrolled in the commercial and

business field (25%) than other fields (Statistics New Zealand Te Tari Tatau, 1998).

The second factor is found in the results of a study of New Zealand sex ratios in health care occupations (Grant, Robinson, & Muir, 2004). Male dominated health care occupations in 1971 are now balanced for the sexes whereas female dominated occupations remain so, indicating that widening career choices for women have attracted students away from traditional occupations such as nursing (Grant et al, 2004).

Figure 2. Annual Nurse Registrations in New Zealand (1990-2002)
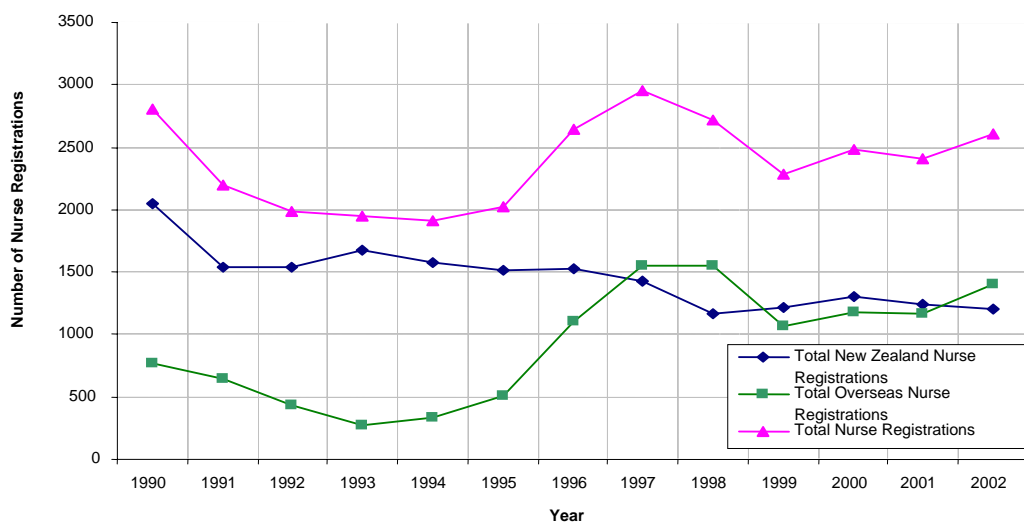
Source: Nursing Council of New Zealand.

Nurse Retention

Retaining students who choose nursing as a career has become an issue for the nursing profession and nurse employers. It was thought that the drop out rate for nursing students would decrease with the shift from hospital based programmes to polytechnic and university education (Cottingham, 2004). However the opposite is true as hospital based programmes averaged a 33% dropout rate in the late 1960s, compared to a 39-43% polytechnic/university dropout rate between 1995 and 1997 (Cottingham, 2004). In addition, several

New Zealand studies have found that once nurses register the degree of nurse attrition is high (Cobden-Grainge & Walker, 2002; Gower & Finlayson, 2002).

Retention of new graduate nurses is influenced by the age of these nurses, and the response of these nurses to student debt. The age of individuals now training signals a shorter working life of nurses graduating in New Zealand. A recent survey of 1206 student nurses enrolled in their third and final year of a Bachelor of Nursing programme found a large concentration of older students (Brown & Mathews, 2003). Only 13% of the students were under the age of 20 while 32% were aged 40 years or more.

In 1996 the average age of a nurse was 40.7 years (Kay, 2003). In 2003 the average age of a nurse was 43.7 years, indicating that the population of nurses who are in active work are not being bolstered by an annual influx of younger nurses (Kay, 2003). Nearly ninety per cent (31,788) of the nursing workforce in 2003 was over 40 years and of this group 36% (11,320) were older than 50 (New Zealand Health Information Service, 2004). Nurses born during the baby boom (1948 -1965) will be aged between 40 and 57 years of age in 2003. With a traditional retirement age of 60, a large body of nurses will be leaving the workforce between 2006 and 2018. To replace nurses retiring, a bare minimum of 21,069 would need to graduate and choose to actively work in nursing over the next 15 years. Of some concern is the fact that only 1,200 nurses and midwives graduated in 2002/3 (Nursing Council of New Zealand, 2003). At this rate only 18,000 new graduates would be available to counter the losses in nurse retirement and meet the increased patient demand at the current nurse/patient ratio, a shortfall of approximately 3,000 nurses.

Once nurses have graduated, student loan commitments are seen as a disincentive to stay in New Zealand (Brown & Mathews, 2003). In fact the

number of verifications sought by overseas regulatory authorities from the Nursing Council for New Zealand has more than doubled in the past 13 years and the trend indicates that this will continue. In 1991, overseas regulatory authorities sought 935 verifications from the New Zealand Nursing Council for New Zealand nurses or midwives (Lee, 2003). This number increased to 2206 by 2002. As pay rates in New Zealand for degree educated nurses are a great deal lower than pay rates offered overseas (Ministry of Health, 1998; Gordon, 2003), this factor may be contributing to the overseas exodus of New Zealand nurses.

Factors Associated with the Current Nurse Shortage

Nurses who remain in New Zealand and are working full time may be filling the gaps of an increased workload by working longer hours. In 1996, 11 nurses reported working more than 40 hours a week (Kay, 2003). By 2001, 1540 nurses reported their hours of work to be more than 40 hours a week (Kay, 2003). In addition, a distinct shift from full time to part time work has occurred during the 1990s, which may be exacerbating the shortage of nurses in New Zealand. In 1992, 51% of all actively working nurses worked full time (see Figure 3). Between 1994 and 2002 nurses working full time increased by only 1%, while nurses working part time climbed by 19% (Kay, 2003).

Changes in the hours nurses worked were exacerbated by the reductions in the number of Enrolled Nurses employed during the 1990s, and the casualisation of nurses, which featured in the change in skill mix during the restructuring era of the 1990s (Bradley, 2000). A 41% decrease in Enrolled Nurses from 6,531 in 1990 to 3,827 in 2003, contributed to a decrease in nurse numbers (Kay, 2003).

Figure 3. Number of Full Time versus Part Time Nurses in New Zealand (1994-2002)
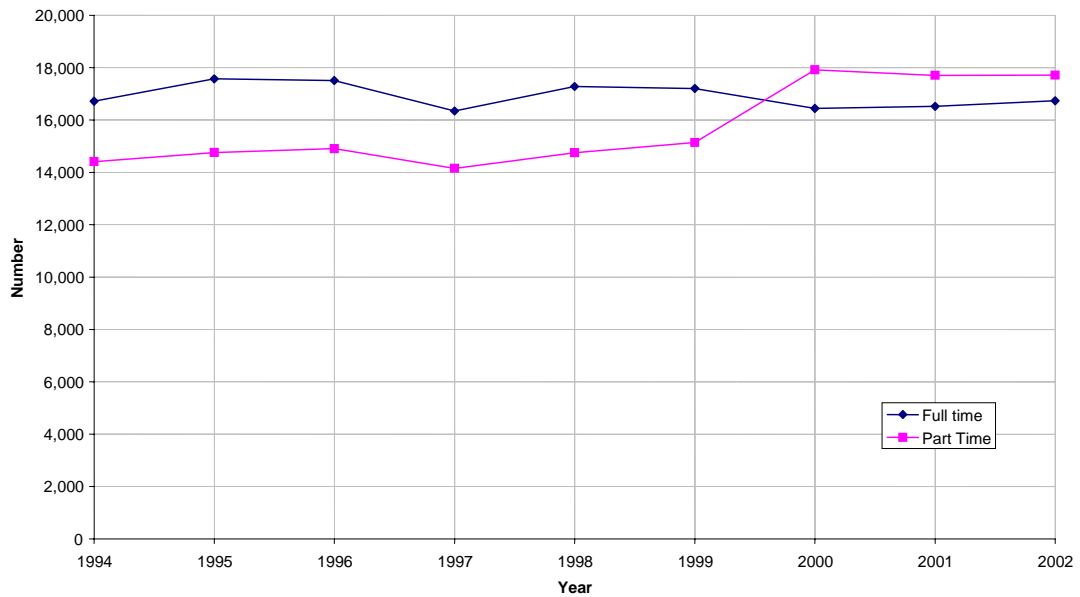
Source: Nursing Council of New Zealand, 2003.

Casualisation of the New Zealand nurse workforce was reflected by a 41% rise in the employment of casual nurses between 1990 -1993 (Dickson, 1993). A casual worker is defined as one who is expected to be available when required but is guaranteed no work on a regular basis (Dickson, 1993). By 1997, 9.7% (2,814) of the total New Zealand nurse workforce reported working as casual nurses (Ministry of Health 1999). However, it is not known how many nurses now work casually as this information is no longer collected by the Nursing Council of New Zealand (Kay, 2003).

Casual nurses are used to increase the flexibility of nurse employers to provide a service in periods of high demand while also minimising costs long term (Dickson, 1993). Dickson (1993) questioned the impact of continuity of care and patient safety where casual nurse employment is used consistently, a concern further highlighted in the Stent report (Health and Disability Commissioner, 1998). Little seems to have changed in recent times as demonstrated by a media report on a series of preventable patient deaths in one tertiary hospital (Chisholm, 2003). Coroner Michael Cooney stated that he

remained "unconvinced that the New Zealand hospital under investigation had in place adequate systems to ensure that appropriate numbers of qualified health professionals are available to meet workloads" (Chisholm, 2003).

Summary

Recruitment and retention of the nursing workforce has become a major issue nationally and internationally. Statistics provided by the Nursing Council of New Zealand and the New Zealand Health Information Service have confirmed a major shortage of nurses in New Zealand and the multifaceted nature of the shortage which may be underestimated. Financial and human costs generated by nurse shortages and an increasing patient population requiring nursing care, demonstrate the potential significance of this research study to identify factors that may be contributing to nurses' intent to leave the job in New Zealand. Job satisfaction, job stress and burnout are variables that have been linked to nurse intent to leave in research literature however few research studies have explored these variables in the New Zealand context.

Study Aim and Research Questions

The aim of this study was to explore the relationships between job satisfaction, job stress, burnout and intent to leave in a sample of New Zealand nurses. Three research questions were formulated from a review of literature to meet the aim of the study.

The research questions were:

1. What are the levels of job satisfaction, job stress and burnout in a sample of New Zealand nurses?

2. What are the relationships between nurse job satisfaction, job stress and burnout in New Zealand?

3. Do the variables of job satisfaction, job stress and burnout contribute to nurses' intent to leave in New Zealand?

Conclusion

Chapter 1 provided an introduction and background to this study leading to the aim of the study and research questions. Chapter 2 presents a literature review of the work-related variables job satisfaction, job stress, and burnout, as predictors of nurse intent to leave the job, which informs the development of the research methodology presented in Chapter 3.

Chapter 2 - Literature Review

Introduction

Chapter 1 focused on the shortage of nurses in New Zealand, providing the background and relevance of this study to future nurse recruitment and retention strategies in New Zealand. This chapter presents a detailed review of the literature beginning with the systematic search strategy employed. Previous research studies are critiqued to identify (i) definitions of the variables intent to leave, job satisfaction, job stress, and burnout, (ii) their methodological strengths and limitations, and (iii) their approach to the measurement of the variables being studied. Theoretical frameworks underpinning previous research are explored in order to construct a framework to guide this study. The chapter will conclude with a summary of the main themes drawn from the research literature, and provide justification for the research methodology chosen.

Search Strategy

A systematic review tool was used to search for research evidence related to the variables intent to leave, job satisfaction, job stress, and burnout (Glasziou, Irwig, Bain, & Colditz, 2001). A computer search for relevant literature was conducted in the databases CINAHL, Pyschlit, Pubmed, and Web of Science, using the key words: intent to leave, intention to leave, propensity to leave, job satisfaction, job stress, and burnout or a combination of these words.

Several questions were formulated to guide the review of literature. They were:

1. How are intent to leave, job satisfaction, job stress, and burnout defined?

2. What levels of nurse job satisfaction, job stress, and burnout have been reported in previous studies?

3. How has previous research exploring the relationship between intent to leave, job satisfaction, job stress, and burnout, been approached?

4. What is the relationship between intent to leave, job satisfaction, job stress, and burnout?

Literature had to meet the following criteria: the articles had to be published research studies in English, with a focus on nurses working in acute care healthcare settings. Four thousand three hundred and eighty-five articles were identified in the electronic search for the variable job satisfaction alone. To reduce the number of articles to a manageable number the word 'nurse' was introduced, and the search was repeated resulting in a total number of 36 journal articles identified as meeting the inclusion criteria. A further 29 research articles were identified through perusal of research references cited in these articles. Research studies were summarised and organised into a table to assist a critique of the literature (Appendix A).

Most of the studies found originated from the USA (n = 28) or England (n = 6). The remaining research was conducted in New Zealand (n = 5), Canada (n = 4), Palestine (n = 2), Jordan (n =2), Netherlands (n = 2), Australia (n = 2), Singapore (n = 1), Taiwan (n = 1), and Ireland (n = 1). A further five articles were meta-analyses and six were literature reviews of previously published research in the field.

In the following sections, literature exploring intent to leave, as the main focus of this study, is reviewed first, followed by nurse job satisfaction, job stress, and burnout.

<center>**Intent to Leave**</center>

Intent to leave has been researched in a variety of health care settings and nurse specialities. The majority of intent to leave research has been conducted in acute care hospital settings and has focused on identifying the factors that contribute to intent to leave and turnover, such as job satisfaction, job stress, and burnout. Thirty studies identified in the electronic search investigated intent to leave.

Intent to Leave Definition

The literature reports difficulty in defining the variable of intent to leave (Mobley, Griffeth, Hand, & Meglino, 1979). Intent to leave has been described using various terms, each with a slightly different focus such as intention to leave, intent to stay, intention to quit, withdrawal, behavioural intentions, and propensity to leave. Only five studies provided definitions and referred to intent to leave as "a conscious and deliberate desire to leave one's work place" (Chan & Morrison, 2000; Gurney, Mueller, & Price, 1997; Hinds et al, 1998; Lake, 1998; Prestholdt, Lane, & Mathews, 1987).

Past studies suggest that intent to leave can be defined from the viewpoint of predictable behaviour (Maertz & Campion, 1998), but unpredictable behaviour must also be considered. Lee, Mitchell, Wise, and Fireman (1996) explored the possibility that nurses might employ different decision making paths that did not depend on reasoned action. They studied 44 nurses working in five American hospitals and concluded that unpredictable events, defined as 'shocks to the system,' could result in immediate termination of employment by the nurse. 'Shocks to the system' included non-work related shock such as a partner being transferred to another city, or a negative organisational shock

such as denied request for annual leave, or an immediate job shock such as cost cutting which changed the job and the ability to meet career goals (Lee & Ashworth, 1996).

Definitions of intent to leave have also included the temporal relationship between the concept and turnover (Steel & Ovalle, 1984). In their meta-analysis of 34 turnover studies, Steel and Ovalle (1984) considered a number of models which suggested that shorter timeframes between intent to leave and the behaviour (turnover) will demonstrate stronger relationships. However, a nurse's stated intent to leave can be valid over a long period of time (Soothill, Barry, & Williams, 1992). Ng et al (1992) found that job satisfaction, via intent to leave, was predictive of turnover for up to fifteen months in a sample of 1249 nurses in a study conducted in New Zealand.

As the literature demonstrated a range of different approaches to understanding the concept intent to leave the job, it is important for the researcher to specify the conceptual definition in order for it to be judged congruent with the operationalisation of the concept in a research study (Polit, Beck, & Hungler, 2001). For this study, intent to leave was considered to be a proximal and predictable indicator of turnover, a definition based on the presumption that attitudes can have a direct impact on behaviour through their immediate influence upon behavioural intent (Ajzen & Fishbein, 1980).

Intent to Leave – Key Findings

Tett and Meyer (1993) have questioned the use of intent to leave as a proxy for turnover. They argued that intent to leave has only accounted for 25-27% of turnover variance. As a result it is thought that the variable may not be useful when generalising study results to situations that involve actual turnover.

Despite these concerns, the vast majority of research has found that intent to leave is the strongest predictor of turnover when compared to other variables (Maertz & Campion, 1998).

In the early 1990s, relatively low levels of intent to leave and turnover were found in three studies (Dolan, Van Ameringen, Corbin, & Arsenault, 1992; Ng et al, 1992; Soothill et al, 1992). Dolan et al (1992) surveyed 1237 staff working in 40 Canadian general hospitals, 74% of whom were nurses, and found a relatively low intent to leave the job. In a New Zealand study, Ng et al (1992) found that 17% of 1249 nurses left their jobs voluntarily within fifteen months of reporting intent to leave. Ten per cent of 434 nurses surveyed by Soothill et al (1992) indicated intent to leave and 77% of those who thought they would leave carried out their intentions and left over a period of three years.

Generally, studies conducted in the wake of the restructuring and reconfiguration of hospitals and health care systems internationally and in New Zealand during the1990s reported higher levels of intent to leave in nurses. Vahey, Aiken, Sloane, Clarke, and Vargas (2004) found that 36% of 289 American nurses surveyed intended to leave their job within a year. Newman and Meyer (2002) interviewed 124 nurses who were working in two general London hospitals. Sixty per cent of the nurses had thought of leaving their organisation, and 56% had thought of leaving nursing. The study was conducted in a context of 17,000 to 20,000 unfilled vacancies in England. In the same year, Lu, Lin, Wu, Hsieh, and Chang (2002) reported that 38% of 2550 nurses working in Taiwan hospitals had indicated intent to leave the organisation in response to lack of job satisfaction, and 30% intended to leave the profession.

New Zealand studies demonstrated similar levels of intent to leave in the late 1990s as those studies conducted internationally. Three hundred nurses (a response rate of 37.5%) responded to a survey posted in 1998 by Cobden-Grainge and Walker (2002) asking about their future career plans. Only 24% of nurses planned to stay in the job for 12 months indicating a high mobility of New Zealand nurses in the late 1990s. New Zealand nurses were also less likely to indicate a willingness to stay in nursing when compared to nurses working in other countries. The authors (Cobden-Grainge & Walker, 2002) compared study results to two international studies. Only 61% of New Zealand nurses indicated that they would still be nursing in five years compared to 98% of nurses surveyed in Canada (Hiscott, 1998), and 77% in Australia (Pelletier, Donoghue, Duffield, & Adams, 1998).

Four thousand eight hundred and eighty five nurses working in 24 New Zealand public hospitals responded to a survey by Gower and Finlayson (2002), of which 4603 surveys were useable (a response rate of 27%). Thirty-four per cent of these nurses indicated intent to leave the job within 12 months. In addition, 68% of the New Zealand nurses in Gower and Finlayson's study (2002) also reported that they thought it would be easy to get another acceptable job in nursing. This confidence may be related to economic trends which are thought to influence the relationship between intent to leave and turnover. High correlations between intent to leave and turnover are seen to characterise the relationship in prosperous economic times when jobs are abundant and employees are free to act on their intentions (Micheals & Spector, 1982).

Predictors of intent to leave the job in nursing were varied. Job satisfaction (Lu et al, 2002; Shader, Broome, Broome, West, & Nash, 2001) or

subscales of job satisfaction measurement tools such as career future (Al-Ma'aitah, Cameron, Horsburgh, & Armstrong-Stassen,1999; Armstrong-Stassen et al, 1994; Janssen, Schaufeli, & Houkes, 1999; Ng et al, 1992), autonomy (Dolan et al, 1992; Lake, 1998; Larrabee, Ostrow, Withrow, Hobbs, & Burant, 2003) and work conditions (Al Ma'aitah et al, 1999; Janssen et al, 1999; Vahey et al, 2004), job stress (Shader et al, 2001) and emotional exhaustion, a subscale of a burnout measurement tool (Armstrong-Stassen et al, 1994; Lake, 1998; Lee & Ashworth, 1996) were all found to predict intent to leave.

Nurses working in poor environments were two to three times more likely to report intent to leave than nurses working in good environments (Vahey et al, 2004). Good environments were described in terms of sufficient staffing to provide good quality care and adequate time with patients, administrative support that was reflected in nursing leadership which was supportive of nurse participation in decision making, and good nurse/physician relationships. Quality care is defined as the degree to which the services for individuals or populations increase the likelihood of desired health outcomes, and/or increase the participation and independence of people with a disability, and are consistent with current professional knowledge (Ministry of Health, 2003b).

Measurement of Intent to Leave

Differences in the way intent to leave was measured, the scarcity of instrument reliability reporting, and the use of single item measures were issues identified through the systematic review of the literature. Research reviewed for this study investigating nurse intent to leave generally used surveys with close ended questions to gather data. Two studies also used personal interviews in

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conjunction with a questionnaire (Cameron et al, 1994; Newman & Maylor, 2002).

While many researchers have approached the subject of intent to leave using surveys, comparisons were difficult. In a meta-analysis of 11 studies, Irvine and Evans (1995) suggested that the way behavioural intentions were framed within the context of a written survey may influence responses (e.g. intent to leave, intent to stay) and further, that the way these terms are operationalised may result in the measurement of different constructs. For example, studies measuring the behavioural intentions of intent to leave produced an average weighted correlation of -.54 with turnover, whereas other terms such as intent to stay produced weaker correlations (Irvine & Evans, 1995).

Twelve instruments used to measure intent to leave the job were found in this review of literature. An instrument developed by Lyons to measure intent to leave the job was cited by Al-Ma'aitah et al (1999), Armstrong-Stassen et al (1994), and Cameron et al (1994). Price & Mueller was cited by Larrabee et al (2003) and Gurney et al (1997) as the developers of another instrument measuring intent to leave the job. Five studies (Aiken et al, 2001; Chan & Morrison, 2000; Cobden-Grainge & Walker, 2002; Gower & Finlayson, 2002; Shields & Ward, 2001) used instruments which integrated a variety of variables including intent to leave the job into one measurement tool. Three instruments were author developed, two were tested for reliability and validity (Cowin, 2002; Ng et al, 1992), and one was not (Collins et al, 2000). Eight studies measured intent to leave the job with a single question and varying response options, however no reliability or validity testing was reported (Ingersoll, Olsan, Drew-Cates, DeVinney, & Davies, 2002; Janssen, de Jonge, & Bakker, 1999; Lake,

1998; Micheals & Spector, 1982; Newman & Maylor, 2002; Prestholdt et al, 1987; Soothill et al, 1992; Weisman, Alexander, & Chase, 1981). The remaining seven studies (Ferris & Rowland, 1987; Kalliath, O'Driscoll, Gillespie, & Bluedorn, 2000; Dolan et al, 1992; Hinds et al, 1998; Hom & Griffeth, 1991; Lu et al, 2002; Purvis & Cropley, 2003) used seven different instruments with only one report of reliability (Dolan et al, 1992).

Instruments employed to assess intent to leave have used either single or multi-items, or have been incorporated into a scale measuring a different variable (Tett & Meyer, 1993). Irvine and Evans (1995) suggested that the operationalisation of intent to leave needed to move from single item measures to include positive and negative statements that were specific to intent to leave. Tett and Meyer (1993) found in their meta-analysis of 155 studies exploring job satisfaction, organizational commitment, turnover intentions and turnover, that 15% of turnover variance was explained by turnover intentions when multi-item scales were used as opposed to 6% when single item turnover intention measures were used. Tett and Meyer (1993) also suggested that intent to leave should not be included in instruments measuring other variables as this may contaminate and inflate results.

Recommendations from previous researchers include the need for intent to leave instruments to differentiate between leaving the job, the organisation or the nursing profession as some variables are more strongly associated with different ways of operationalising intent to leave (Irvine & Evans, 1995). Lu et al (2002) explored the relationships between intent to leave, organizational commitment, and job satisfaction in hospital nurses. Lu et al (2002) found that job satisfaction was more effective in predicting intent to leave the profession

than intent to leave the organization indicating that intent to leave the job, the organisation or the nursing profession, stem from different attitudes.

Strength and Limitations of Studies Reviewed

The results from the studies reviewed must be treated with caution as sample size, sample methods, and response rates were variable. Sample size varied from 81 (Ferris & Rowland, 1987) to 43,000 (Aiken et al, 2001), in the 30 studies reviewed investigating intent to leave. Power analysis to estimate sample size was also not evident. Therefore, non-significant results of studies with small sample sizes may have failed to detect significant results causing a Type II error (Polit et al, 2001) i.e. the null hypothesis is regarded as true when it is false (Burns & Grove, 1993).

The majority of studies used convenience sampling or did not report the sampling method. Convenience sampling increases the risk of bias as participants select themselves (Polit et al, 2001). Only five of the 30 studies measuring intent to leave used a random sampling method (Hinds et al, 1998; Hom & Griffeth, 1991; Ingersoll et al, 2002; Lu et al, 2002; Ng et al, 1992). In addition, two studies used regression to analyse data despite inadequate sample size (Ferris & Rowland, 1987 [n = 81]; Larrabee et al, 2003 [n = 90]) which increases the risk of Type II error.

Mobley et al (1979) suggested multivariate studies are useful for interpreting the relative efficacy of a number of variables related to intent to leave, and can be a strategy to account for a greater proportion of variance which can improve understanding of the turnover process. Eleven studies analysed data using regression and found more variance explaining intent to leave was captured when more than one variable was tested. For example,

Prestholdt et al (1987) found six factors explaining 64% of intent to leave variance. However, this was not always the case. Larrabee et al (2003) regressed job satisfaction and ten other factors on intent to leave and found that job satisfaction explained 25.6% of the 26% variance found in nurse intent to leave, suggesting that nine factors had little to add to the explanation of intent to leave.

Job Satisfaction

Job Satisfaction Definition

Job satisfaction has been extensively studied, yet an agreed definition of the concept was not found in the literature. As the most commonly researched variable found to influence intent to leave, job satisfaction has been the focus of many theories and models of individual attitude and behaviour (Anderson, Ones, Sinangil, & Viswevaran, 2001; Drenth, Thierry & de Wolff, 1998). It is suggested, in job satisfaction theories, that an individual appraises the job against the values they hold which frame what is important (Drenth et al, 1998). If the appraisal is congruent, satisfaction can be the outcome, if not dissatisfaction can be the end result of an appraisal process (Drenth et al, 1998).

Job satisfaction has also been theorised to be an overall feeling of satisfaction towards the job and a concept that is made of different facets. For the purposes of this study, I have used the definitions developed by Drenth et al, (1998) and Misner and Cox, (2001) who defined job satisfaction as "a multidimensional affective and cognitive concept that is an interaction of an employee's expectations, values, and the working environment."

Job Satisfaction – Key Findings

Forty-four studies investigated nurse job satisfaction as either the focus of the study or as part of the study. Generally, strong levels of job satisfaction or dissatisfaction were not demonstrated and this result did not change in different samples of nurses working in different countries. For example, Shields and Ward (2001) surveyed 9625 English nurses employed in 91 English National Health Service organisations and reported that 48% of nurses in the study were satisfied with their jobs. Palestinian nurses (53% of 330 nurses) employed in twenty five acute care hospitals on the West Bank reported being satisfied or very satisfied with their jobs when surveyed by Ajamieh, Misner, Haddock, and Gleaton (1996). A large American study conducted by Aiken et al (2001) involving 43,000 nurses employed in American, Canadian, English, Scottish, and German hospitals found that 60% of American nurses were satisfied with their jobs and 40% were not. In contrast, nurses in New Zealand appear to be more satisfied with the job. Sixty nine per cent of New Zealand nurses (N = 4882) surveyed in a large study New Zealand study reported being satisfied with the job and 70% stated they were satisfied with being a nurse (Gower & Finlayson, 2002).

While levels of job satisfaction appear to be equivocal (except in New Zealand), facets of the job which are seen to contribute to job satisfaction or job dissatisfaction, such as working relationships, patient care, and work rewards are clearly differentiated. Work relationships between nursing peers appear to provide particular satisfaction (Ajamieh et al, 1996; Blegan, 1993; McNeese-Smith, 1999; Misner, Haddock, Gleaton, & Ajamieh, 1996; Price, 2002; Shields & Ward, 2001). Nurses also reported satisfaction with the working relationship they experienced with the doctors they worked with (Aiken et al, 2001; Gower &

Finlayson, 2002; Misner et al, 1996), but were dissatisfied with the relationship they experienced with their managers. The relationship between nurses and managers was characterised by lack of communication and lack of responsiveness to nurse concerns (Aiken et al, 2001), dissatisfaction with decisions made by management (Edwards & Burnard, 2003; Newman & Maylor, 2002; Tovey & Adams, 1999), weak organisational support (Aiken et al, 2002; Cobden-Grainge & Walker, 2002), lack of recognition (Newman & Maylor, 2002), and the amount of trust nursing staff had in management (Laschinger, Shamian, & Thompson, 2001).

Nurse job satisfaction derived from patient care (Cobden-Grainge & Walker, 2002; McNeese-Smith, 1999; McNeese-Smith & Crook, 2003; Shields & Ward, 2001) was tempered by dissatisfaction with the low level of control they had over work conditions (Aiken et al, 2001; Larrabee et al, 2003; Misner et al, 1996; Price, 2002), the high amount of responsibility they carried (Misner et al, 1996), their lack of opportunity to participate in decision making (Aiken et al, 2001), nursing staff that did not adequately meet the needs of patients, and their families (McNeese-Smith, 1999; Hinds et al, 1998), and lack of staff (Aiken et al, 2001; Tovey & Adams, 1999; Newman & Maylor, 2002).

Work rewards included satisfaction with recognition from nursing peers or doctors (Blegan, 1993; Tovey & Adams, 1999) however, pay rates (Aiken et al, 2001; Cobden-Grainge & Walker, 2002; Cowin, 2002; Gower & Finlayson, 2002; McNeese-Smith & Crook, 2003; Price, 2002; Purvis & Cropley, 2003; Shields & Ward, 2001; Tovey & Adams, 1999) and lack of career opportunities (Al-Ma'aitah et al, 1999; Ng, 1993, Purvis & Cropley, 2003; Shields & Ward, 2001) were consistent sources of job dissatisfaction. Low levels of satisfaction with pay (23%) were found by Gower & Finlayson (2002) in a New Zealand

study involving 24 hospitals and 4885 nurses. Pay rates were a particular issue for nurses who also had a student loan to pay off once they started work (Cowin, 2002; Cobden-Grainge & Walker, 2002). In contrast, nurses who were able to gain post graduate or specialist qualifications and an increase in pay and professional status were generally more satisfied (Chan & Morrison, 2000).

Measurement of Job Satisfaction

Questionnaires and interviews have been used to measure job satisfaction however questionnaires constitute the most frequent method of measuring the concept. Questionnaires containing single item global measures exploring the relationship between job satisfaction and intent to leave have strengthened the general belief that the relationship between the two variables is negative but are unable to provide a detailed explanation (Drenth et al, 1998; Ng, 1993). Subscales of measurement scales have been used by researchers to counter limitations of single item global measures. However, multi item facet measurements of job satisfaction, summed to obtain an understanding of overall job satisfaction, have not produced strong correlations with global scores (Drenth et al, 1998). Despite these criticisms of global and facet measures, many studies tend to use both to gain a better understanding of the variable.

Twenty different instruments were found amongst the literature reviewed exploring job satisfaction however three instruments were used more often than others. The Revised Nursing Work Index developed by Aiken and Patrician was cited in six studies (Aiken et al, 2001; Aiken et al, 2002; Gower & Finlayson, 2002; Lake, 1998; Laschinger et al, 2001; Vahey et al, 2004). The McCloskey/Mueller Satisfaction Scale developed by Mueller and McCloskey (Ajamieh et al, 1996; Mueller & McCloskey, 1990; Misner et al, 1996; Price,

1990) and the Index of Work Satisfaction (Cowin, 2002; Flannagan & Flannagan, 2002; Ingersoll et al, 2002; Shader et al, 2001) developed by Stamps and Piedmonte was cited in four studies each. A further six studies (Collins et al, 2000; Dolan, 1987; Janssen et al, 1999; Newman & Maylor, 2002; Mueller & McCloskey, 1990; Ng et al, 1992) used author developed instruments however only three studies (Janssen et al, 1999; Mueller & McCloskey, 1990; Ng et al, 1992) demonstrated reliability and validity testing. The multitude of instruments used to measure job satisfaction in nurses reduces the comparability of results and consequent understanding of the concept.

Job Satisfaction and Intent to Leave

Studies that have explored the relationship between job satisfaction and intent to leave in nurses have found fairly consistent negative relationships (Collins et al, 2000; Gower & Finlayson, 2002; Lake, 1998; Ng et al, 1992; Shader et al, 2001; Shelledy et al, 1992; Steel & Ovalle, 1984). As a result it has been assumed that low job satisfaction increases intent to leave. This assumption has been challenged from several perspectives. One perspective suggests that job satisfaction as opposed to job dissatisfaction may predict intent to leave. Four thousand American nurses responded (a response rate of 33%) to a survey conducted by Ingersoll et al (2002). The most satisfied nurses in the study were older and more likely to be planning to leave their jobs within 5 years, a phenomenon explained in terms of the probable retirement plans of the nurses (Ingersoll et al, 2002).

Another perspective stems from two studies which found only certain aspects of the job are linked to dissatisfaction and predict intent to leave particularly where nurses are generally satisfied with their jobs. For example,

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Larrabee et al (2003) found that low control over their practice environment (a subscale of the job satisfaction instrument), explained 25.6% (p < .01) of the variance in intent to leave where the total variance for the model was 26%, in a sample of 90 American nurses working in acute care.

Job satisfaction subscales most commonly associated with nurse intent to leave the job in the studies reviewed were pay (Cobden-Grainge & Walker, 2002; Cowin, 2002; Ingersoll et al, 2002; Newman & Maylor, 2002), career plans (Al Ma'aitah et al, 1999; Collins et al, 2000; Gurney et al, 1997; Janssen et al, 1999; Lu et al, 2002; Ng et al, 1992; Purvis & Cropley, 2003; Shelledy et al, 1992; Shields & Ward, 2001), relationships with co-workers (Cobden-Grainge & Walker, 2002; Newman & Maylor, 2002), and staff shortages (Chan & Morrison, 2000; Newman & Maylor, 2002).

Strengths and Limitations of Studies Reviewed

Generally, job satisfaction is found to be negatively related to intent to leave, however a relationship between the two variables is not often established when global measurements of job satisfaction are used. Subscale measurement of job satisfaction is less erratic in predicting intent to leave, however the degree of explanatory variance is sometimes low. A review of literature in the 1970s found less than 14% variance reported for the relationship between job satisfaction and intent to leave using subscale measurements (Mobley et al, 1979). More recent studies have found that job satisfaction explained up to 50% of the variance in intent to leave (Al-Ma'aitah et al, 1999; Gower & Finlayson, 2002; Larrabee et al, 2003; Shader et al, 2001).

Understanding the concept of job satisfaction in relation to intent to leave the job in nurses has also been hampered by the poor use of theoretical

frameworks to guide research. In this review of literature half (22) the studies did not use theory to explain the choices made in research methodology. The remaining studies cited eleven different theoretical frameworks, however Maslow's Hierarchy of Needs (Maslow, 1954) was used by seven studies (Ajamieh et al, 1996; McNeese-Smith, 1999; Misner et al, 1996; Mueller & McCloskey, 1990; Ng et al, 1992; Price, 2002) to provide explanation of research results, and further development of the job satisfaction concept.

The strength of research results are also dependent on the robustness of various aspects of the research method as poor methods can introduce bias (Polit et al, 2001). A review of the sampling methods used in the studies exploring job satisfaction found that 26 of the 44 studies had not stated the sampling method, while eight studies used random sampling, six used convenience sampling, and four used stratified random or purposive sampling methods. In addition, none of the studies appeared to use power analysis to obtain an appropriate sample for the study. The numbers of nurses included in the samples ranged from 30 to 43,000 and response rates ranged from 33.3% to 97.7% (see Appendix 1). Low response rates in studies with small sample sizes using inferential statistical analysis brings research results into question (Polit et al, 2001) as the attitudes of nurses (who choose not to participate) towards job satisfaction and intent to leave may have been quite different to those participating in the study.

Job Stress

Job Stress Definition

Most definitions of stress fall within three approaches: stimulus, response or transactional (Drenth et al, 1998). Criticisms of the response and stimulus

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definitions, however, cite the lack of recognition of individual differences that come from perceptual and cognitive processes that occur when an individual appraises his/her situation (Cooper, Dewe, & Driscoll, 2001). Lazarus and Folkman (1984) took another perspective, contending that stress was a result of a transaction between a person and his/her environment as opposed to a 'stressor'. This perspective is used to underpin the definition of stress found in New Zealand's Health and Safety in Employment Act (1992), which recognises stress as a hazard in the workplace. For the purposes of this study, stress is defined as "the result of an interaction between a person and their work environment. For the person it is the awareness of not being able to cope with the demands of their work environment, with its associated negative response" (Occupational Safety in Health Service of the Department of Health,1998, p. 4).

Job Stress – Key Findings

Low to moderate levels of stress from different sources were found in two studies of nurses (Fagin, Brown, Bartlett, Leary, & Carson, 1995; Shader et al, 2001). Sources of stress are differentiated into those that emanate from the context of the nurses' work environments or the content of the job. Contextual sources of job stress in nurses have been associated with an organisational culture where the concerns or issues raised by staff are dismissed as unimportant (Aiken et al, 2001; Newman & Maylor, 2002). Issues that influence nurse stress include responsibility levels (Edwards, & Burnard, 2003: Newman & Maylor, 2002), lack of opportunity in career development, and pay (Aiken et al, 2001; Edwards, & Burnard, 2003; Shelledy et al, 1992), inadequate opportunities to participate in decision making, having little control over what happens in the workplace (Aiken et al, 2001; Dolan et al, 1992; Edwards, &

Burnard, 2003; Flannagan & Flannagan, 2002; Lambert & Lambert, 2001; Newman & Maylor, 2002; Shader et al, 2001), poor working relationships with managers, and a lack of social support within the working environment (Edwards, & Burnard, 2003; Lambert & Lambert, 2001; Newman & Maylor, 2002; Shelledy et al, 1992).

The main sources of nurse stress derived from the job content appear to include high workloads and lack of time (Dewe, 1987; Edwards, & Burnard, 2003; Flannagan & Flannagan, 2002; Healy & McKay, 1999; Lambert & Lambert, 2001; Watson & Feld, 1996). Shift work, inflexible work schedules, unpredictable and long unsociable working hours, are also frequently cited by studies investigating sources of stress in nurses (Edwards, & Burnard, 2003; Healy & McKay, 1999; Newman & Maylor, 2002; Shader et al, 2001).

While there seem to be commonalities in sources of nurse stress, Foxall, Zimmerman, Standley, and Captain (1990), found significant differences between three groups of nurses (n = 138) working in different specialities (intensive care; medical/surgical; hospice) in three of eight stress subscales. Nurses working in medical/surgical units reported higher mean scores in stressors related to workload and staffing levels. Death of a patient was related to higher mean stress scores in nurses working in intensive care or in the hospice. Intensive care nurses and medical/surgical nurses who were shifted to work in unfamiliar units also reported increased stress levels. In contrast, Gray-Toft and Anderson (1981) found no significant differences in the source of stress between five different groups of nurses working in assorted specialities (hospice, surgical, oncology, cardiovascular surgery, medicine).

Measurement of Job Stress

As with job satisfaction, job stress has mainly been measured by closed question surveys, and there may be similar issues to the concerns regarding measurement as reported by Tett and Meyer (1993) including the use of instruments measuring other variables which may contaminate or inflate results. However, a review of literature on stress conducted by Lambert and Lambert (2001) concluded that most researchers used widely accepted, reliable, and valid measurement instruments when measuring stress.

In this review of literature various measurement tools of job stress were found. Four studies (Foxall et al, 1990; Healy & McKay, 1999; Lake, 1998; Watson & Feld, 1996) used a scale developed by Gray-Toft & Anderson (1981). Author developed tools were found in a further four studies (Dewe, 1987; Dolan et al, 1992; Gray-Toft & Anderson, 1981; Greenglass & Burke, 2001). Two studies used the Job Stress Scale (Leveck & Jones, 1996; Shader et al, 2001) and one study used the Nurse Stress Index (Flannagan & Flannagan, 2002).

Three studies exploring stress (Gray-Toft & Anderson, 1981; Healy & McKay, 1999; Watson & Feld, 1996) focused on the identification of the source and frequency of stressors found in the workplace using the Nursing Stress Scale (Gray-Toft & Anderson, 1981). While the use of the same tool allows for comparisons to be made, the multitude of changes that have occurred in the health care environment over the last twenty years since the tool was developed bring into question the ability of the tool to capture the most pertinent workplace stressors for nurses working today. The measurement of the source and frequency of stressors can also ignore individual response to stress and the outcomes of working in a highly stressful working environment. Past studies have also analysed items and subscales that are found within some scales

separately, but Dewe (1987) suggested that they should be viewed as multidimensional and not independent of each other.

Job Stress and Intent to Leave

Three studies investigated the role job stress has in predicting intent to leave the job (Dolan et al, 1992; Lake, 1998; Shader et al, 2001). Lake (1998), reported a non-significant relationship when job stress was regressed on intent to leave the job. Dolan et al (1992) developed and tested a measurement tool through factor analysis for a study that identified four stress factors: lack of professional latitude, clinical demands, workload problem, and role difficulties. Stepwise regression identified a positive relationship between intent to leave the job, lack of professional latitude ($r = 0.31$, p not stated), and role difficulties ($r = 0.28$, p not stated). The main predictor of intent to leave, lack of professional latitude, included items that suggested restricted autonomy, skill underutilisation, and lack of participation in decisions, while role difficulties included items measuring inconsistencies in patient management.

Shader et al (2001) explored job stress in 390 nurses working in a 980 bed American hospital. Correlation analysis indicated that the higher the stress level, the lower job satisfaction became ($r = -0.51$, $P < .001$) and the higher intent to leave ($r = 0.37$, $P < .001$). In a stepwise regression analysis intent to leave was predicted by work satisfaction ($r = -0.35$), overtime weekends ($r = 0.27$), job stress ($r = 0.18$) and group cohesion ($r = -0.13$). This model explained 31% of the variance in intent to leave.

Studies exploring job stress and intent to leave the job are few in number (Cooper et al, 2001). While regression analyses in two of the three studies reviewed strengthen the idea of that stress can influence intent to leave the job the relationship appears weak (Dolan et al, 1992; Lake, 1998; Shader et al, 2001). In addition a number of methodological weaknesses were found. Only one study exploring job stress (Lake, 1998) was found in this review of literature to use a longitudinal approach while the remainder used a cross sectional approach which limits an understanding of causation. The majority of studies (6) did not state the sampling method used while three studies used convenience sampling (Dolan et al, 1992; Foxall et al, 1990; Healy & McKay, 1999) and only two used random sampling (Dewe, 1987; Greenglass & Burke, 2001). When sampling methods cannot be assessed, the strength of study results can come under question.

All studies reviewed used the survey method to obtain data from nurse participants regarding job stress. In addition, theoretical frameworks were not used in five of the studies reviewed (Dewe, 1987; Dolan et al, 1992; Lake, 1998; Shader et al, 2001; Watson & Feld, 1996) however where a theoretical framework was used to explore job stress in nurses, Lazarus and Folkman's (1984) Theory of Stress and Coping was the most prevalent (Foxall et al, 1990; Gray-Toft & Anderson, 1981; Healy & McKay, 1999).

Burnout

Burnout Definition

Nineteen studies were identified investigating nurse burnout. It was observed that burnout like stress, could be a phenomenon that develops from

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the transaction between an individual and their work environment (Cooper et al, 2001). Responses to stressors have been termed 'strains' which can physiological, psychological, or behavioural (Cooper et al, 2001). In addition, burnout is thought to be either episodic or chronic (Aiken et al, 2002; Cooper et al, 2001). For the purpose of this study burnout is defined as "an extreme state of psychological strain and depletion of energy resources arising from prolonged exposure to stressors that exceed the person's resources to cope, particularly resources associated with human resource professions" (Cooper et al, 2001. p. 84).

Burnout – Key Findings

Seven studies conducted in the late 1990s through to the early millennium described levels of nurse burnout, three of which were conducted in New Zealand (Gower & Finlayson, 2002; Hall, 2001; Watson & Feld, 1996). With one exception, the studies were conducted in acute care hospitals. In addition, Maslach's Burnout Inventory (MBI) was used to measure burnout in all reviewed studies.

Data collected in 1991 from 820 nurses caring for AIDs patients in 20 American hospitals (Vahey et al, 2004), demonstrated average levels of emotional exhaustion (Mean 24, SD 11.0. Range: < 16 (low); 17-26 (average); >27(high)). Levels of emotional exhaustion in American nurses appeared to climb during the 1990s. Aiken et al (2001) used one of the three dimensions of the MBI, emotional exhaustion, to report burnout levels in 43,000 nurses working in five countries. Nurses working in the United States had higher burnout scores (43%) when compared with Canadian nurses (36%), English nurses (36%), Scottish nurses (29%) and German nurses (15%). Gower and

Finlayson (2002) repeated Aiken et al's (2001) study on 4603 New Zealand nurses. High levels of burnout were reported by 21% of the nurse sample, half the rate of American nurse burnout (Gower & Finlayson, 2002). Studies conducted in different populations of New Zealand nurses earlier in the 1990s reported average levels of emotional exhaustion (Hall, 2001; Watson & Feld, 1996).

Comparisons of burnout levels between nurses working in different work areas within the same organisation were not found in New Zealand. However, one international study compared burnout levels between 250 community psychiatric nurses (CPN) and 323 ward based psychiatric nurses (WBPN) working in one English Health Care Trust (Fagin et al, 1995). Fagin et al reported similar burnout levels where 48% of CPNs and 44% of WBPNs reported high levels of emotional exhaustion This finding suggests that the organisational environment rather than the type of nursing is the common factor in nurses burnout levels.

Six factors predicting nurse burnout were identified in the research literature. They were job dissatisfaction (Al-Ma'aitah et al, 1999; Armstrong–Stassen et al, 1994; Dolan,1987; Kalliath & Morris, 2002; Melchior, Bours, Schmitz, & Wittich, 1997), job stress (Shelledy et al, 1992; Lee & Ashworth, 1996), workload and time pressure (Aiken et al, 2002; Armstrong-Stassen et al, 1994; Janssen et al, 1999; Lee & Ashworth, 1996; Robinson et al, 1991), lack of involvement in the workplace and decision making (Garrett & McDaniel, 2001; Melchior et al, 1997; Robinson et al, 1991), lack of support from peers, supervisors or management (Aiken et al, 2002; Fagin et al, 1995; Garrett et al, Janssen et al, 1999; Melchior et al, 1997; Robinson et al, 1991), and lack of career opportunities (Armstrong-Stassen et al,1994).

Interestingly, none of the predictors of burnout identified by repeated studies in different samples of nurses in different countries found that burnout was predicted by stressors related to patients, rather they appear to be related to the organisation (Duquette et al 1994). Not only do the predictors of burnout in nurses seem unchanged over the past decade, but the findings appear contrary to the assertions made by Maslach, Jackson, and Leiter (1996), in that burnout is influenced by the emotional demands of interrelationships with patients.

Measurement of Burnout

The majority of studies reviewed used Maslach's Burnout Inventory (MBI) to explore the relationship between burnout and intent to leave the job (Aiken et al, 2002; Armstrong-Stassen et al, 1993; Gower & Finlayson, 2002; Janssen et al, 1999; Kalliath et al, 2000; Lake, 1998; Lee & Ashworth, 1996; Shelledy et al, 1992). The use of the same instrument to measure burnout allows for comparability and integration of studies to the main body of knowledge. The largest variance found to explain burnout in nurses was r = .50 (Garrett & McDaniel, 2001), suggesting that the MBI is capturing many of the factors that influence the development of burnout in nurses. However, while the instrument has been found to be reliable and valid in many studies, more recently, researchers have been looking again at the three subscales that make up the instrument.

Lee and Ashworth (1996) conducted a meta-analysis of 61 studies that had used the MBI to explore burnout and various correlates and found the three factors that make up the MBI to be consistent with those reported by Maslach and Jackson (1986) but was concerned regarding the apparent overlap

between some of the items found within the MBI and instruments measuring stress which could lead to inflated statistical relationships.

Kalliath et al (2000) conducted a confirmatory factor analysis of the MBI resulting in the deletion of the personal accomplishment factor as it did not form a coherent factor. Emotional exhaustion was found to be robust in this analysis and others and has been considered as the main element of the MBI. The two factor instrument demonstrated good reliability and predictive ability through a significant and positive relationship with intent to leave the job. However, most researchers continue to use the three factor model of MBI.

Burnout and Intent to Leave

An individual's intent to leave the job has been identified as an outcome of burnout (Cooper et al, 1998). Eight studies identified through the review of literature considered the relationships between burnout and intent to leave the job using descriptive, correlation, regression, path analysis, or structural equation modelling to examine the data (Aiken et al, 2002; Armstrong-Stassen et al, 1993; Gower & Finlayson, 2002; Janssen et al, 1999; Kalliath et al, 2000; Lake, 1998; Lee & Ashworth, 1996; Shelledy et al, 1992).

Several examples drawn from the literature demonstrate consistent relationships between the three MBI subscales and intent to leave the job where emotional exhaustion and depersonalisation were positively correlated and depersonalisation was negatively correlated with intent to leave. Lake (1998) regressed six variables on intent to leave and found that emotional exhaustion demonstrated the strongest negative correlation ($r = -.47$, $P < .001$). Aiken et al (2002) focused on the relationship between nurse to patient ratios, burnout, job satisfaction, intent to leave and patient mortality using logistic regression in a

study involving 10,184 American nurses. Forty-three per cent of the nurses who reported high burnout and were dissatisfied with their jobs reported that they intended leaving their jobs within twelve months whereas only 11% of nurses who reported low burnout and were satisfied with their jobs reported intent to leave. When burnout and intent to leave were compared between 586 Canadian and 363 Jordanian nurses working in their respective countries (Armstrong-Stassen et al, 1993), positive relationships between the two concepts were found, and emotional exhaustion predicted intent to leave in both populations of nurses. In contrast, Shelledy et al (1992), Janssen et al (1999), and Lee et al (1996), found social support from co-workers, supervisors, doctors, and friends was associated with a reduction in burnout and intent to leave.

Strength and Limitations of Studies Reviewed

The majority of the studies used Maslach's Burnout Inventory to measure burnout in nurses allowing for comparisons between studies to be made. However, the terms burnout and emotional exhaustion are sometimes used interchangeably (Aiken et al, 2001) which can result in confusion when attempting to review and compare research studies. In addition, emotional exhaustion was sometimes used as a proxy for the concept of burnout (Kalliath et al, 2000), as opposed to using all three subscales developed by Maslach and Jackson (1986), to conceptualise burnout.

Variables that were explored in relation to burnout produced at least 50% of the explanatory variance in regression analyses suggesting that the continued use of the MBI as a measurement tool can provide an understanding to a large proportion of work related factors that predict burnout in nurses. However, few studies used stratified samples to facilitate exploration of potential

differences between demographic groups for example age, gender, nurse specialities, or organisations. In addition, only three studies exploring burnout used random sampling (Hall, 2001; Laschinger et al, 2001; McNeese-Smith & Crook, 2003), the remaining sixteen research studies (2 were meta-analyses) did not report the sampling method used.

Intent to Leave, Job Satisfaction, Job Stress, and Burnout

Only two studies were found exploring relationships between intent to leave the job and job satisfaction, job stress and burnout (Lake, 1998; Shelledy et al, 1992). Lake (1998) explored the relationship between individual factors, nursing unit staffing measures, job opportunity, nurse clinical autonomy, affective responses to the job (job satisfaction, job stress and burnout), job duration, intent to leave, and turnover in a model developed from the literature. Data were gathered from a sample of 680 nurses in US acute care hospitals. Nurse job satisfaction was negatively and significantly correlated with intent to leave in a logistic regression model ($r = -.005$, $p < .01$), however the relationship was weak. Job stress demonstrated a positive relationship with intent to leave but was not significant. Emotional exhaustion was positively and significantly correlated with intent to leave ($r = .047$, $P < .001$). Results suggest that as job satisfaction declined, emotional exhaustion rose, and intent to leave increased in the nurses surveyed. Intent to leave was operationalised as a single item measure with four response categories and was predicted by tenure, emotional exhaustion, job satisfaction, RN vacancy rate, and the presence of children at home (Lake, 1998). The most significant predictors of intent to leave were high emotional exhaustion or high RN vacancy rate. This finding suggests a cycle of

high vacancy rates influencing high nurse workloads which increase emotional exhaustion, leading to increased intent to leave, and turnover.

Shelledy et al (1992) set out to determine the organisational, job specific and personal predictors of job satisfaction, burnout, absenteeism, and intent to leave the job or field in a sample of 458 Respiratory Care Practitioners working in Georgia, USA. Correlation and regression were used to elicit the relationships between the variables. The strongest predictor of burnout was the level of job stress experienced by nurses (β = 1.5, p < .00001) where β (beta) represents the partial regression coefficient. Nurse satisfaction with pay, promotions, and burnout were associated with job stress. Job satisfaction was predicted by recognition by physicians (β = .54, p < .001), recognition by nursing (β = .45, p < .001), burnout (β = -.13, p < .0001), intent to leave the field (β = -.62, p < .0001), absenteeism (β = .34, p < .05) and age (β = 0.12, p < .05). Burnout and job satisfaction (except for satisfaction with co-workers) were strong predictors of intent to leave the field. Job stress did not enter the model.

Studies exploring the variables job satisfaction, job stress, burnout, and intent to leave the job in a sample of New Zealand nurses within a common framework were not found. In a context where nurse job dissatisfaction, stress, and burnout appears to be rising, New Zealand nurses may also demonstrate increasing levels of intent to leave their jobs. A conceptual model explaining possible theoretical relationships between intent to leave the job, job satisfaction, job stress, and burnout is now described and discussed.

Conceptual Framework

The conceptual framework developed for this study is considered to be a multivariate paradigm for explaining and predicting intent to leave the job in nurses (Polit et al, 2001). It draws upon Ajzen and Fishbein's (1980) Theory of Reasoned Action (intent to leave), Maslow's (1954) Hierarchy of Needs (job satisfaction), Lazarus and Folkman's (1984) Theory of Stress and Coping, and Maslach et al's (1996) burnout model.

Intent to Leave

Ajzen and Fishbein's (1980) Theory of Reasoned Action has been used by several studies in its original or modified form (Micheals & Spector, 1982; Prestholdt et al, 1987). Underlying the theory is the assumption that people use available information in a reasonable and rational way to arrive at a behavioural decision such as leaving the job. Prestholdt et al (1987) tested the Theory of Reasoned Action in a sample of 885 nurses in the United States and found that the best predictor of intent to leave was attitude. Ajzen and Fishbein (1980) described attitudes as a set of beliefs regarding behaviour, and the outcome of behaving in that way. However, the majority of studies exploring intent to leave the job have not included beliefs regarding the behaviour (turnover), rather they have focused on identifying work related attitudes such as job satisfaction which may predict intent to leave the job (Lake, 1998; Prestholdt et al, 1987).

Job Satisfaction

Among the early theorists whose work influenced subsequent job satisfaction research, Maslow's Hierarchy of Needs is well known (Drenth et al, 1998). Empirical evidence has not always supported the validity of Maslow's

theory of a Hierarchy of Needs but recent studies have used Maslow's theory as a framework to measure or explain factors found in the exploration of job satisfaction (Ajamieh et al, 1996; Mueller & McCloskey, 1990; McNeese-Smith, 1999; Misner et al, 1996; Ng et al, 1992).

The theory assumes that unsatisfied needs motivate people to find a way to gain satisfaction. Maslow (1954) argued that when a need was substantially satisfied it became less important to an individual which allowed that individual to progress through the hierarchy. For this study job satisfaction has been defined as a multidimensional affective and cognitive concept that is an interaction of an employee's expectations, values, and environment. This definition is congruent with Maslow's (1954) theory where a nurse has specific expectations of the organisation she/he works for, and/or the job. Appraisals of expectations are conducted against the personal and professional values the employee holds.

Two categories of needs are contained within Maslow's (1954) theory, deficiency and growth needs. In the context of the job, deficiency needs include physiological needs (basic working conditions of oxygen, food, water, sleep), safety and security needs (safe work conditions, job security), and a sense of belongingness (interaction with co-workers). Growth needs include self-esteem (job status, recognition) and self-actualisation (challenging work, learning skill development, creativity).

Criticism of Maslow's (1954) theory has focused on the progression up the hierarchy and the suggestion that each need must be attained satisfactorily to the individual. However, Maslow (1954) stated that the hierarchy is not rigid and that most individuals are partially satisfied and dissatisfied in all their basic needs at the same time. Progression up the hierarchy is dependent on what is

most important to them at a specific point in time. On this basis an employee who has some job dissatisfaction and feels that they cannot change the situation to ensure that their particular expectations or values are met, may consider leaving the job as an alternative to staying (Anderson et al, 2001; Drenth et al, 2001). Alternatively, an employee who is generally satisfied with the job, but dissatisfied with a particular aspect of the job, may also leave to satisfy that need.

Job Stress

Lazarus and Folkman's (1984) Theory of Stress and Coping is based on the assumption that humans are constantly appraising relationships within the environment in terms of how they may affect their own wellbeing. Appraisal is seen as the mediator between the person and his/her environment (Lazarus & Folkman, 1984). Lazarus and Folkman (1984) posited two types of appraising, primary and secondary. The primary appraisal process includes an assessment by an individual of whether or not their values, beliefs, goals and situational intentions are being met by what is happening in their environment.

Secondary appraisal considers how to cope with questions, circumstances, and demands that may threaten or challenge what is important to a person. Nurses may consider many different types of coping strategies to deal with work related stress as an immediate solution to issues they feel they can deal with or have control over as part of their primary appraisal process, however if these strategies do not resolve the issues adequately, a secondary appraisal may include intent to leave the job.

Burnout

Maslach's Burnout Inventory used to measure burnout in humans was based on a theory developed by Maslach and Jackson (1986). Theoretical models from which this concept was developed have posited a number of approaches to understanding burnout (Cooper et al, 2001) however Maslach and Jackson's (1986) burnout model is well known and the most widely used in research (Bussing & Glaser, 2000).

In Maslach's burnout model, burnout is conceptualised in terms of three core elements: emotional exhaustion, depersonalisation and reduced personal accomplishment (Maslach et al, 1996). Work overload and personal conflict are factors that are seen to overextend individuals leading to feelings of emotional exhaustion, and not enough energy to face another work day filled with people in need. In an effort to cope with these feelings depersonalisation can set in, and is manifested in a withdrawal or detachment from being involved emotionally in the workplace. This process can become chronic as individuals begin to see those in need of care as objects rather than people. The last element, reduced personal accomplishment, refers to feelings of incompetence and a reduction in productivity at work. This situation can be exacerbated by a lack of social support or opportunities for professional development. Relationships between clients, colleagues and supervisors are fundamental to descriptions of burnout.

Criticisms of this model focus on the belief that emotional exhaustion in nurses rises in response to emotional demands made by patients. Research literature suggests that emotional exhaustion appears to arise in response to organisational or work related variables rather than those related to caring for patients (Duquette et al, 1993).

Conceptual Framework Development for this Study

Various models exploring turnover and intent to leave the job have ranged from simple to sophisticated (Maertz & Campion, 1998; Mobley et al, 1979), but even the most extensive inclusion of predictor variables have realised no more than 25% of the variance explained in many studies. Consequently, developing a simple framework that includes the work related variables job satisfaction, job stress, burnout and intent to leave the job in the New Zealand health care context where only a small but growing amount of research has been conducted is defensible. A simple model of nurse intent to leave the job derived for this study from theories underpinning research reviewed is depicted in Figure 4.

The model has two stages. The first stage includes the work related variables job satisfaction, job stress and burnout which are seen to directly influence the second stage, intent to leave the job. The Theory of Reasoned Action (Ajzen & Fishbein, 1980) is based on the idea that intent to leave arises from an individual's attitudes that develop in response to a change in the individual, the job, or the organisation over time. From this point of view, the literature suggests that reductions in overall job satisfaction or specific facets of job satisfaction are seen to increase intent to leave in the individual (Ng et al, 1992; Shields & Ward, 2001). Similarly, an increase in job stress, or facets of the variable, is thought to increase intent to leave (Dolan et al, 1992; Shelledy et al, 1992). Results of all studies reviewed suggest that emotional exhaustion and depersonalisation are positively related to intent to leave, therefore it is expected that intent to leave the job increases in conjunction with rises in these facets of burnout. Conversely, decreases in personal accomplishment, the third facet of burnout, is expected to increase intent to leave the job.

Figure 4. Conceptual Model of Nurse Intent to Leave

Job Satisfaction
- Total Satisfaction
- Extrinsic Rewards
- Scheduling
- Family and Work Balance
- Co-workers
- Interaction Opportunities
- Professional Opportunities
- Praise and Recognition
- Control and Responsibility

Job Stress
- Total Stress
- Death and Dying
- Conflict with Physicians
- Inadequate Preparation
- Lack of Staff Support
- Conflict with Nurses
- Workload
- Uncertainty Concerning Treatment

Burnout
- Emotional Exhaustion
- Depersonalisation
- Personal Accomplishment

Intent to Leave

-ve
-ve
-ve
+ve
+ve
+ve
+ve
-ve

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The relationships displayed in the conceptual model raised a number of questions regarding intent to leave the job in New Zealand nurses. They were:

1. What are the levels of job satisfaction, job stress and burnout in a sample of New Zealand nurses?

2. What is the relationship between nurse job satisfaction, job stress and burnout in New Zealand?

3. Do the variables of job satisfaction, job stress and burnout contribute to nurses' intent to leave in New Zealand?

Finding answers to these questions provided an impetus for researching intent to leave the job in a sample of New Zealand nurses.

Conclusion

The review of literature provided an insight into how nurse intent to leave research has been approached in the past and how research could be approached in the future. In addition, research results reviewed have provided an understanding of the variable intent to leave particularly within the profession of nursing.

Levels of intent to leave the job in nurses appear to have risen during the 1990s, an era marked by rapid change in New Zealand's health care environment. Relationships between intent to leave the job and job satisfaction in the literature are usually negative, whereas relationships between job stress, burnout, and intent to leave are usually positive. Specifically, a reduction in nurse job satisfaction influences a rise in intent to leave. Conversely, increases in job stress or burnout appear to increase intent to leave the job in nurses. Furthermore, intent to leave has been consistently predicted by job satisfaction and burnout, but job stress has added little to the explanatory variance.

While relationships between intent to leave the job, job satisfaction, job stress, and burnout appear to be relatively consistent, study results have been weakened by a number of methodological issues. Convenience sampling has dominated sampling methods found in most studies. Few studies used random sampling, or indicated the use of power analysis to gauge adequate sample size where regression analysis has been used calling into question the validity of results.

Most studies were cross sectional and used questionnaires to gather data from nurses working in acute care hospitals. While it is preferable to take a longitudinal approach to this study, a cross sectional study allows for comparability to previous studies conducted internationally. Unfortunately, many of the instruments used to measure intent to leave were single item instruments, or the reliability and validity of the instrument were not reported.

Only two studies identified in the review of literature investigated nurse intent to leave the job, job satisfaction, job stress, and burnout within a common framework, and both were conducted in the United States. The lack of published New Zealand studies investigating intent to leave raised a number of research questions, which were used to guide this study. Finally, the study attempts to improve some of the methodological limitations raised. The methodological approach to this study will now be outlined in detail in Chapter 3.

Job Satisfaction
- Total Satisfaction
- Extrinsic Rewards
- Scheduling
- Family and Work Balance
- Co-workers
- Interaction Opportunities
- Professional Opportunities
- Praise and Recognition
- Control and Responsibility

-ve

-ve

Job Stress
- Total Stress
- Death and Dying
- Conflict with Physicians
- Inadequate Preparation
- Lack of Staff Support
- Conflict with Nurses
- Workload
- Uncertainty Concerning Treatment

+ve

-ve

+ve

Burnout
- Emotional Exhaustion
- Depersonalisation
- Personal Accomplishment

+ve

Chapter Three – Research Methods

Introduction

Literature reviewed in Chapter 2 provided direction for studying the relationships between intent to leave the job, job satisfaction, job stress, and burnout in a sample of New Zealand nurses. The theoretical relationships between the variables of interest were explored resulting in the development of a conceptual framework and the following research questions:

1. What are the levels of job satisfaction, job stress and burnout in a sample of New Zealand nurses?

2. What are the relationships between nurse job satisfaction, job stress and burnout in New Zealand?

3. Do the variables of job satisfaction, job stress and burnout contribute to nurses' intent to leave in New Zealand?

The manner in which the research questions were framed indicates the positivist paradigm underpinning the study. The links between the positivist methodology and method in relation to the study questions, research design, data collection, and analysis are outlined and justified in this chapter. Ethical and Treaty of Waitangi issues that impacted on this research are also presented.

Methodology

The positivist methodology is made up of abstract theoretical assumptions and principles that underpin how a researcher frames research questions and the decisions made regarding the processes and methods to use (Grant & Giddings, 2002). Assumptions that provide a foundation for the positivist methodology include the idea that human experiences can be reduced

into quantifiable terms and explained, predicted or controlled (Playle, 1995). Research methods underpinned by the positivist methodology reflect a separation between the researcher and the subjects or participants of the research which is seen as necessary to achieve an inquiry that is both objective and free of bias, resulting in a 'truth' that can be trusted (Grant & Giddings, 2002). Criticism of this research approach, particularly in nursing, argue that a positivist inquiry denies the importance of subjective, social, spiritual, and interpretive aspects of what it is to be a person and a person's relationship with the world (Darbyshire, 1994; Rolfe, 1994). Therefore it is vital that researchers examine the methodological choices made by reflecting on the presuppositions that inform their questions (Ray, 1999).

Two presuppositions informed the development of the research questions and choice of a positivist methodology for this study: the political context and research replication. The need to understand political issues for the nursing profession originating from a market model of health care delivery was recognised by the Ministerial Taskforce on Nursing in 1998 (Ministry of Health, 1998). The impact of a stressful health care environment in the 1990s including compromises in the quality of nursing care, increased difficulties in retaining senior and experienced nursing staff, and recruiting new nurses to the profession, were noted in the report. However, a statement from Chief Nurse Advisor Frances Hughes that "only anecdotal evidence rather than the facts regarding a nursing shortage" (Kai Tiaki Nursing New Zealand, 1999) had been provided to the Ministry of Health, indicated the authority of a positivist approach to the research. This attitude toward the positivist philosophy may reflect Western society's ingrained understanding of the truth which is often considered to be numerical in form (Grant & Giddings, 2002). It could also

explain the experiences of nurses who have stated in the media that their concerns regarding nurse shortages were not being heard (Corbett, 2001).

Secondly, a great deal of research has already been conducted on nurse intent to leave from a positivist perspective, however, it is not certain whether the same attitudes towards intent to leave exist in the New Zealand nursing population. While it is acknowledged that there are multiple and competing ways in which researching intent to leave could be approached, the positivist approach to this research was seen as the most appropriate way to provide some 'facts' for nurse employers in order for nurses to be heard. Consequently, a cross sectional correlation design was chosen to gain understanding of the factors contributing to nurse intent to leave in a sample of New Zealand nurses.

Research Design

Correlation design is often used in cross sectional survey research (Anderson et al, 2001). A survey can obtain information regarding the prevalence, distribution, and interrelationships within a population at a fixed point in time. As the nursing population in any District Health Board (DHB) is diverse and spread through hospitals and the community setting, it was decided that the survey method would be feasible. The advantages of this approach are the ease of managing the data and its reduced cost in terms of time and money spent (de Vaus, 2002). However, in correlation design, the independent variable (the presumed causative factor) has already occurred and cannot be controlled as in experimental research (Polit et al, 2001). While there may be support for the existence of a relationship between variables it does not mean that one has caused the other (Polit et al, 2001).

Choices in the detail of the research design were guided by some of the limitations identified in the review of literature (Table 1).

Table 1.

Study Limitations and Improvements for this Study

Limitations found in Previous Research	Improvements for this Study
Limited number of research studies on New Zealand nurses attitudes toward leaving the job.	Study New Zealand nurses' attitudes towards staying or leaving the job.
Atheoretical approaches to research development.	Ajzen & Fishbein's (1980) Theory of Reasoned Action was used to guide the study exploring some of the possible contributing factors to staying or leaving nursing
Researcher developed questionnaires that were not tested for reliability or validity.	Questionnaires selected for the study had established reliability and validity.
Sampling procedures were not detailed and limited use of randomised sampling.	Random sampling procedures detailed to improve the potential for replication.
Low response rates limiting generalisability.	The sample population came from one DHB rather than a national sample on the basis that this may result in an acceptable response rate that would improve representativeness and enhance generalisability.

Research Methods

A research approach consistent with the positivist method was chosen. Nurses were surveyed by a set of paper and pencil questionnaires to obtain data on their attitudes toward the variables of interest. The setting, sampling method, survey instruments, data collection procedure, and approach to data analysis are now outlined.

Setting

New Zealand's public health system includes 21 District Health Boards (DHB) which came into existence on the 1st of January 2001 when the New Zealand Public Health and Disability Act 2000 came into force. District Health

Boards are responsible for providing government funded health care services for the population of a specific geographic area within allocated resources (Ministry of Health, 2003a). Populations within DHBs ranged from a high of 429,756 to a low of 30,294 in 2002 (Ministry of Health, 2003a). One DHB was approached in 2002 by the researcher and permission to access the nurses working within the organisation was granted. The DHB in question provides health care services to one of the larger populations in New Zealand. Anonymity of the DHB is maintained at their request (see ethics section page 65).

Sampling Method

Sample Size

Required sample size in a research study depends on the chosen power, alpha level, number of predictors and expected effect sizes (Tabachnick & Fidell, 2001). Several approaches to sample size calculations were taken to estimate a sample size large enough for a moderate effect of 0.5 to be statistically significant (Burns & Grove, 1993; Cohen, 1988). These approaches considered the plan for analysing data through correlation, regression, and factor analysis.

Correlation is used in this study to explore relationships between the independent variables nurse job satisfaction, job stress and burnout in the second research question. Tabachnick and Fidell (2001) suggested the formula $N \geq + 8m$ (where m is the number of independent variables) for correlation testing. As there are 3 independent variables in this study, the minimum number required in the sample is 74 ($N \geq 50 + (8 \times 3) = 74$).

To answer the third research question regarding the relative contribution of the variables of job satisfaction, job stress and burnout to nurses' intent to

leave through regression analyses, the formula $N \geq 104 + m$ was used to calculate sample size (Tabachnick & Fidell, 2001). A minimum of 107 nurses would be required in the sample to ensure the results were meaningful ($N \geq 104 + 3 = 107$). Both formula assume a medium sized relationship between the independent and dependent variables (alpha = .05 and Beta = .20; Tabachnick & Fidell, 2001).

As a factor analysis of one of the survey instruments used in this study (the McCloskey/Mueller Satisfaction Scale containing thirty one variables. Mueller & McCloskey, 1990) is intended at a later date, consideration for sample size adequacy for this process was included. Cohen (1988) suggests a minimum sample of 5 participants per variable, therefore a minimum sample of 155 participants would be required. Among the various sample size calculations, the maximum participation required was 155.

Consideration was then given to response rate. It was likely that the response rate would be < 50%, based on the variation of sample response reported in the literature, therefore the minimum survey sample size of 310 was rounded up to 400.

Sample Plan

The sample of 400 was randomly selected among 2196 registered nurses, enrolled nurses, and midwives in the paid employment of one DHB. Student nurses working in the organisation on placement from their various academic institutions and nurse aides were not included. Agency and casual nurses were included in the sample as the agency was internal to the organisation. Nurse participants could be employed in hospital or community settings.

Payroll services in the DHB utilise unique numbers to identify each staff member in paid employment within the organisation in their specific professional groups. A number is only used once and is not recycled when an employee leaves the organisation. Numbers were extracted from the Human Resource Information System, entered into an Excel spread sheet, and randomised using a programme called RAND. Then, the first 400 nursing staff unique code numbers were selected.

Survey Instruments

The operational definitions, response options, reliability, validity, and scoring of the instruments measuring the dependent variable intent to leave and each of the three predictor variables, job satisfaction, job stress and burnout are now described. Instruments for this study were chosen on the basis of previously established reliability and validity estimates in different countries and settings.

Intent to Leave

An instrument developed by Cowin (2002) was used to measure intent to leave in New Zealand nurses in this study. Exploratory and confirmatory factor analysis identified six items in the original instrument (Cowin, 2002). These were developed from declarative type statements that aimed to capture 442 Australian nurses' plans on whether to stay or leave the job. Cronbach's alpha estimates of reliability were compared between graduate and experienced nurses in Cowin's study and found to be consistently high (0.96 for the graduate group and 0.94 for the experienced group). For an instrument to be considered reliable, a level of 0.70 (Range 0.00 to 1.00) or higher is considered acceptable (LoBiondo-Wood & Haber, 1994).

A number of modifications were made to the instrument with permission from the author (L. S. Cowin, personal communication, June 26, 2002). Two items were deleted as they asked similar questions leaving 4 items. The first remaining item was changed from "as soon as it is convenient for me I plan to leave the nursing profession" to "I plan to leave my job within 6 months". The original instrument aimed to gain a general impression of a nurse's career plan but did not include a specific time factor (Cowin, 2002). A number of studies have suggested that the operationalisation of intent to leave requires temporal anchoring which can encourage participants to focus on a specific time period for predicting their future behaviour (Ajzen & Fishbein, 1980; Lake, 1998). Lake (1998) found that short term intent to leave (three to six months) was the most powerful predictor of turnover.

A second item, "I expect I will keep working as a nurse" was changed by adding the words "in this organisation". Ajzen and Fishbein (1980) suggest that it is necessary to specify a set of alternative behaviours as a person often has more than two alternatives that they can choose from. Previous research has supported this suggestion and found that intent to leave may stem from different attitudes when the participant is asked about their feelings towards leaving the job, the organisation, or the job (Lu et al, 2002). The inclusion of the words "in this organisation" allowed the instrument to capture attitudes towards intent to leave the job (item 1), the organisation (item 2), or the nursing profession (item 4). The wording of the third item was changed to reduce the formality of the statement and bring it into line with everyday language. The original item stated "My plan is to remain with my nursing career as long as I am able" and was changed to "My plan is to stay in my nursing career as long as I am able". The fourth item was not changed.

Response options to the items in the instrument developed by Cowin (2002) ranged from 1 (*definitely false*) to 8 (*definitely true*) and were maintained for this study. Items 2 and 3 were reversed scored to allow higher scores to reflect intent to leave (Pallant, 2001). Low scores indicate intent to stay. Items contained in the questionnaire were summed and divided by the number of items to calculate an overall mean as a general measure of intent to leave (Range 1-8). An acceptable alpha of 0.76 was found for the modified Nurses Retention Index in the current study.

Job Satisfaction

The McCloskey/Mueller Satisfaction Scale (MMSS) was used to measure New Zealand nurse satisfaction with the job in this study (Mueller & McCloskey, 1990). Permission was obtained from the authors via the publishers to use the instrument (Appendix B). The scale is made up of 31 items. Eight subscales were identified through factor analysis (Mueller & McCloskey, 1990): Extrinsic Rewards (3 items), Scheduling (6 items), Family and Work Balance (3 items), Co-workers (2 items), Interaction Opportunities (4 items), Professional Opportunities (4 items), Praise and Recognition (4 items), and Control and Responsibility (5 items).

Three hundred and twenty nurses were included in the study by Mueller and McCloskey (1990) to develop the MMSS. Test retest correlations of the scale were 0.89 and 0.64 at 6 and 12 months respectively (Mueller & McCloskey, 1990). Cronbach alphas for each of the eight subscales in the original study ranged from 0.52 to 0.84. Smaller alphas were found in the subscales with fewer items. Construct, content, and criterion validity were found to be acceptable by the authors (Mueller & McCloskey, 1990).

Several items were reworded for this study to reflect the difference in cultural contexts between the United States, where the instrument was developed, and New Zealand. Item 3 (from the Extrinsic Reward subscale) was changed from 'benefit package' to 'sick leave'. New Zealand nurses working in the public system do not currently have a contracted benefit package. Sick leave, on the other hand, is often a source of debate in nurses' contract negotiations and was not one of the MMSS original scale items. Item 20 (from the Professional Opportunities subscale) was changed from 'opportunity to interact with faculty of the College of Nursing' to 'opportunities for post graduate study'. The faculty of the College of Nursing was specific to the original study setting and indicated a relationship between nurses in employment and academic centres that offered postgraduate study, but the item was not transferable to the current study setting. However, opportunities for post graduate study in nursing are now available. Post graduate opportunities for nurses are being supported by the New Zealand government in recognition of the potential impact highly educated, experienced and skilled nurses can have on the health of the New Zealand population, therefore this item was changed to reflect such initiatives.

The original scale included 5 Likert-like response options for each item. A Likert scale consists of a series of statements and response options that represent agreement or disagreement on a subject (Polit et al, 2001). Recent research using the scale suggested elimination of the neutral response option to encourage participants to make a decision regarding their thoughts and feelings as opposed to indicating that they had no opinion (Ajamieh et al, 1996). Therefore, response options in this study ranged from 1 (*very dissatisfied*) to 4 (*very satisfied*). Total and subscale means were calculated as general and

specific measures of job satisfaction, and standardised to allow comparisons between the subscales to be made.

In this study, the MMSS demonstrated a Cronbach's alpha of 0.91 and the eight subscale alphas within this instrument ranged from 0.55 to 0.86. Four subscales did not meet the acceptable threshold of 0.70. They were Extrinsic Rewards (0.55), Family/Work Balance (0.56), Co-workers (0.60), and Interaction (0.69). Examination of the items within these subscales demonstrated that none of the items had an item scale correlation alpha below 0.3, with the exception of item 7 (opportunity to work part time; alpha 0.21). In this case, if this item was deleted the alpha for the subscale Family/Work Balance rose to 0.66. The low alphas for the subscales Extrinsic Rewards and Co-workers were not improved by deleting any of the items. The deletion of item 16 (care methods), found within the interaction subscale, had the potential to improve the subscale alpha from 0.69 to 0.72. In the original instrument the four subscales that did not meet the 0.70 threshold were similar to those in this study with one exception, Professional Opportunities, which had an alpha of 0.78 in this study as compared to 0.64 in the original.

Job Stress

Job stress experienced by nurse participants in this study was measured by the Nursing Stress Scale, an instrument originally developed by Gray-Toft and Anderson (1981), modified by Watson and Feld (1996) for the New Zealand context, and renamed the Nursing Situations Questionnaire. The development of the original scale involved the identification of thirty-four potentially stressful situations from literature and interviews with nurses, physicians, and chaplains (Gray-Toft & Anderson, 1981). The scale was administered to a sample of 122 nurses on five units of a large private hospital in the USA. Two estimates of

reliability were satisfactory (test-retest 0.81; Cronbach's alpha 0.89; Gray-Toft & Anderson, 1981). The scale has demonstrated consistent reliability over the years in samples of nurses across countries, including New Zealand and Australia (Green, 1989; Healy & McKay, 1999).

The Nursing Situations Questionnaire (NSQ) contained 36 items (Watson & Feld, 1996). Seven subscales differentiated the major sources of stress: Death and Dying (7 items), Conflict with Physicians (5 items), Inadequate Preparation (3 items), Lack of support (3 items), Conflict with Other Nurses (5 items), Workload (9 items), and Uncertainty Concerning Treatment (4 items). Permission to use the modified tool was granted by the author (P. Watson, personal communication, 28 June, 2002).

Modifications made by Watson and Feld (1996) for the New Zealand context included the rewording of some items and the addition of two items. For this study, items contained within the scale were returned to the original wording developed by Gray-Toft and Anderson (1981). Two items (35 and 36), added to the workload subscale by Watson and Feld (1996), were included. These items were developed from a review of literature which indicated that the supervision of casual or agency staff increased rather than decreased the stressors of permanent nursing staff (Watson & Feld, 1996). In addition to instrument modifications made by Watson and Feld (1996) item 37 was added to the Workload subscale by the researcher for this study, and was also based on previous research literature (Muncer, Taylor, Green, & McManus, 2001). Item 37 asked participants to report how often they experienced stress when support staff (e.g. social workers, physiotherapists, occupational therapist, orderlies) were not available (Muncer et al, 2001). The addition of item 37 brought the total number of items in the NSQ to 37.

Response options in the original scale ranged from 0 (*never*) to 3 (*very often*). For this study the range of response options were changed to 1 (almost never) to 4 (very often) to be consistent with the other instruments used in this study. Total and subscale means were calculated as general and specific measures of job stress to identify the frequency that certain nursing situations were perceived as being stressful by nurses, and standardised to allow comparisons between the subscales to be made.

A Cronbach's alpha of 0.88 was found for the NSQ scale in this study. However, the subscale alphas ranged from 0.42 to 0.83 which were generally much lower than previously found. Five of the seven subscales demonstrated an alpha < .70 and included Death and Dying (0.63), Conflict with Physicians (0.62), Inadequate Preparation (0.64), Conflict with Other Nurses (0.69), and Uncertainty Concerning Treatment (0.62). One subscale, Lack of Support (0.42), produced an alpha that was clearly unacceptable. However, no significant improvements were made by deleting items from any one of these subscales. The only subscale found with an alpha > .70 was Workload (0.83), which may be a result of the addition of 3 items for this study to the original 6 items found in Gray-Toft and Anderson's (1981) Workload subscale.

Burnout

Over 90% of research on burnout uses the Maslach Burnout Inventory (MBI) or some adaptation of it (Bussing & Glaser, 2000). Permission to use the instrument was gained from the author via the publishers (Appendix C). The Maslach Burnout Inventory (MBI) is designed to assess three aspects of burnout in separate subscales: Emotional Exhaustion (9 items), Depersonalisation (5 items), and Personal Accomplishment (8 items; Maslach et al, 1996).

Internal consistency of the subscales was estimated in a sample of 1,316 human service workers resulting in a Cronbach's alpha of 0.90 for Emotional Exhaustion, 0.79 for Depersonalisation, and 0.71 for Personal Accomplishment. Test retest reliability has been consistent within each subscale over time in a number of studies conducted in New Zealand (Green, 1989; Hall, 2001). Construct and discriminant validity were checked by the developers of the instrument and found to be acceptable (Maslach et al, 1996).

For each of the items, participants were asked to indicate how often they experienced certain feelings using responses from 0 (*never*) to 6 (*every day*). The variable was conceptualised as a continuous variable where experienced feelings range from low to high (Maslach et al, 1996). Items contained within each subscale are summed and divided by the number of items to obtain a mean (Range 0-6). Burnout levels are considered to be high when means are high for the Emotional Exhaustion and Depersonalisation subscales and low for the Personal Accomplishment subscale (Maslach et al, 1996).

In the current study Chronbach alphas for the three factors were comparable to those found in the original study and are as follows: Emotional Exhaustion 0.90; Depersonalisation 0.73; Personal Accomplishment 0.73.

Demographic Questionnaire

Nurse characteristics collected for this study were chosen to allow comparison between the study sample and the DHB profile. Gender, ethnicity, age, hours of work, and current work situation were included in the demographic questionnaire the study. In addition, work related and personal characteristics were collected. Questions were developed from various sources including the Annual Practicing Certificate Survey of New Zealand Registered

and Enrolled Nurses (New Zealand Health Information Service, 1999), a study of job satisfaction and turnover in New Zealand nurses (Ng et al, 1992), and finally a study exploring the characteristics and implications of an ageing nursing workforce (Buchan, 1999).

Data Collection Procedure

Survey packets contained a cover page (with the title, the inclusion criteria, a request to read the participant information sheet, the main reasons for the survey, an outline of the survey, and a simple instruction on what to do), the participant information sheet, questionnaires measuring job satisfaction (McCloskey/Mueller Satisfaction Scale), job stress (Nursing Situations Questionnaire), burnout (Maslach Burnout Inventory-Human Services Survey), intention to leave (Nurses Retention Index), and a demographic questionnaire (Appendix D).

The survey packets were numbered from 1 to 400 to protect the anonymity of participants. The sample list was prepared by the secretary of the Director of Nursing. A database was set up to generate sticky labels which were attached to the survey packet envelopes and mailed to selected participants on the first of February 2003.

A four week period of time was allowed for data collection. Follow up mail outs were made in this study as a strategy to encourage a high response rate (Asch, Jedrziewski, & Christakis, 1997). At the end of one week a postcard was sent out to all 400 participants (Appendix E). At the end of two weeks the secretary repeated the process for the second and last time sending surveys to staff that had not yet responded. In this way, printing costs were reduced.

The length of the questionnaire was dictated by the need to measure the variables and gather information on the participant's demographic characteristics. An acknowledgement of the fact that time is a valuable commodity was made in the participant information sheet as a declaration of appreciation to encourage nurse participants to complete the survey. As the topic of the survey (intent to leave the job) was also seen as being relevant to nurses, the length of the survey (9 pages) was considered to be less important.

The survey packet was stapled to encourage participants to read and answer the questions in the same order because the sequence in which participants read questions can affect the answers (deVaus, 2002). Brief instructions for answering the questions introduced each section of the questionnaire.

Ethical Approval

Ethical approval for the study was obtained from the Auckland University of Technology's Ethics Committee (Appendix F). The committee required that ethical approval should also be gained from the regional ethics committee situated in the study DHB. This requirement was met in October 2002 (see Confidential Section). Three major issues were considered in the process of gaining ethical approval: gaining access to the worksite, informed consent, and anonymity of participants.

In this study, access to one DHB was gained. However the DHB requested anonymity in reporting. Consequently, the DHB and the regional ethics committee have not been named and all references to the DHB or regional ethics committee in the participant information sheet have been deleted

for this publication. In addition, individuals within the organisation who assisted with the research process have not been acknowledged or named.

Informed consent is based on the right to full disclosure and self-determination (Polit et al, 2001). Information regarding the study was provided in the Participant Information Sheet to facilitate full disclosure of study details to participants (Appendix D). The return of the completed questionnaire inferred informed consent and was discussed in the participant information sheet.

Research participants also have a right to privacy and to expect that any data they provide will be kept anonymous. For this study, strategies were put in place so the researcher could not link a participant to the data. Unique identifiers used to randomise the target population were recoded by the secretary of the Director of Nursing who has the only access. In addition, only aggregate data for the sample population is reported, therefore individual nurse participants cannot be identified.

Treaty of Waitangi Principles

Advice was sought from the Maori nurse representative on the Regional Ethics Committee with regard to fulfilling the obligations of partnership between Maori and the Crown as set out in Te Tirito O Waitangi (Treaty of Waitangi). In response to this advice the Chair and Vice Chair of Te Runanga were asked for advice regarding the research proposal which was sent to them. The Te Runanga committee is made up of Maori nurses who are members of, and work in partnership with the New Zealand Nurses Organisation (NZNO). Advice given by the Chair and Vice Chair was to contact one of the Maori nurse leaders within the organisation to discuss the safety of Maori nurses who may choose to participate in the research. Following this discussion, I requested a letter of

intent to outline processes to follow if a Maori nurse participant identified any issues and brought them to my attention (see Confidential Section). No concerns regarding the research have been raised by any nurse participants during or after data collection. The Maori nurse leader has not been identified due to the organisation's request to remain anonymous.

Data Analysis

Data analysis was conducted using SPSS Version 10 and involved four processes, data management, exploration of sample responses and characteristics, item response, and analyses of the research questions. These procedures are outlined in the following section.

Data Management

As the surveys were returned, the identifying code numbers were logged into an excel database. Once logged, items from each of the questionnaires were entered into the SPSS database. Data were checked for accuracy, missing data, and outliers before statistical analyses were conducted. The SPSS database was printed and checked against the questionnaires for accuracy of data entry. Only rare errors were found and corrected.

On entering the data, it was noted that 17 nurses chose to give two answers to some items instead of just one. All 275 questionnaires were reassessed for these types of answers. A system of "under and over" was set up to facilitate data entry. When there were two answers to one item, for example "2-3", the higher number (3) was entered into the SPSS database then the next item with a similar response (2-3) was entered using the lower choice (2). In this way, the contribution of the item response to the mean was averaged

out without reducing variability. Two hundred and seventy five nurses chose to participate in the survey answering a possible total of 25850 items. Of these, only 32 (0.001%) items had two answers rather than one. It was considered that the approach taken would not unduly affect the results.

Sample Response and Characteristics

Response rates for early and late responders are presented in the results chapter followed by an assessment of non-responders. Non-response can introduce bias in research results. In this study, approaches were used to ascertain whether late respondents differ in key characteristics from those who responded early (Chen, Wei, & Syme, 2003), based on the assumption that late responders are similar to non-responders. Early respondents were those who responded within two weeks of the first mail out, while late respondents were those whose surveys were returned after the date of the second mail out. Demographic characteristics and mean scores for total job satisfaction, total job stress, emotional exhaustion, depersonalisation, personal accomplishment and intent to leave were assessed using t-tests for independent samples for differences between the two groups (Chen et al, 2003). In addition, the 2002 DHB profile of nurses are presented to allow the reader to judge generalisability of the sample. Statistical analyses comparing characteristics are not provided as that analysis would violate assumptions of independent samples.

Item Non-response

Non-random missing data can affect the generalisability of results (Tabachnick & Fidell, 2001). A number of nurses chose not to answer specific questions, leave a question blank, or write "not applicable". Different codes

were used for "not applicable" and "missing" to differentiate between the two types of missing data and to identify any patterns. Rates of item non-response will be presented in the results chapter.

Analyses for each Research Question

Questionnaires used to collect the independent and dependent variable data were Likert-type scales where the level of measurement is ordinal. (Fowler,Jarvis, & Chevannes, 2002). Ordinal scales often have rectangular distributions rather than normal distributions which can create problems for multivariate analyses (Tabachnick & Fidell, 2001). However, if the measurement scales are ordinal, have a large number of categories, and the data meets the assumptions that underlie the approach taken to analyse the data, then ordinal scale data is often treated as interval scales (Tabachnick & Fidell, 2001), which was the case for this study.

Descriptive analyses (means, 5% trimmed means, medians, standard deviations, range of scores, outliers, skewness and kurtosis) were used to check for any violations of normality. Internal reliability of the instruments was examined and the results were provided earlier in this chapter. The research questions guided the description of the data and the analysis of the relationships between the variables of interest through correlation and regression.

Question 1.

What are the levels of job satisfaction, job stress and burnout in a sample of New Zealand nurses?

Levels of job satisfaction, job stress and burnout were evaluated using

descriptive analyses. Item frequencies, subscale and total mean scores, standard deviations, skewness and kurtosis are reported for each variable in the results chapter. Comparison of levels found in this study to those in the literature will be presented in the discussion chapter.

Question 2.

What are the relationships between nurse job satisfaction, job stress and burnout in New Zealand?

Correlation analyses were conducted to explore the relationship between job satisfaction, job stress and burnout in the sample of nurses. Spearman's Rank Order correlation co-efficient (Spearman's Rho) was used. Spearman's Rho is a nonparametric test and is used when the data is ordinal, or when the assumptions of Pearson's r cannot be met, and also when the scores are skewed (Burns & Grove, 1993).

Correlations between two variables can range between -1.00 and 1.00 (Pallant, 2001). A correlation of 0 indicates no relationship while a correlation of 1.00 indicates a perfect positive relationship and -1.00 indicates a perfect negative relationship (Pallant, 2001). Cohen's (1988) guidelines were used to interpret the correlation values as set out below in Table 2.

Table 2.

Correlation Strength and Range.

Strength of correlation	Range
Small	r = .10 to .29 or r = -.10 to -.29
Moderate	r = .30 to .49 or r = -.30 to -.49
Large	r = .50 to 1.0 or r = -.50 to -1.0

Note. Adapted from "SPSS Survival Manual". By Julie Pallant, 2001

Despite the directionality evident in the literature review regarding the relationships between job satisfaction, job stress, and burnout, a conservative approach was taken using 2 tailed ($p < .05$) rather than one tailed analysis. As the sample was large, very small correlations can be statistically significant (Pallant, 2001), therefore the focus should be on the strength of the correlations rather than the p value.

Question 3.

Do the variables of job satisfaction, job stress and burnout contribute to nurses' intent to leave in New Zealand?

Multiple regression was used to assess the contribution of the independent variables job satisfaction, job stress, and burnout, to the dependent variable, intent to leave. Independent variables most effective in prediction are highly correlated with the dependent variable but not highly correlated with other independent variables (Tabachnick & Fidell, 2001). Prior to conducting the regression analyses, the necessary assumptions (such as sample size, multicollinearity and singularity, outliers, normality, linearity, homoscedasticity, independence of residuals) were tested.

Multiple regression evaluated how much variance in intent to leave the independent variables were able to explain as a group and independently (Pallant, 2001). In addition, correlations and the regression model are reported. Beta weights were used to interpret the relative importance of the predictors. Beta weights (z scores) standardise the independent variable means and standard deviations of the predictor variables (Green, Salkind, & Akey, 2000).

Conclusion

This chapter examined the positivist methodological approach taken in this study and justified decisions made regarding the research method to demonstrate consistency between both. The results of the study are presented next in Chapter 4.

Chapter Four – Results

Introduction

This chapter begins with sample response and characteristics. Next, the three research questions are addressed, leading to a discussion of the results in Chapter 5.

Sample Response

Response Rate

Four hundred surveys were distributed and 297 were returned (see Figure 5). One participant did not meet the inclusion criteria. Another participant answered less than 30% of the questions and was not included. Twenty surveys were returned with a refusal to participate. The response rate (69%) exceeded the targeted non-response rate of 50%.

Nurses (n= 20) who refused to participate did not complete the demographic section of the survey as requested in the instructions. Therefore, assessment of non-response bias between responders and nurses who refused to participate was not possible. However, early and late responders were compared to identify possible non-response bias. Mail out response rates were as follows: first mail out 49% (n = 196); second mail out 25% (n = 101). No differences were found between the early or late responders in job satisfaction, job stress, burnout, or intent to leave reducing the concern regarding non-response bias.

Some nurses who refused to participate wrote various comments. These comments are utilised to add possible explanations to the findings in the discussion section.

Figure 5. Sample Response
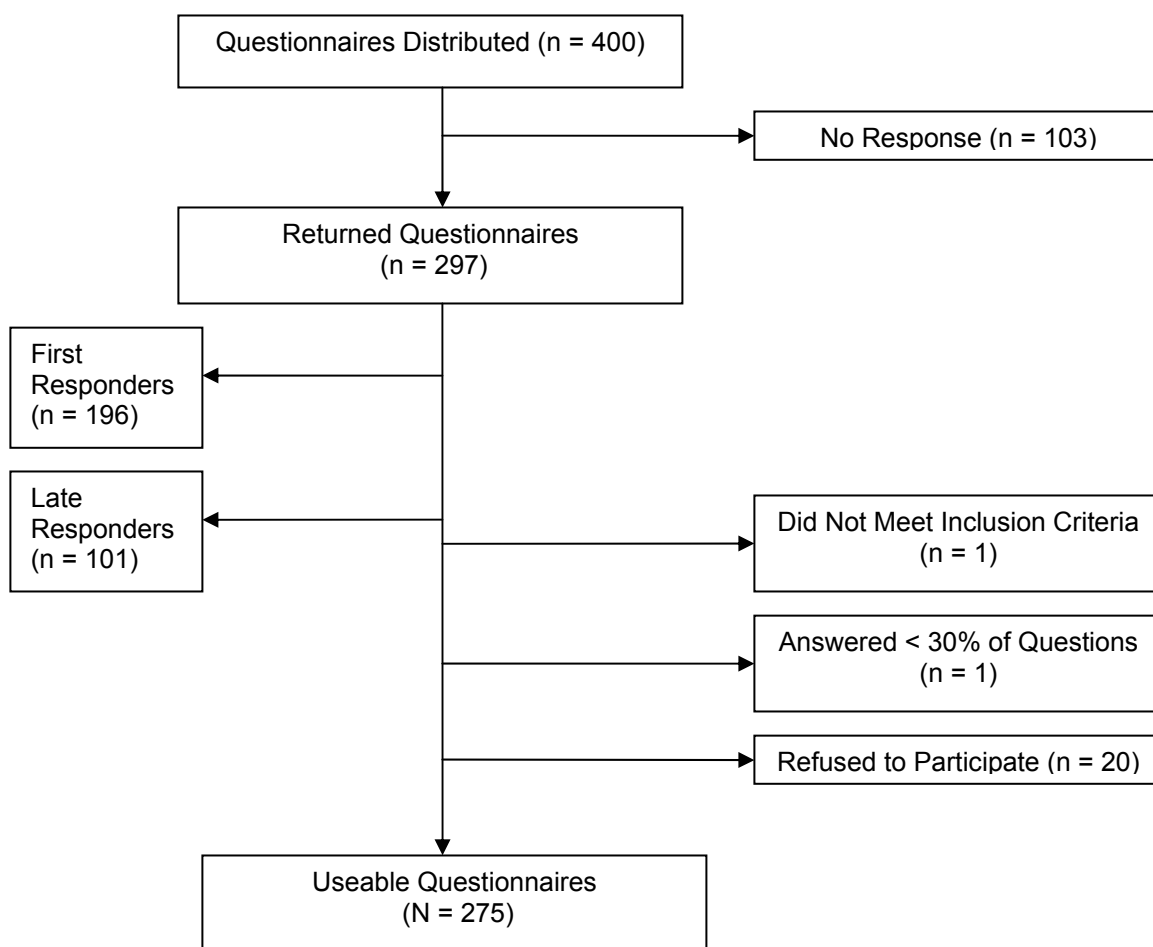
Sample Characteristics

Nurse participant characteristics are presented in Table 4. The majority of nurse participants were female (85%), middle aged (mean age 43 years), and a New Zealander or New Zealand European (76%). Approximately half (52%) worked full time. Inspection of the DHB profile showed minor dissimilarities in the nurse sample profile in nurses who were male, 20-30 years of age, Maori, or of other ethnicity. However nurse participants in this study were generally representative.

The majority of nurse participants worked as a Registered Nurse in one of five specialities: surgical (12%), medical (9%), mental health (9%), child health (8%), or emergency and trauma (8%). Participants had been nurses for 19 years on average, and had worked in their current position for an average of 6 years.

Most nurses were living with their spouse/partner (72%), had 1-3 children (46%), a mortgage (55%), and would not be looking after any dependents other than their children (87%). Participants who considered leaving the job to move to another organisation reported that the decision would be either entirely or somewhat dependent on their family (74%).

Nurse participants registered for the first time in New Zealand at a mean age of 23. Few nurses (16%) reported involvement with academic postgraduate study, but many had gained Level 3 on the DHB Career Pathway (41%). A majority of nurse participants (58%) obtained their first nursing qualification through hospital based education programmes.

Item Non-response

Significant item non-response was found in one study instrument, job satisfaction. Inspection of frequency counts demonstrated 6 items with a non-response rate > 5% and a single item (child care facilities), from the family/work subscale, demonstrated a non-response rate $\geq$10% (Table 3).

Table 3. Item Non-Response > 5%

Job Satisfaction Subscale	Item	NA or Missing N = 275	NA or Missing Total %
Family & Work Balance	Child care facilities	91	33.0
Scheduling	Flexibility in rostering your weekends off	21	7.6
Scheduling	Opportunity to work day shifts	21	7.6
Scheduling	Opportunity for part time work	21	7.6
Scheduling	Weekends off per month	15	5.5
Scheduling	Flexibility in rostering	14	5.0

Table 4. Nurse Participant Demographics

Participants		Sample N = 275		DHB N = 2196	
		Number	%	Number	%
Demographics					
Gender	Female	232	85	2019	92
	Male	30	11	177	8
	Missing	13	4		
Age	20-30	27	9	291	12
	31-40	73	27	650	28
	41-50	106	37	761	35
	51-60+	65	27	494	24
	Missing	4	1		
Ethnicity	NZ European	210	76	1396.6	64
	NZ Maori	16	6	145.0	7
	Other	49	18	654.4	30
Work Characteristics					
Hours of Work	1 to 8	6	2	98	5
	9 to 16	17	6	159	9
	17 to 24	28	10	418	13
	25 to 32	65	24	496	19
	33 to 40	124	45	1090	50
	40+	20	7		
	Agency/Casual	15	6	109	5
Work Type	Midwifery	18	7		
	Emergency & Trauma	22	8		
	Child Health	23	8		
	Medical	25	9		
	Mental Health	25	9		
	Surgical	32	12		
Length of Service (Range, Mean)	As a nurse	0 - 47	19		
	In the DHB	0 - 40	11		
	In the current job	0 - 32	6		
Personal Demographics					
Living Arrangements	Spouse/Partner	106	39		
	Spouse/Partner & Children	92	34		
	Others	76	28		
Mortgage	Has mortgage	152	55		
Number of Children	0	30	11		
	3 or less	127	46		
	4 or more	8	3		
	Missing	110	40		
Other Dependents	Care of other Dependents	35	13		
Decision Dependency on Another Person regarding Moving to Another Organisation	Entirely Dependent	110	40		
	Somewhat Dependent	92	34		
	Not Dependent	63	23		
	Missing	10	4		
Qualifications					
First Nursing Qualification	New Zealand	227	83		
	Overseas	48	18		
	(Mean Age on registration 23.3)				
Clinical Career Pathway (CCP)Level	Registered Nurse Level 2 <	44	16		
	Registered Nurse Level 3	113	41		
	Registered Nurse Level 4 >	37	13		
	Enrolled Nurse Level 2 & 3	2	1		
	Others	3	1		
	Missing	61	22		
Postgraduate Education	Postgraduate Study	48	18		
First Nursing Qualification	Hospital Based RN	107	39		
	Hospital Based EN	52	19		
	Comprehensive RN	75	27		
	Diploma/Degree Midwifery	3	1		
	Missing	48	14		

Question 1: What are the levels of job satisfaction, job stress, and burnout

in a sample of New Zealand nurses?

Details of item results for each measurement scale can be found in

Appendix G. Job satisfaction, personal accomplishment, and intent to leave, were

slightly negatively skewed, while job stress and emotional exhaustion were slightly

positively skewed. Depersonalisation was moderately skewed at 1.105.

Transformations were not conducted. Reasonably normal histograms, Q-Q, and

Detrended Normal Q-Q Plots were demonstrated for job satisfaction, emotional

exhaustion, and intent to leave, whereas plots for job stress, depersonalisation,

and personal accomplishment indicated abnormal distributions.

Job Satisfaction

Most item (84%) and subscale means (M) in the job satisfaction scale were

> 2.5 (Possible Range 1-4) suggesting that nurse participants were satisfied with

these aspects of their job (see Figure 6).

Nurses were most satisfied with their nursing peers (M = 3.4), the

opportunity to work part time (M = 3.3), the hours that they worked (M = 3.3), the

opportunity to work day shifts (M = 3.2), and the weekends they had off each

month (M = 3.2).

Nurses were most dissatisfied with their level of participation in

organisational decision making (M = 2.2), pay (M = 2.3), control over work

conditions (M = 2.3), control over what goes on in their work setting (M = 2.3), and

child care facilities (M = 2.5).

Figure 6. McCloskey/Mueller Satisfaction Scale Item Mean Scores

Item	Mean
Your nursing peers	3.4
Opportunity for part-time work	3.3
Hours that you work	3.3
Opportunity to work day shifts	3.2
Weekends off per month	3.2
Your amount of responsibility	3.1
The delivery of care method used in your unit	3.1
Recognition from your peers	3.1
Your immediate supervisor	3.1
The doctors you work with	3.0
Flexibility in rostering your weekends off	3.0
Maternity leave	3.0
Opportunities for social contact after work	3.0
Flexibility in rostering	2.9
Opportunities for social contact at work	2.9
Active in department & organisational committees	2.9
Annual leave	2.9
Opportunities to interact professionally	2.8
Sick leave	2.6
Opportunities to write and publish	2.6
Compensation for working weekends	2.6
Amount of encouragement and positive feedback	2.6
Opportunities to participate in nursing research	2.6
Opportunities for post graduate study	2.6
Opportunities for career advancement	2.5
Recognition from your supervisors	2.5
Child care facilities	2.5
Control over what goes on in your work setting	2.4
Your control over conditions	2.3
Pay	2.3
Participation in organizational decision making	2.2

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Job satisfaction subscale means (Range 1-4), as seen in Figure 7, indicate that nurse participants were most satisfied with their co-workers (M = 3.2) but were most dissatisfied with the level of control and responsibility they had in the workplace (M = 2.4). With the exception of pay, items most likely to be reported by nurse participants as sources of dissatisfaction were also found within the control and responsibility subscale (participation in organisational decision making; control over work conditions; control over what goes on in your work setting). However, a Total MMSS mean of 2.7 suggested that most nurse participants (75%) were satisfied with the job.

Figure 7. McCloskey/Mueller Satisfaction Subscale and Total Mean Scores
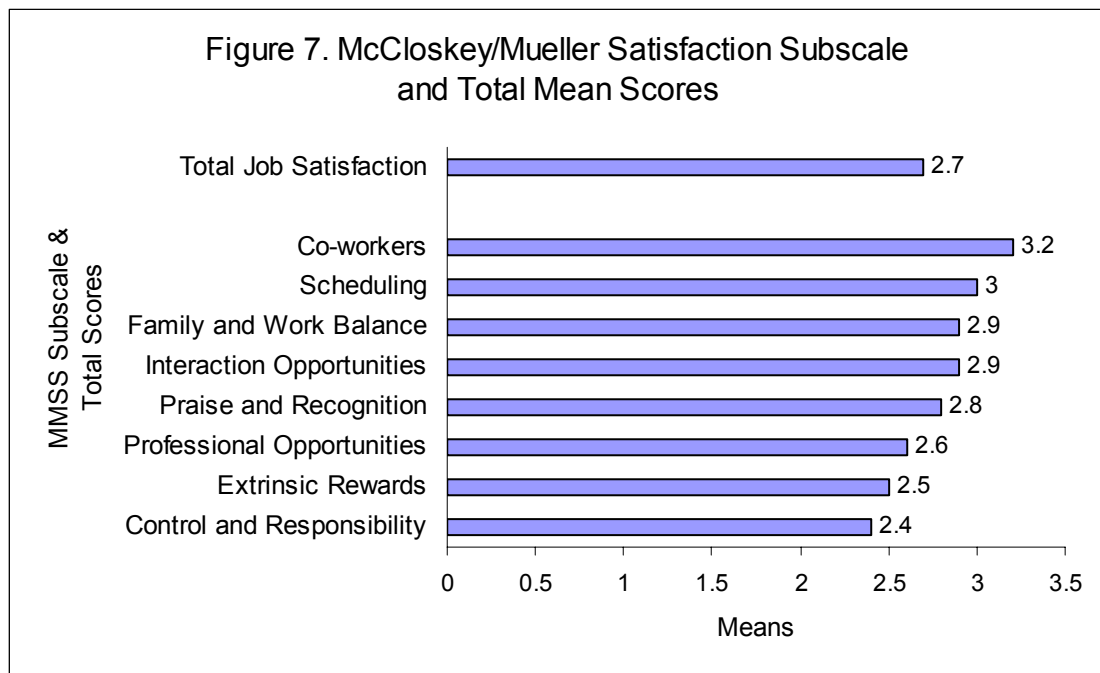
Job Stress

Nurse participants reported experiencing stress often or very often (M >2.5, Possible Range 1-4) in only four situations in the workplace (see Figure 8): not enough staff to adequately cover the unit (M = 2.7), unpredictable staffing or rostering (M = 2.6), too many non nursing tasks required to be done (M = 2.6), and not enough time to provide emotional support to a patient (M = 2.6).

Figure 8. Nursing Situations Questionnaire Item Mean Scores

Items	Means
Criticism by the clinical nurse leader	1.6
Criticism by a doctor	1.6
Doctor not being present when a patient dies	1.6
Conflict with the clinical nurse leader	1.6
No opportunity to express negative feelings	1.6
Difficulty working with (a) particular nurse(s) outside the unit	1.6
Feeling badly prepared to help emotional needs of a patient	1.7
Doctor not present in a emergency	1.7
Conflict with a doctor	1.7
Listening to a patient about dying	1.8
The death of a patient you cared for	1.8
Difficulty with (a) particular nurse(s) on the unit	1.8
Supervising agency staff	1.8
Feeling badly prepared to help a patient's family	1.9
Uncertainty regarding specialised equipment	1.9
Not having a satisfactory answer to a patient's ?	1.9
Shifting to other units that are short staffed	1.9
Supervising casual staff	1.9
Inadequate information from a doctor re:patient	1.9
A doctor ordering ? inappropriate treatment for a patient	1.9
The death of a patient	2.0
Disagreement re:treatment of a patient	2.0
Knowing what a patient or patient/family ought to be told	2.0
Decision making re: patient when doctor unavailable	2.0
Opportunity to share experiences with colleagues	2.1
Feeling helpless when a patient who fails to improve	2.1
Fear of making a mistake in patient treatment	2.1
Opportunity to share problems with colleagues	2.2
Support staff not being available	2.2
Performing painful procedures	2.2
Watching a patient suffer	2.2
Essential equipment/supplies not available	2.5
Not enough time to complete nursing care	2.5
Not enough time to give patients emotional support	2.6
Too many non nursing tasks required	2.6
Unpredictable staffing or rostering	2.6
Not enough staff to adequately cover the unit	2.7

Means

Situations that were considered stressful often or very often by one out of every two nurse participants were all found within the workload subscale (M = 2.4). The Total NSQ scale mean (M = 2.0), indicated that nurse participants experienced stress occasionally in most work situations found within the scale (see Figure 9).

Figure 9. Nursing Situations Questionnaire Subscale and Total Mean Scores

Subscale	Mean
Total Nurse Situations Questionnaire	2
Inadequate preparation	1.7
Conflict with other nurses	1.7
Conflict with physicians	1.8
Death and dying	1.9
Lack of support	1.9
Uncertainty concerning treatment	2.3
Workload	2.4

Y-axis: Subscale and Total Mean Scores
X-axis: Means (0, 0.5, 1, 1.5, 2, 2.5, 3)
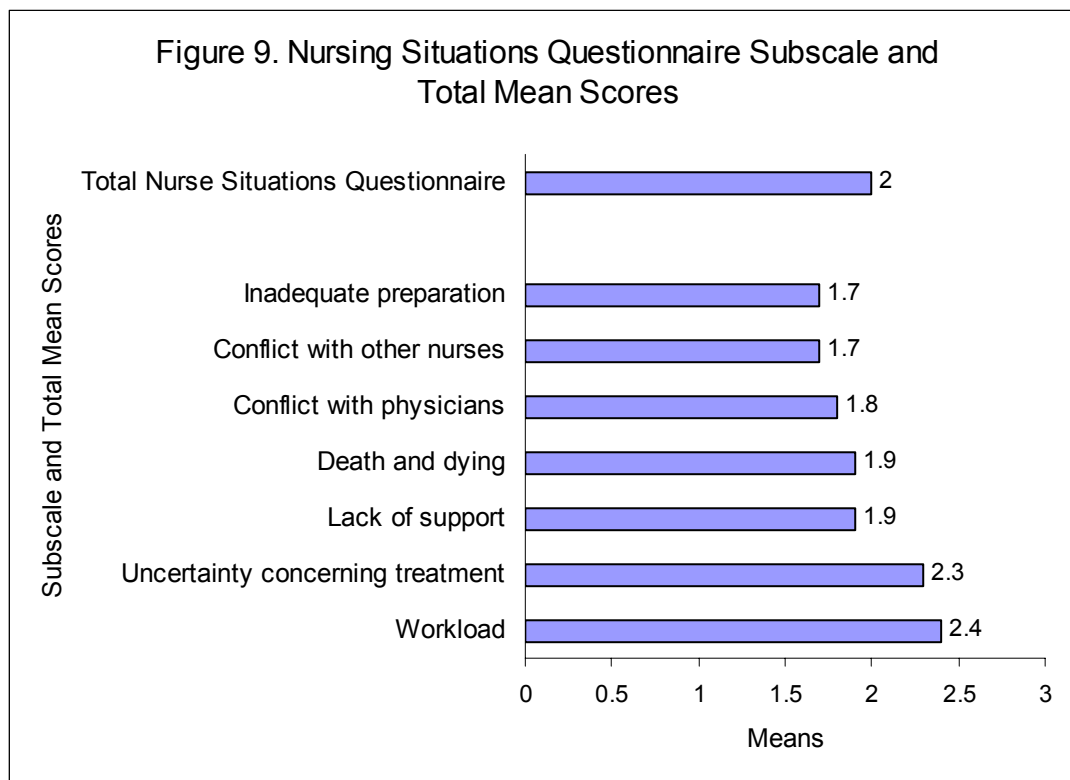
Burnout

Emotional exhaustion subscale item results indicated that one out of every two nurses (50%) felt used up at the end of the work day (M = 3.5, Possible Range 0-6. see Figure 10). A large percentage of nurse participants (41%) also felt fatigued in the morning when facing another day at work (M = 3.0), and 39% reported feeling that they were working too hard on the job (M = 3.0).

Figure 10. Emotional Exhaustion Item Mean Scores
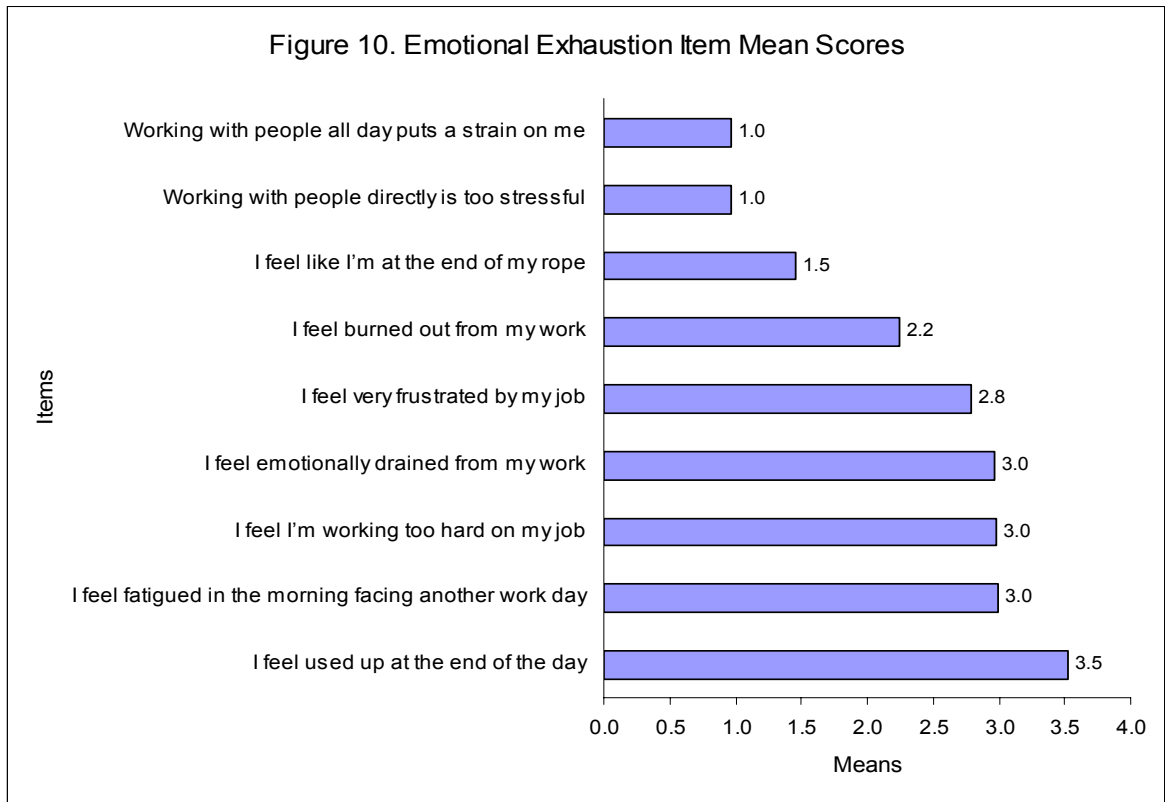
Depersonalisation subscale item means were all < 2.0 (Possible Range 0-6. see Figure 10a). While only 3.2% of nurse participants indicated that they felt like they didn't care about what happened with some patients more often than once a week (M = 0.6), 13.6% of nurse participants were worried that the job was hardening them emotionally (M = 1.4).

Figure 10a. Depersonalisation Item Mean Scores
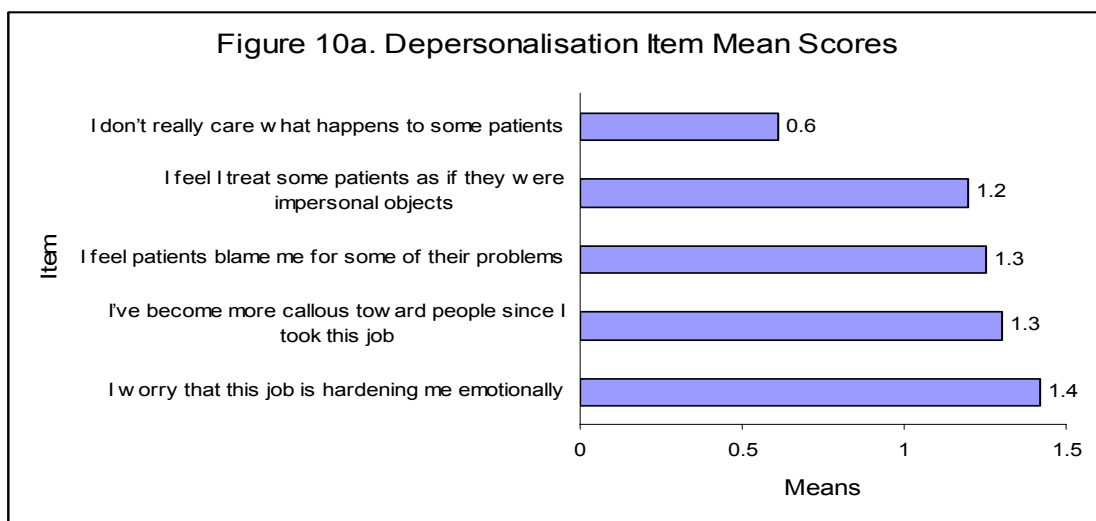
Personal accomplishment subscale item means were all > 3 (Possible

Range 0-6. see Figure 10b). Most nurse participants (58.1%) felt that they were

able to deal very effectively with their patients problems every day (M = 5.3).

However, only 11.4% of nurse participants felt energetic every day (M = 3.8).

Figure 10b. Personal Accomplishment Item Mean Scores
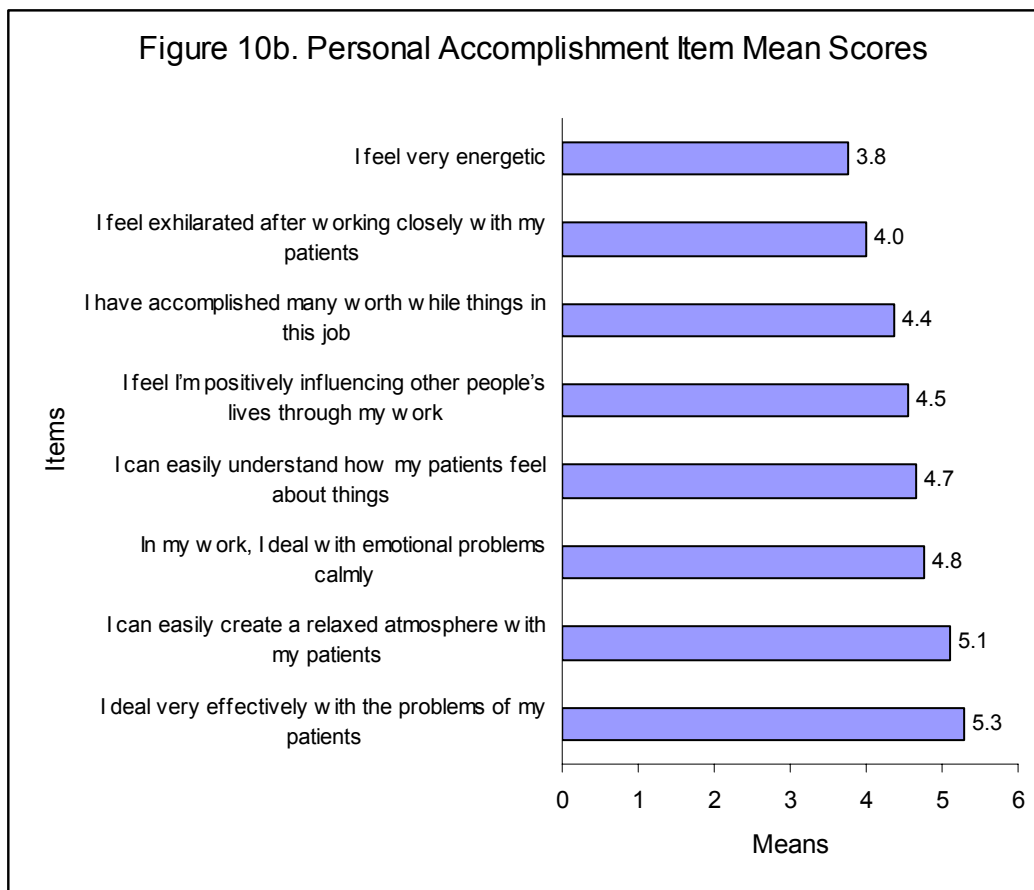
Less than half the nurse participants (41%) reported low emotional

exhaustion subscale scores, while nearly one third reported average (32%) or high

(27%) levels of emotional exhaustion (Appendix G). Overall nurse participants

indicated that they were experiencing an average amount of emotional exhaustion

(M = 19.9), as presented in Table 5. Most nurses (66%) scored low in the

depersonalisation subscale (M = 5.8). The majority of nurse participants reported

an average mean score in personal accomplishment subscale (M = 36.4).

Table 5

Maslach Burnout Inventory Subscale Mean Scores

	N	Possible Range		Mean	Std. Deviation
Emotional Exhaustion	272	Low	≤ 16	19.9	10.0
		Average	17-26		
		High	≥ 27		
Depersonalisation	273	Low	≤ 6	5.8	5.2
		Average	7-12		
		High	≥ 13		
Personal Accomplishment	264	Low	≥ 39	36.4	7.0
		Average	38-32		
		High	≤ 31		

Question 2: What are the relationships between nurse job satisfaction,

job stress, and burnout in New Zealand?

Two separate sets of correlations were performed to explore the relationships

the variables. Preliminary analyses found no violations of the assumptions of

normality, linearity, homoscedasticity, or multicollinearity.

The first set of correlations involved the total scale scores for job satisfaction

and job stress, and the three subscales that make up the burnout scale (Table 6).

Correlations (Spearman's Rho= r_s) are stated in brackets in this section. Job

satisfaction was negatively correlated with job stress, emotional exhaustion and

positively correlated with depersonalisation.

The strongest relationship between these variables was demonstrated between

job satisfaction and emotional exhaustion ($r_s = -.462$, $p < .0001$). Job stress,

emotional exhaustion and depersonalisation were positively correlated. Emotional

exhaustion demonstrated a strong positive correlation with depersonalisation ($r_s =$

.546, $p < .0001$) and a negative correlation with personal accomplishment.

Table 6

Estimated Spearman's Rho between Nurse Job Satisfaction and Job Stress Total Scales, and Maslach Burnout Inventory Subscales

Variable	Job Satisfaction	Job Stress	Emotional Exhaustion	Depersonalisation
Job Stress	-.351***			
Emotional exhaustion	-.462***	.433***		
Depersonalisation	-.290***	.364***	.546***	
Personal accomplishment	.192*	-.145*	-.218***	-.265***

   *   .05 level (2 tailed) **   .01 level (2 tailed) ***   .0001 level (2 tailed)

The second set of correlations explored the relationships between job satisfaction, job stress, and burnout subscales (Table 7). Eighteen subscales of the instruments measuring these variables were entered into a correlation matrix and 59 of a possible 172 combinations of the subscales were significant at p > .05. Sixteen correlations demonstrating a magnitude of > .3 are reported.

Among the eight job satisfaction subscales, five were negatively correlated with four job stress subscales. Nurse participant satisfaction with praise and recognition demonstrated the strongest negative correlation to conflict with other nurses (r_s = -.464, p < .01). In addition, satisfaction with scheduling, interaction opportunities, professional opportunities, and nurse control and responsibility in the work place, correlated negatively with conflict with physicians, or other nurses, and workload job stress subscales.

Emotional exhaustion was the only burnout subscale that demonstrated significant and consistently negative correlations with job satisfaction subscales. The relationship of greatest magnitude was demonstrated between emotional exhaustion and satisfaction with nurse control and responsibility in the workplace (r_s = -.416, p < .01).

Table 7
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Estimated Spearman's Rho between Nurse Job Satisfaction, Job Stress, and Burnout Subscales

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	1																
2	.437**	1															
3	.236**	.422**	1														
4	.136*	.186**	.099	1													
5	.270**	.377**	.133	.389**	1												
6	.281**	.333**	.251**	.314**	.484**	1											
7	.256**	.399**	.199**	.387**	.495**	.548**	1										
8	.376**	.500**	.223**	.253**	.478**	.670**	.601**	1									
9	-.092	-.178**	-.069	-.016	-.077	.000	-.120	-.005	1								
10	-.213**	-.335**	-.126	-.284**	-.318**	-.204**	-.278**	-.309**	.368**	1							
11	-.070	-.092	.092	-.048	-.217**	-.088	-.137*	-.111	.345**	.399**	1						
12	-.126*	-.130*	-.012	-.064	-.180**	-.067	-.097	-.126*	.281**	.154*	.199**	1					
13	-.123	-.270**	-.023	-.224**	-.304**	-.314**	-.464**	-.313**	.276**	.404**	.289**	.177**	1				
14	-.181**	-.341**	-.063	-.077	-.296**	-.177**	-.271**	-.300**	.345**	.364**	.339**	.144*	.286**	1			
15	-.105	-.203**	-.212**	-.288**	-.263**	-.236**	-.308**	-.247**	.348**	.510**	.397**	.153*	.419**	.487**	1		
16	-.360**	-.374**	-.099	-.166**	-.298**	-.316**	-.371**	-.416**	.215**	.408**	.264**	.120	.253**	.422**	.261**	1	
17	-.152*	-.273**	-.109	-.107**	-.243**	-.152*	-.257**	-.223**	.084	.351**	.196**	.160**	.224**	.327**	.235**	.546**	1
18	.081	.184**	.054	.054	.213**	.074	.213**	.193**	-.039	-.186**	-.179**	-.060	-.159*	-.076	-.050	-.218**	-.265**

* Correlation at the .05 level (2 tailed).   ** Correlation at the .01 level (2 tailed).

Key

Job Satisfaction subscales. 1. Extrinsic Rewards 2. Scheduling 3. Family and Work Balance 4. Co-workers 5. Interaction Opportunities 6. Professional Opportunities 7. Praise and Recognition 8. Control and Responsibility

Job Stress subscales. 9. Death and Dying 10. Conflict with Physicians 11.Inadequate Preparation 12. Lack of Support 13. Conflict with Other Nurses 14. Workload 15. Uncertainty Concerning Treatment

Burnout Subscales. 16. Emotional Exhaustion 17. Depersonalisation 18. Personal Accomplishment

Emotional exhaustion was also negatively associated with dissatisfaction with extrinsic rewards, scheduling, professional opportunities, and praise and recognition. Conversely, positive relationships were found between the burnout subscales of emotional exhaustion and depersonalisation, and the job stress subscales of workload, and conflict nurses experienced with physicians. Strong correlations (> .3) were not found between personal accomplishment (the third burnout subscale) and job satisfaction or job stress subscales.

Question 3: Do the variables of job satisfaction, job stress, and burnout contribute to nurses' intent to leave in New Zealand?

Evaluation of assumptions that underlie regression analyses conducted prior to regressing job satisfaction, job stress and burnout on intent to leave were largely met (Tabachnick & Fidell, 2001). One outlier was found in the residual scatter plot but was not deleted as it was considered that the influence of the outlier was minimal. Tests conducted to assess multicollinerity between the variables did not demonstrate correlations higher than .50. Although the highest condition index for this study was 64.216, no variance proportion was greater than >.50 for each variable reducing the likelihood of multicollinearity (Tabachnick & Fidell, 2001).

Description of job satisfaction, job stress, and burnout was presented earlier (pp. 77-82). The distribution of intent to leave, the dependent variable, is presented here (see Figure 11). A mean > 4.5 (Possible Range 1-8) suggests intent to leave however nurse participants reported intent to stay in their jobs for the next six months (M = 3.0), remain working for the organisation (M = 3.4), stay in their

nursing career as long as they were able to (M = 3.1), and stay in nursing rather than find other employment by leaving nursing (M = 3.3).

Figure 11. Intent to Leave Item and Total Mean Scores
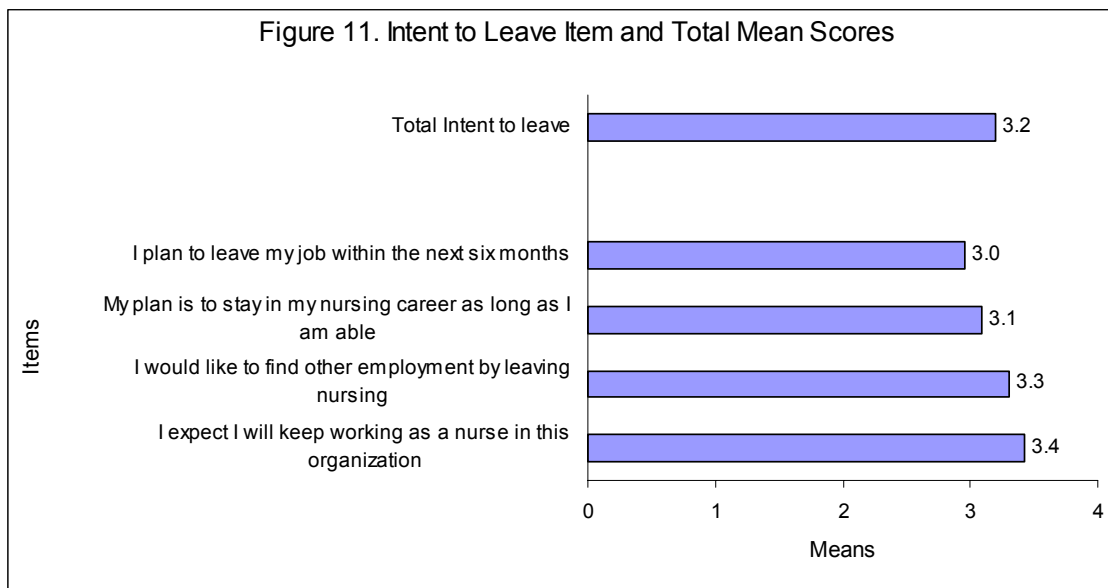
While the results suggest that the level of intent to leave the job in nurse participants is low (M = 3.2, see Figure 11), a significant percentage of nurse participants indicated that they were thinking of leaving their jobs within 6 months (25.0%), leaving the organisation (29%), or leaving nursing to find other employment (29%), and finally, 20% of nurse participants indicated that they did not want to stay nursing long term (Appendix G).

Two sets of regression analyses were conducted. First, total job satisfaction and job stress, and burnout subscale means were regressed on intent to leave. The five predictor variables were entered into the regression analyses as an unordered set on intent to leave (Green et al, 2000). The independent predictor model performed poorly (R^2 = .052) and little variance in intent to leave was explained.

The second analysis regressed (number of subscales in brackets) job satisfaction (8), job stress (7), and burnout (3) subscales on intent to leave and

were entered into the regression analyses as an unordered set on intent to leave.

Eight of the 18 subscales were significantly correlated with intent to leave (Table

8).

Table 8

Significant Subscale Correlations with Nurse Intent to Leave

Scales	Predictor variables	Intent to Leave Correlations	Significance
Job Satisfaction	Extrinsic Rewards	-.222	.005
	Family and Work Balance	-.144	.048
	Professional Opportunities	-.215	.006
	Praise and Recognition	-.213	.007
Job Stress	Conflict with Physicians	.189	.014
	Lack of Support	.219	.005
Burnout	Emotional Exhaustion	.163	.030
	Depersonalisation	.175	.022

Five of the 18 subscales (extrinsic rewards; interaction opportunities;

professional opportunities; praise and recognition; lack of support) provided

explanatory variance of intent to leave in the regression analyses ($R = .512$,

$R^2 = .262$, adjusted R^2 .147 ($F18,115$) = 2.27, $\underline{p} = .005$) and are displayed in Table

9. The multiple correlation coefficient (R^2) was .262 indicating that approximately

26.2% of the variance of intent to leave can be accounted for by the linear

combination of these variables.

According to the β weights, the regression equation was as follows:

Intent to Leave = -.789 (Extrinsic Rewards) + .753 (Interaction Opportunities) -.949

(Professional Opportunities) -.743 (Praise and Recognition) + .791 (Lack of Support).

The regression equation using standardised variables in order of magnitude was: Z

(Intent to Leave) = - 374Z (Professional Opportunities) -.286Z (Praise and Recognition) +

.253Z (Interaction Opportunities) -.214Z (Extrinsic Rewards) +.198Z (Lack of Support).

Table 9

Significant coefficients between Nurse Intent to Leave, and Job Satisfaction, Job Stress, Burnout

Predictor variables N = 135	B (Unstandardised Coefficients)	Std Error	B (Standardised Coefficients)	Significance
Extrinsic Rewards	-.789	.363	-.214	.034
Interaction Opportunities	.753	.357	.253	.037
Professional Opportunities	-.949	.326	-.374	.004
Praise and Recognition	-.743	.315	-.286	.020
Lack of Support	.791	.367	.198	.033

Conclusion

A précis of this study's results were presented in this chapter. Nurse participants reported high levels of job satisfaction, low job stress, and average burnout. Multiple correlations between the total scales and subscales of job satisfaction, job stress, and burnout were significant. Five subscales, identified through regression analyses, predicted intent to leave. These results are discussed within the context of the conceptual framework in terms of previous research next in Chapter 5.

Chapter Five – Discussion

Introduction

The purpose of this study was to explore the relationship between the work related variables of job satisfaction, job stress, and burnout, as predictors of nurses' intent to leave the job in New Zealand. One in four nurse participants reported intent to leave the job which was predicted by four job satisfaction subscales (professional opportunities, praise and recognition, extrinsic rewards, interaction opportunities) and one job stress subscale (lack of support). This chapter will discuss the main findings using the three research questions as headings. It will review the relevance of the conceptual framework and make recommendations for further development of the same. Nursing management, research, education and practice will frame potential strategies that could be used by nurse employers to improve recruitment and retention of New Zealand nurses. Study limitations and recommendations for future research will conclude this final chapter.

Question 1 - What are the levels of job satisfaction, job stress and burnout in a sample of New Zealand nurses?

In this study the level of job satisfaction among nurse participants was high, job stress was low, and burnout was average. A number of items made significant contributions to levels of job (dis)satisfaction, job stress, and burnout. Issues arising from these results are outlined and possible explanations of the findings are discussed next.

Job Satisfaction

Seventy five per cent of nurse participants in this study reported satisfaction with the job. In addition to items found in the scheduling subscale (opportunity to work part time, hours worked, opportunity to work day shifts, weekends off each month) and the amount of responsibility nurses held, nurse participant's relationships with their nursing peers and doctors provided the most satisfaction in the job in this study.

The level of job satisfaction compares well with a recent New Zealand study of 4882 nurses working in 24 of the 30 public hospitals throughout New Zealand, where an average of 69% of nurses reported overall job satisfaction (Gower & Finlayson, 2002). It also appears that New Zealand nurses are generally more satisfied with their jobs than their international counterparts. Only 50-60% of nurses surveyed in the US, Canada, England, Scotland, Germany, and Palestine expressed job satisfaction in studies conducted in the late 1990s (Aiken et al, 2001; Ajamieh et al, 1996; Shields & Ward, 2001).

Sources of satisfaction reported by nurse participants were broadly similar to other studies in different countries using the same measurement tool (MMSS). Price (2002) found that English nurses were most satisfied with their annual leave, the hours they worked, and their nursing peers. Ajamieh et al (1996) reported that the amount of responsibility was the highest ranked source of satisfaction for nurses working in Palestinian hospitals on the West Bank, followed by relationships with doctors, their nursing peers, control over working conditions, and scheduling weekends off.

Satisfaction with scheduling suggests that nurse participants in this study were able to organise their work hours to suit their personal lives. Once nurses have gained a balance between family or social commitments and work they

are more likely to report job satisfaction (McNeese-Smith, 1999). Nurse participants in this study and others (Ajamieh et al, 1996; Misner & Cox, 2001) were satisfied with the high level of responsibility they carried. Satisfaction with the level of responsibility held by nurses in the job has been associated with the challenge of providing good quality patient care (Buchan, Ball & Rafferty, 2003; Cobden-Grainge & Walker, 2002; McNeese-Smith, 1999; Vahey et al, 2002). The high level of satisfaction reported by nurse participants with their nursing peers and doctors in this study also suggests that nurses place great importance on interpersonal relationships as nurses look to their colleagues for support when negative situations arise at work (Leppa, 1996).

Job Dissatisfaction

The majority of nurse participants in this study were dissatisfied with their low levels of participation in organisational decision making (63%), control over work conditions (59%), pay (54%), and control over what goes on in the work setting (52%). With the exception of pay, these items were all found in one job satisfaction subscale, control and responsibility. Control over professional practice combined with the social and legal freedom of self-governance has been defined as autonomy (Wade, 1999). Self-governance is seen as a nursing management strategy to legitimize nurse decision making and control over professional practice through the active influence of administrators and managers (McClure & Hinshaw, 2002).

In this study, nurse participant reports suggest that self-governance was not legitimized in their work environment and furthermore that the 'voice' of nurses was not being heard in organisational decision making. Gower and Finlayson (2002) support this suggestion. Only 37% of the 4603 New Zealand

nurses working in 24 New Zealand hospitals thought that managers listened and responded to employee concerns (Gower & Finlayson, 2002). Most international studies report nurse dissatisfaction with levels of autonomy held in the workplace (Larrabee et al, 2003) particularly when dissatisfaction is associated with a decrease in the quality of care provided to patients (Gower & Finlayson, 2002).

Hospitals that can recruit and retain nurses during nurse shortages have identified nurse participation in organisational decision making, autonomy and nurse-doctor relationships as some of the most important reasons nurses choose to work and stay in the job, and have also been associated with positive patient outcomes (Aiken et al, 2002; McClure & Hinshaw, 2002). These hospitals have been termed "magnets". Results in this study and another New Zealand study (Budge, Carryer, & Wood, 2003) suggest that Magnet Hospital characteristics may not be evident in New Zealand hospitals. Budge et al (2003) found good nurse-doctor relationships in a survey of 225 nurses working in a New Zealand tertiary hospital however satisfaction with nurse participation in decision making and nurse autonomy was low.

Previous studies argue that low participation in organisational decision making and control over practice are features of the marginalization of the nursing profession within the health care environment and reflect gender issues of power and control over practice (Antrobus, 1997; Benner & Wrubel, 1988; Street, 1991). Power is often described in terms of "power over", however for nursing, power is considered to be the "ability to do and having access to whatever is needed for the doing" (Haugh & Laschinger, 1996, p.3). Many research studies associate nurse dissatisfaction with lack of control over practice with a lack of power held by nurses in the health care environment

generally. However, a study of Palestinian nurses working in the West Bank conducted by Ajamieh et al (1996) reported nurse satisfaction with control over practice where 36% of nurses in the study were male (Ajamieh et al, 1996). Women predominate (92%) in the New Zealand nursing profession (New Zealand Health Information Service, 2004) and in this study only 11% of the nurse participants were male. Research results suggest that gendered inequities in terms of power and control continue to influence the New Zealand nursing profession where females are still seen to be 'less than males' (Gough, Maslin-Prothero, & Masterson, 1994).

Job Stress

While the stress experienced by nurse participants was generally low, high levels of stress were associated with workload by one in every two nurse participants. The workload subscale included items measuring how often nurses experienced stress when there was a lack of staff, not enough time to provide emotional support to patients, and too many non-nursing tasks. Research reports suggest that nurses have employed various decision making strategies that prioritise tasks and patient care to cope with high workloads (Hall, 2004; Williams, 1998). Williams (1998) found that nurses who provided selected patients with quality care while other patients missed out in order to cope with high workloads, lack of staff, and lack of time reported feelings of frustration and guilt when unable to deliver quality nursing care to all their patients (Williams, 1998).

Where work is conducted at a high pace in a context of low control over work conditions and low levels of participation in decision making as it was in this study, rising numbers of mistakes have been found (Meijman & Mulder,

1998). The relationship between high workloads, nurse/patient ratios and adverse events such as medication errors, patient falls, pneumonia, pressure ulcers, and prolonged length of stay has been well established internationally (Aiken et al, 2002; Blegen et al, 1998; Cho, Ketefian, Barkauskas, & Smith, 2003; Fridkin et al, 1996; Needleman et al, 2002). Therefore it is possible that the high workloads and lack of staff reported by nurse participants in this study may be linked to adverse patient events such as medication errors.

The relationship between job stress and workload in this study is supported by other New Zealand and international research. Watson and Feld (1996) found that nurses commonly cited workload and staffing as the greatest source of stress in a sample of 14 nurses working in a paediatric ward in a New Zealand general hospital. Rising workloads due to increases in patient throughput and extended roles in a context of budget cuts and low autonomy are cited as the most prevalent source of nurse stress in most international studies (Chan & Morrison, 2000; Dolan et al, 1992; Edwards & Burnard, 2003; Greenglass & Burke, 2001; Healy & McKay, 1999; Janssen et al, 1999; Shields & Ward, 2001; Tovey & Adams, 1999). In contrast one study (Gurney et al, 1997) found that heavy workloads for nurses with doctoral degrees was a source of satisfaction and was associated with professional values of autonomy, suggesting that where nurses have control over practice high workloads are not only manageable but seen as a positive challenge.

Burnout

As the majority of nurse participants reported experiencing stress often due to high workloads it was unsurprising to find that one in every two nurse participants reported feeling tired in this study, however this state of exhaustion

did not appear to influence their approach to patient care. Low levels of depersonalisation were reported by nurse participants indicating that nurses had not withdrawn from nurse-patient interactions in order to reduce their exhaustion. In addition, nurse participants' sense of personal accomplishment on the job in this study did not appear to be affected by feelings of exhaustion to any great extent. However, the moderate to high levels of emotional exhaustion experienced by nurse participants in this study may be impacting on their health status.

Gower and Finlayson (2002) suggested that New Zealand nurses "may be paying a price in terms of their health and wellbeing" to ensure that patients received quality care (p.10). A study by Budge et al (2003) supports this suggestion. Budge et al (2003) compared selected health measures in a sample of New Zealand nurses to the general New Zealand population and found that nurses reported significantly lower than average levels of health in all health domains except physical functioning. A growing recognition of ill health attributable to stressful working conditions where there are high demands and low control over work has been associated with increased risk of heart disease, musculoskeletal disorders, mental illness and sick leave (Miers, 2002).

High levels of emotional exhaustion were reported by one in four nurse participants in this study compared to one in five New Zealand nurses in a study conducted by Gower and Finlayson (2002). These rates of emotional exhaustion were a great deal lower when compared to nurses working in the United States where nearly one in every two nurses surveyed reported high levels of emotional exhaustion. In addition, one in every two nurse participants in this study reported feeling tired or used up at the end of the day. Levels of fatigue reported by nurse participants were associated with high workloads in

this study. This finding is supported by Duquette et al (1994) who reported in a review of 36 research articles that emotional exhaustion was unrelated to nurse-patient interactions but was related to workload and personal factors.

One nurse participant in this study wrote that "stress is a factor as is being short staffed but we work as a team." As levels of emotional exhaustion reported by nurse participants in this study were lower than those reported by nurses working in the USA, this finding may be explained by the support nurses gain when working in a team environment. Batcheller, Burkman, Armstrong, Chappell, & Carelock (2004) explored the effects of implementing a nursing practice model that incorporated teamwork and shared investment in patient outcomes and found significant improvements in nurse job satisfaction, and reductions in nurse turnover and medication errors. Therefore, gaining support from their nursing colleagues may have moderated nurse participants' levels of exhaustion and added to a sense of accomplishment of being able to provide good patient care in a context of high workloads and demands on time.

Question 2: What are the relationships between nurse job satisfaction, job stress and burnout in New Zealand?

Correlations between the variables job satisfaction, job stress, and burnout supported the theoretical relationships suggested by the literature and displayed in the conceptual framework developed to guide the study (pp. 47). Relationships between nurse job satisfaction, job stress, and emotional exhaustion were moderately strong and negative indicating that decreases in job satisfaction influenced increases in job stress and emotional exhaustion. Conversely, increases in job satisfaction were associated with decreases in job stress and burnout. The relationship between nurse job stress and emotional

exhaustion was moderately strong and positive suggesting that as job stress

rose for nurse participants, emotional exhaustion also climbed. A number of

patterns were identified from correlations demonstrating a magnitude of greater

than .3 in this study. Issues arising from these results are outlined and possible

explanations of the findings are discussed next.

Job Satisfaction and Job Stress

Seven of the ten correlations between job satisfaction and job stress

subscales demonstrating a magnitude greater than .3 involved conflict with

other nurses or doctors. This finding was unexpected as relationships between

nurse participants, their nursing colleagues, and doctors were some of the main

sources of job satisfaction. However, one in seven nurse participants reported

experiencing conflict with other nurses or doctors often. In addition one in every

five nurse participants in this study also reported experiencing stress often

when there was disagreement with a doctor concerning treatment of a patient,

and one in four nurse participants reported feeling stressed often when they

needed to make a decision concerning a patient when the doctor was

unavailable.

Nurse participants' experiences of conflict with other nurses in this study

appeared to negatively influence the amount of praise and recognition they

received. Other studies have reported similar findings. McKenna, Smith, Poole,

& Coverdale (2003) suggested that the main manifestations of horizontal

violence experienced by 584 New Zealand new graduate nurses, working in

various clinical areas (hospitals and community), was the feeling of being

undervalued. Horizontal violence was defined as psychological harassment

involving verbal abuse, threats, intimidation, humiliation, excessive criticism,

innuendo, exclusion, denial of access to opportunity, disinterest, discouragement and the withholding of information (McKenna et al, 2003). One nurse participant in this study wrote that she was "beyond caring. I don't get involved in ward politics. I work hard for the time I am here but I have learnt to expect little in the way of thanks (personal or monetary) from my employer."

Nurse participants' reports of conflict with doctors was also surprising as nurse relationships with doctors in New Zealand have been noted as being particularly good in this study and others (Budge et al, 2003; Gower & Finlayson, 2002) when compared to international studies where nurse-doctor relationships are often poor (Aiken et al, 2001; Chan & Morrison, 2000; Newman & Maylor, 2002; Vahey et al, 2004). Budge et al (2003) suggested that nurses and doctors in New Zealand see each other as colleagues where each group recognises and values specific skills and knowledge contributions in patient care. Conversely, Watson and Feld (1996) reported that nurse relationships with doctors were marred by conflict when nurses with extensive paediatric experience, skill, and knowledge questioned doctors' orders or attempted to educate doctors in aspects of paediatric care.

A blurring of roles may be occurring as nurses are required to incorporate many of the tasks that were once traditionally the sole prerogative of doctors (Health Workforce Advisory Committee, 2002). Furthermore as their scope of practice expands into the medical domain and nurse specialities develop, nurses may be demonstrating more confidence in their professional expertise as patient advocates and challenging decisions made by other health professionals. In contrast, some nurses may be holding onto traditional ways of working which are no longer effective in an ever changing work environment

creating a tension between the old and new (research based) approaches to delivering health care.

The tension between the old and new approaches to health care delivery and associated conflict may be due in part to nurses acting as "insidious gatekeepers to an iniquitous status quo" (Farrell, 2001, p. 32). For example, a nurse who fails to complete their tasks by the end of the shift becomes a target (Farrell, 2001). Lack of time featured strongly in two of the top five workload items in the workload subscale contributing to job stress in this study. Fifty three percent of nurses reported not having enough time to provide emotional support for their patients, and 46% indicated that they did not have enough time to complete their nursing tasks and care.

It is thought that oppressed groups direct their dissatisfaction inwards (towards each other) as a response to exclusion from the power structures that frame their lives (Freshwater, 2000). Conflict in nursing is posited to be a response to powerlessness, and has been explained in terms of oppression of the nursing profession through a patriarchal system of gendered (male) medical dominance perpetuated by administrators and nurse managers (Freshwater, 2000). Powerlessness is posited to produce a set of behaviours that include a rule bound work context, territorialism, and resistance to change (Haugh & Laschinger, 1996). Patriarchy is defined as an ideology that justifies and perpetuates male dominance through valuing men, their characteristics, and their activities while devaluing women, their characteristics and activities (Falk Rafael, 1996).

As the majority of correlations between job satisfaction and job stress subscales' involved conflict, the relatively low percentage of nurse participants reporting high levels of stress in response to conflict with nurses or doctors was

puzzling. It is possible that nurses do not feel safe enough to report events or the lack of reporting is hiding a larger more complex problem. McKenna et al (2003) found that almost half the New Zealand nurses surveyed did not report experiences of horizontal violence for fear of reprisals. Other explanations are also possible. Horizontal violence may be so prevalent that nurses accept this type of behaviour as normal and therefore do not feel the need to report or act on it. In addition, nurses may not believe that their concerns, if voiced, will be taken seriously. Only 12% of nurses reporting horizontal violence in the workplace received formal counselling or debriefing (McKenna et al, 2003).

Job Satisfaction and Burnout

Relationships between five job satisfaction subscales and emotional exhaustion (the only burnout subscale that demonstrated correlations greater than .3) were consistently negative. The strongest correlation was between control and responsibility (a job satisfaction subscale) and emotional exhaustion indicating that low participation in organisational decision making and control over practice for nurse participants gave rise to emotional exhaustion supporting the descriptive results outlined earlier.

Working environments that do not provide opportunities for the nursing 'voice' to be heard through nurse participation in organisational decision making and control over their practice have been associated with poor patient outcomes (Aiken et al, 2001), a decrease in nurse morale (Callaghan, 2003), and increased intent to leave the job (Larrabee et al, 2003; Vahey et al, 2004). Non-participation in organisational decision making results in nurses having little control in the development and management of patient care at either the individual, institutional or even professional levels (Aiken et al, 2001; Dolan et

al, 1992). The relationship between control and responsibility and emotional exhaustion in this study was similar to past studies (Tummers, Janssen, Landeweerd, & Houkes, 2001). However, the relationship between emotional exhaustion, participation in decision making and control over practice with patient outcomes was not explored in this study therefore it is not known whether the negative relationship is similar.

Powerlessness was seen as a crucial factor in burnout in one study when nurses perceived that they had little control over their jobs (Armstrong-Stassen et al, 1994). The authors suggested that this may be due to the historical and patriarchal relationship between nurses and physicians (Armstrong-Stassen et al, 1994). However, Aiken et al (2002) found that relationships with management were more likely to cause job dissatisfaction and organisational factors contributed to burnout. Garrett and McDaniel (2001) reported that poor nurse peer relationships contributed to emotional exhaustion in a working environment where nurses had low control over practice. In contrast Lee and Ashworth (1996) found that nurses who felt empowered in the workplace demonstrated reduced levels of emotional exhaustion, good relationships with nursing peers and doctors, and were satisfied with the level of involvement they had in decision making and control over practice. As most nurses (63%) in this study were dissatisfied with the level of control they had over their own practice in a context where relationships with nursing peers and doctors were good, it is most likely that the levels of emotional exhaustion experienced by nurse participants is related to a lack of empowerment in the job.

Job Stress and Burnout

Correlations greater than .3 between job stress and burnout were positive indicating that increases in job stress influenced increases in burnout or vice versa. Workload (job stress subscale) and emotional exhaustion (burnout subscale) demonstrated the second strongest correlation in this study strengthening the suggestion made earlier that high workloads experienced by nurses may be directly related to nurse fatigue.

While the majority of nurse participants in this study reported experiencing stress often when nurse staffing was inadequate and there was not enough time to provide emotional support to patients, or complete their designated tasks, rising levels of stress and burnout were also exacerbated by non-nursing tasks which nurse participants were required to carry out. Measurement of non-nursing tasks by Jordan (1992) included cleaning equipment, answering phones, completing records not requiring nursing knowledge, and stocking/reordering supplies. 'To scour is a waste of power' according to Florence Nightingale (Pearson, 2003) and non-nursing tasks that take nurses from 'nursing work' may have negative consequences for patients.

Nurses provide 80% of the direct care patients receive (Antrobus,1997). Therefore, nurses often are the first to observe early signs of change in their patients condition and 'knowing the patient' is considered to be at the heart of caring and the quality of care provided (Gunther & Alligood, 2002). When a change in a patient's condition is negative, the time nurses spend with the patient to enable observation and to prevent complications is crucial in terms of appropriate and timely response. High workloads and non-nursing tasks that force nurses to prioritise which patients receive good quality care have been associated with 'failure to rescue' and increases in patient mortality (Aiken &

Clarke, 2003). Failure to rescue has been defined as a clinician's inability to save a hospitalised patients life when (s)he experiences a complication from a condition not evident on admission (Aiken & Clarke, 2003). Nurses who work in an environment where they cannot provide the optimum care for their patients due to increased workloads and lack of staff have reported increased emotional exhaustion and depersonalisation (Aiken et al, 2002; Dewe, 1987; Duquette et al, 1993; Edwards & Burnard, 2003; Healy & McKay, 1999; Janssen et al, 1999; Robinson et al, 1991).

Results in this study are similar to past studies where emotional exhaustion has demonstrated a negative relationship with workload in nurses particularly when there is limited social support available (Duquette et al, 1994; Janssen et al, 1999; Lee et al, 1996). In contrast, Buchan et al (2003) tracked nurses' levels of emotional exhaustion in a longitudinal study where nurses were supported and empowered to participate in organisational decision making and take more control over their practice and found that levels of emotional exhaustion in nurse participants decreased in a context where workload increased.

The health care environment is shaped by the decisions managers make regarding the distribution of limited resources and nursing has been directed by others to carry out tasks that may not be 'nursing work' as a strategy to reduce costs which leads to increased workloads (Regan, 1990). Tasks imposed on nurses that can be done by others and are not inherent in the skills and knowledge that define nurses' professional, legal, and ethical scope of practice have been associated with a lack of power nurses have to control their conditions of work and practice (Flanagan & Flannagan, 2002). Therefore it is possible that the lack of power to create change through participation in

organisational decision making and control over practice is influencing levels of emotional exhaustion in nurse participants in this study and their ability to cope with high workloads.

Question 3: Do the variables of job satisfaction, job stress and burnout contribute to nurses' intent to leave in New Zealand?

Five subscales used to measure job satisfaction and job stress were identified through regression analysis as predictors of nurse intent to leave in this study (see Figure 6) and explained 26.2% of the variance in intent to leave. In order of magnitude (% of variance of intent to leave explained), the subscales originating from the job satisfaction measurement instrument were professional opportunities (9%), praise and recognition (5%), interaction opportunities (4%) and extrinsic rewards (4%). Lack of support (4%), was the fifth predictor of intent to leave the job and was a subscale of the job stress measurement instrument. Variance in nurse participants' intent to leave the job was predominantly explained by dissatisfaction with professional opportunities. Specifically nearly one in every two nurse participants were dissatisfied with their opportunities to participate in nursing research and advance their nursing skills and knowledge through postgraduate study. In addition one in every three nurse participants reported dissatisfaction with the opportunity to write and publish and actively belong to organisational committees.

Negative relationships between intent to leave and professional opportunities, praise and recognition, and extrinsic rewards suggest that as nurse participant satisfaction decreased intent to leave the job increased. A positive relationship between interaction opportunities and intent to leave the job suggests that as nurse participants experienced more opportunities to

interact socially and professionally with other health professionals, intent to leave the job increased. The positive relationship between lack of support and intent to leave also suggests that increased levels of stress due to lack of support may influence intent to leave the job. Issues arising from the predictors of intent to leave the job are now outlined and possible explanations for these findings are discussed.

Issues Arising from Predictors of Intent to Leave

In recent years nurses have actively pursued a professional status as a means to becoming autonomous practitioners in order to "create change, gain power and status independent of gender' (Gough et al, 1994, p. 149). Characteristics of a professional include the use of a unique body of knowledge, altruistic service, and a code of ethics regulating practice, lengthy socialisation, autonomy and control over practice (Rutty, 1998). The development of a unique body of knowledge through research to differentiate the nursing professions contribution to health care is seen as an essential precursor to acquiring autonomy (Rutty, 1998). Where nursing research and research utilisation has been supported and celebrated nurse intent to leave the job has reduced and patient outcomes have improved (Kramer & Schmalenberg, 2003). A recommendation for the development of a funded national and regional nursing research infrastructure was made in New Zealand by a Ministry of Health Taskforce on Nursing in 1998 (Ministry of Health, 1998) but has not yet occurred.

Post graduate education can provide nurses with the skills and knowledge to conduct and utilise research in practice and is also a strategy used by nurses to gain authority to create change (Le May, Mulhall, &

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Alexander, 1998). Nurses have been encouraged to obtain postgraduate qualifications in recent years but there has been little support provided in terms of financial backing or paid study time (Callaghan, 2003). Consequently the majority of New Zealand nurses do not hold post graduate qualifications (Nursing Council of New Zealand, 2000). In 1999 only 0.7% of 31,801 New Zealand registered nurses (a response rate 71.1%), responding to a survey by the Nursing Council of New Zealand, held a Masters degree (Nursing Council of New Zealand, 2000).

Barriers to participation in postgraduate education include a lack of financial support. In New Zealand a Clinical Training Agency was set up to fund post graduate programmes which are clinically focused. A Ministry of Health Taskforce on Nursing noted that the bulk of the Clinical Training Agency's funds (90%) were invested in medicine and furthermore that attempts to change to more equitable funding for nursing postgraduate programmes were likely to be resisted by the medical profession (Ministry of Health, 1998) thereby maintaining inequities in the opportunities available to nurses to take up postgraduate education.

A lack of support to participate in postgraduate study, nursing research, to write and publish and to participate in organisational committees reported by nurse participants in this study may be associated with a lack of recognition of the work nurses do. Nursing research has the potential to make visible the difference nursing care makes to patient outcomes. The invisibility of the contributions of nursing to patient care can perpetuate the lack of praise and recognition nurses receive from managers and other health professionals (Falk Rafael, 1996).

Pay has been linked to professional recognition of nurses (Chan & Morrison, 2000; Cowin, 2002) and is one of the three items found in the extrinsic rewards subscale. Dissatisfaction with the pay nurse participants received was the second highest source of dissatisfaction in this study. Rates of pay and support for postgraduate study offered to New Zealand nurses by international recruiters have been found to be a great deal better than those offered in New Zealand (NZNO, 2003). International recruiting of New Zealand nurses has increased over the years as other countries also struggle with nurse shortages (see Chapter 1, p. 8). Poor pay rates for nurses are also thought to reduce the attractiveness of a nursing career to students and is of particular concern when the falling numbers of students choosing nursing in New Zealand is considered (P. Lee, 2003).

Nurse participants' intent to leave the job in this study was also predicted by increased interaction opportunities particularly with other health professionals. This finding was unexpected as the direction of the relationship is opposite to the posited theoretical framework developed for this study. As the demographic characteristics of the nurse participants were not explored in relation to the variables of interest in this study, it is unknown whether particular groups of nurses are more likely to be able to participate in opportunities that promote professional interactions with other health professionals and consequently increase intent to leave the job. However, lack of opportunities to interact with other health professionals by nurse participants could impact negatively on the quality of care provided to patients as vital information related to patient care planning held be nurses may be missed (Ministry of Health, 1998). In a report on New Zealand nurses, nurses were described as the 'continuous link' between the hospital system, patients and their families, and

were also seen as the conduit of essential information required to plan, co-ordinate, support, implement, and evaluate patient care (Ministry of Health, 1998).

In this study nurse participants who were experiencing a lack of support in the workplace also demonstrated an increased intent to leave the job. Nurse participants' main concern was a lack of opportunity to talk with colleagues about their problems, experiences, and feelings which may lead to negative attitudes towards employers (Ingersoll et al, 2002) and frustration with a lack of power to create positive change. Infrastructures of power and opportunity in organisations can determine employees work attitudes and behaviour producing "upward cycles of advantage or downward cycles of disadvantage (Haugh & Laschinger, 1996)". It appears from the results of this study that nursing remains in downward cycle of disadvantage which may be leading to an increased intent to leave the job in nurse participants.

Comparisons with other Studies

The predictors of intent to leave the job in this study were unexpected. Previous studies have reported that job satisfaction and burnout are consistent predictors of nurses' intent to leave the job while job stress has failed to provide any strong or consistent explanatory variance in nurses' intent to leave the job (Lake, 1998; Shelledy et al, 1992). In this study, subscales of the job satisfaction and job stress measurement tools (as previously outlined) were found to predict nurses' intent to leave. However, most sources of job dissatisfaction or job stress, and the high levels of burnout found in the descriptive analysis did not predict nurse participants' intent to leave the job as expected. For example, nurse participants in this study reported most

dissatisfaction with the lack of control and responsibility they held and pay, however only pay (one item found in the extrinsic rewards subscale) survived the regression analyses. In contrast, dissatisfaction with the level of control and responsibility and pay have been consistent predictors of nurses' intent to leave the job in other studies (Flannagan & Flannagan, 2002; Ingersoll et al, 2002). Similarly, workload (a job stress subscale) and emotional exhaustion were the main sources of job stress and burnout and have been consistently reported as predictors of nurses' intent to leave the job in other studies (Aiken et al, 2002; Janssen et al, 1999) but these subscales did not predict nurse participants' intent to leave in this study as expected. However, previous research supports the idea that positive attitudes and behaviour produce upward cycles of advantage (Haugh & Laschinger, 1996).

Positive attitudes of nurse participants in this study were indicated by their desire to improve their professional opportunities through postgraduate education and research, make the contributions of nursing visible (recognised), and possibly use these strategies to respond to issues arising from practice as nurse participants were not being 'heard' by nurse managers (lack of support). Chan and Morrison (2000) found that nurses who had postgraduate qualifications which were associated with higher pay, status and more opportunity to use nursing skills and knowledge were more likely to stay. However, nurses with more qualifications, higher status, and practice autonomy, who are not satisfied with their professional opportunities, have been reported as being more likely to leave the job (Gurney et al, 1997; Shields & Ward, 2001). Conversely, Purvis and Cropley (2003) found that nurses with lower qualifications, who were single and who received little recognition for their work were also more likely to leave.

Possible Explanations of the Studies Results

The results of this study suggest that work related factors that influence nurse participants' attitudes towards job satisfaction, job stress, and burnout may not be the same as those that motivate a nurse to consider leaving the job. However, a consistent pattern of nurse participants' dissatisfaction with a lack of participation in organisational decision making, a lack of control over practice, a lack of praise, recognition and pay, a lack of nurse staffing and high workloads, and a lack of support may be positioning nurses to seek professional opportunities as a means to empower themselves while also reducing the gendered inequities that are being maintained in the workplace.

The value of self-governance and nurse empowerment in the health care environment is becoming evident through a growing amount of international research (Erickson, Hamilton, Jones, & Ditomassi, 2003). Self-governance and nurse empowerment are being used as strategies by nurse leaders and nurses to make improvements in the work environment that improve nurse recruitment and retention while also improving patient outcomes (Buchan et al, 2003). However, when nurses are not able to meet their personal and professional standards in nursing practice increased intent to leave the job can be the result (Lake, 1998) and previous studies have found that nurses who demonstrate increased intent to leave the job will eventually leave the job (Ng et al, 1992; Soothill et al, 1992).

Most nurses take up nursing to realise their goals of helping others (While & Blackman, 1998) and to make a difference in people's lives (Shendall-Falik, 2001). The dissatisfaction with the level of professional opportunities provided for nurse participants increased intent to leave in this study and lends weight to the assertions that nurses want to participate in the

organisation in a meaningful way to meet a professional ethic of excellence in practice. This finding strengthens the suggestion made earlier that nurses in this study do not enjoy the active influence of administrators and managers to legitimize nurse decision making and control over professional practice where nurse participants could create positive change that may improve patient outcomes.

Sufficient nurse staffing is a key factor in health care environments that were found to demonstrate high quality professional nursing care (Lashinger, Almost, & Tuer-Hodes, 2003). In this study the main source of stress in the workplace was high workloads and lack of staff. Adequate nurse staffing has been found to reduce stress related to high workloads and burnout, increase job satisfaction, and allows nurses the time to access information, support, professional opportunities to learn and grow, develop strong relationships with other health professionals and create work environments that support professional practice (Lake, 1998; Lashinger et al, 2003; Shelledy et al, 1992).

Nurse participants were also dissatisfied with the level of praise and recognition they received from their managers for the work the do. Low pay relative to other health professionals has been linked to a lack of professional recognition and is also seen as a gender issue by the nursing profession (Adamson, Kenny, & Wilson-Barnett, 1995). Nurses appear to be disenfranchised in comparative rates of pay simply because they are women (Gordon, 2003). Women working in the health sector earn only 64% of men's pay in New Zealand (Taylor, 2004). Comparisons between New Zealand nurses with junior doctors, police, teachers, and overseas nurses all demonstrate inequity between female and male dominated professions (Gordon, 2003).

Dissatisfaction with pay in the 1990s has been a particular source of frustration for nurses as nurse employers expect nurses to carry out further education and specialisation without consequent pay or career advancement recognition, or any increase in control over practice (Cobden-Grainge & Walker, 2002; Dolan et al, 1992; Flannagan and Flannagan, 2002; Gordon, 2003; Newman & Maylor, 2002). When educational investments do not reap expected financial rewards, dissatisfaction with the job and intent to leave the job increases (Janssen et al, 1999; Shields & Ward, 2001; Tummers et al, 2001).

The Relevance of the Conceptual Framework to the Study

The conceptual framework developed from a review of literature used to guide this study was partially supported and was modified in response to the study's results (see Figure 12). The four job satisfaction subscales identified through regression analysis are explained in terms of Maslow's (1954) Hierarchy of Needs while the job stress subscale is explained in terms of Lazarus and Folkman's (1984) Theory of Stress and Coping.

Regression results suggest that work related variables that provide opportunities for growth in self-actualisation and self-esteem are important to nurse participants and could be motivating intent to leave. Individuals who are motivated undertake certain activities in the hope that these drives and desires will be satisfied by the action and the outcome of those actions (Girvin, 1996). Self-actualisation is explained in terms of the potential of individuals to fulfil themselves in order to be doing the best that they are capable of doing (Maslow,1984) and involves seeking out challenges and learning opportunities. Variables predicting nurse intent to leave the job in this study reflected nurse participants' desire to become self-actualised through seeking out opportunities

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to develop professional attributes where achievement is recognised and rewarded (building up self-esteem) through professional interactions (giving a sense of belonging) in a supportive work environment.

Maslow (1954) suggested that individuals need to feel they belong and seek reaffirmation (self-esteem) of themselves as worthy individuals through praise and recognition. Self-esteem is defined as a positive regard for oneself and a feeling of worthiness while limitations are recognised and used as a challenge to grow and improve (Farrell, 2001). Nurse participants who demonstrated increased intent to leave the job indicated a desire to take up the challenge of postgraduate study and nursing research. Such goals can be viewed as a means to increase self-esteem through the development of a more positive self-image (Coulon, Mok, Krause, & Anderson, 1996).

Previous research suggests that nurses who take up nursing as a career do so in order to 'help others' (While & Blackman, 1998) however, this need has also been associated with a drive to develop self-esteem. In this study nurse participants who demonstrated an increased intent to leave were dissatisfied with the amount of praise and recognition they received suggesting that the recognition systems in place at the time of the study, for example recognition of nursing competency based on Benner's career pathways (Benner, 1984) and recognition of tenure, were not meeting nurse participants' needs.

Pay is usually seen as a physiological need in that pay can provide shelter, food, water, heat, clothing etc (Benson & Dundis, 2003). However it has been argued earlier that nurse participant's attitudes towards pay could also be associated with lack of praise and recognition for the high workloads nurses cope with and the contributions they make to patient care.

Figure 12. Revised Conceptual Model of Nurse Intent to Leave
(Brackets = Standardised Coefficients)

Job Satisfaction
- Professional Opportunities
- Praise and Recognition
- Extrinsic Rewards
- Interaction Opportunities

(- .375)

(- .286)

(- .214)

(+ .253)

-ve

Intent to Leave

Job Stress
- Lack of Staff Support

(+ .198)
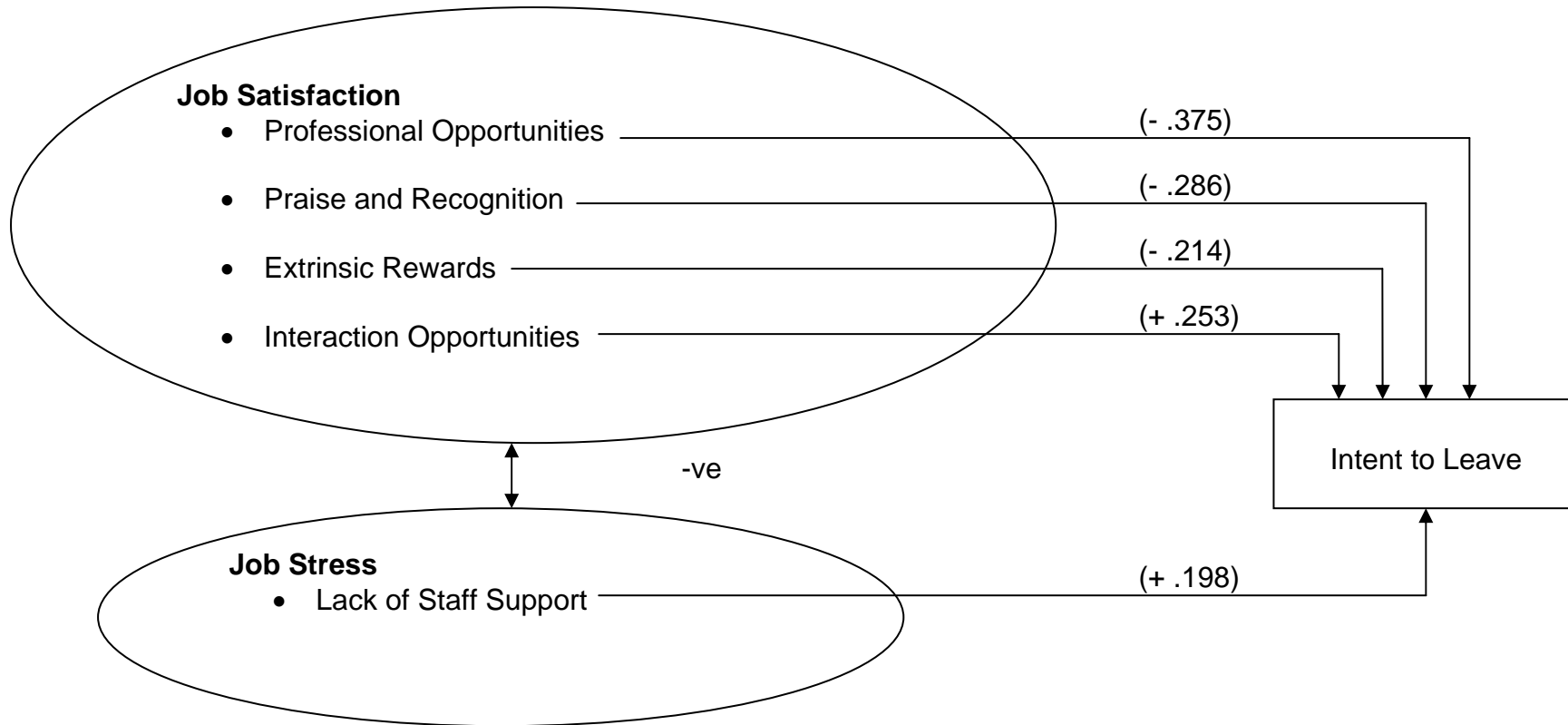
Evaluations of self-esteem result from comparisons made by one group to another (Farrell, 2001). From this point of view, nurse participants' attitudes to pay could reflect a lack of self-esteem as the nursing profession is often seen as a marginalized and low-status group, particularly when pay rates are compared to other health professionals. Alternately, nurse participants' dissatisfaction with pay could also suggest high self-esteem. Nurse participants with higher levels of intent to leave the job in this study also wanted to commit to postgraduate study and nursing research which could be seen as a strategy to gain more recognition and better rates of pay.

Nurse participants were satisfied with their opportunities to interact with other health professionals in this study, however these professional and social interactions appeared to increase intent to leave. This was an unexpected result and was opposite to the theorised relationship predicted in the conceptual framework developed for the study. This finding suggests that nurses may be gaining opportunities for postgraduate study and participation in nursing research outside the organisation through interaction with other health professionals.

Maslow (1954) posited that interaction opportunities can lend themselves to the development of belongingness, or being a valued part of the group. Nurse participants who do not receive the support they need to be heard in the organisation regarding practice issues may be feeling frustrated and looking elsewhere for opportunities to create positive change in the work environment.

Lack of support was the only stressor in this study predicting intent to leave the job in nurse participants. Seeking support from nursing colleagues regarding problems in the working environment has been posited as a means to cope with workplace stressors (Lo, 2002; Payne, 2001). Lazarus and Folkman

(1984) saw coping as a strategy to manage or alter the problem (problem-focused coping) or avoid problems that cannot be changed (emotion-focused coping).

As nurse participants in this study demonstrated an increased intent to leave in response to low support in the workplace one could argue that nurses may use emotion-focused coping. However these nurses were also demonstrating a need to actively participate in postgraduate education and nursing research, gain praise and recognition, and develop stronger relationships with other health professionals through interaction opportunities. Therefore low support may be acting as a driver for nurse participants to gain further skills and knowledge as a problem-solving strategy to gain the authority as change agents to resolve or reduce problems in the health care environment.

Using the theoretical underpinnings of the conceptual framework has been useful in providing possible explanations for the results of this study however a number of suppositions have been made and need to be addressed through further development of the framework. It has been argued that issues of power, control, and gender are contributing to nurse participants' levels of job dissatisfaction, job stress, burnout and intent to leave the job. However, these concepts were not incorporated into the conceptual framework for this study. Furthermore, it has been argued that nurse participants' motivation behind increased intent to leave is associated with their ethical and professional concerns with poor patient outcomes. This relationship has not been established in this study or any other in New Zealand therefore measurable patient outcomes need to be added to the conceptual framework to develop a better understanding of the motivations underlying nurses' intent to leave the job.

Implications and Recommendations

Exploration of the relationships between job satisfaction, job stress, burnout and intent to leave in a sample of New Zealand nurses was the main purpose of this study. Identification of specific sources of job dissatisfaction and job stress that are predictors of nurse intent to leave, open up opportunities for nurse leaders and employers of nurses to develop and implement strategies to improve nurse recruitment and retention. Potential strategies and recommendations are proposed from managerial, research, education, and practice perspectives next.

Managerial Strategies and Recommendations

Recognition of the benefits of achieving Magnet Hospital accreditation by the New Zealand Minister of Health has resulted in support for the application of Magnet Hospital principles in New Zealand DHBs (Ministry of Health, 2003). Health care environments known as Magnet Hospitals have employed nurse self-governance as a strategy to improve the status, prestige and recognition of nursing through professional opportunities such as post graduate study and clinically focused research (Tummers et al, 2003). Work environments that are structured to support nurse autonomy as a prerequisite of self-governance also demonstrate positive interrelationships between nurses and other health professionals (Tummers et al, 2003) while also reducing intent to leave the job (Buchan et al, 2003). Therefore it is recommended that nurse leaders utilise their authority and influence to encourage the implementation of professional practice environments that incorporate Magnet Hospital characteristics.

Research Strategies and Recommendations

Changes to the Health and Safety in Employment Act, cited by OSH (1998), have incorporated stress as a significant hazard and require employers to take all practicable steps to prevent, eliminate, and/or minimise employees experiencing harm (stress) in the workplace. Stressors identified in this study include workload and conflict which have increased job dissatisfaction and emotional exhaustion and may be impacting on the health of nurses. The New Zealand Nurses Organisation is currently campaigning for the implementation of legally binding nurse to patient ratios mirroring a similar campaign run in Victoria, Australia, where 4000 nurses have returned to nursing in response to minimum nurse/patient ratios (NZNO, 2003).

While reducing nurse workload through lowering nurse/patient ratios is important, practical solutions could also involve conducting research to identify and change aspects of nursing practice such as ingrained task/time traditions, or evaluating how many non-nursing tasks could be eliminated from daily practice. In addition, New Zealand research exploring the relationship between nurse workload, coping strategies, and or patient outcomes was not found but it would seem important to discover whether coping strategies employed by nurses have any negative outcomes for patients when nurse workload is high. Currently DHBs do not collect data on patient outcomes that are meaningful to nursing. It is recommended that a triangulated study be conducted to identify strategies nurses use to 'cope' with high patient workloads while also monitoring patient outcomes to facilitate comparisons with international studies.

As conflict appeared to influence many aspects of the working conditions of nurse participants it is important for employers to monitor trends in reported conflict and find ways to make visible unreported conflict. Identification

of issues contributing to conflict in the health care environment could be explored from feminist or critical social research perspectives to expose infrastructures that maintain and perpetuate conflict. Specific strategies to reduce conflict in the health care environment could be developed and implemented in response to this information.

The Health and Safety in Employment Act 1992 requires that employers provide a safe working environment for employees therefore it is important for nurse employers and the nursing profession to understand whether sustained levels of emotional exhaustion, in actively working nurses, are having a negative impact on their health. It is recommended that an epidemiological study of nurses' health outcomes is conducted and compared to the general population. If this suggestion is substantiated, nurse employers will be enabled to implement preventative measures to improve the health status of nurses.

Educational Strategies and Recommendations

Professional opportunities in the New Zealand health care environment are expanding. For example, nurse-led outpatient clinics, ambulatory and hospital in the home care are being used as strategies to improve patient outcomes and reduce costs. Such strategies require a highly educated, skilled, and experienced nursing workforce to ensure these approaches to health care delivery are resourced adequately and evaluated. The Ministry of Health and nurse employers need to provide adequate, equitable and supportive incentives for nurses to commit to relevant postgraduate study. Equitable distribution of Clinical Training Agency funds could also go a long way to supporting innovative nursing care through postgraduate education and research in both the primary and tertiary sectors of the health care environment.

Practice Strategies and Recommendations

Pay rates that recognise the education, skills, knowledge, and experience of nurses have been posited to improve the retention rates of nurses (Cowin, 2002). Salary packages could include incentives such as post graduate qualification allowances, annual paid conference leave, preceptor allowances, increases in annual leave for full time staff, post graduate education scholarships and adequate paid time to study, childcare subsidies, and retirement packages. Pay rates and work conditions in New Zealand need to be competitive with those being offered internationally to reduce nurse intent to leave and turnover.

Study Strengths and Limitations

Compromises are made in every study therefore the strengths and limitations in this study will now be outlined.

Strengths

This study was the first study conducted in New Zealand exploring job satisfaction, job stress, burnout and intent to leave within one framework and adds to the knowledge gained from other New Zealand studies that have explored nurses' intent to leave the job. Specifically this study explored work related variables under the control of nurse employers, therefore the results can be used to improve the recruitment and retention of nurses in New Zealand.

A random sample was used to reduce the chance of researcher or participant bias and to increase the likelihood of obtaining a representative sample (Polit et al, 2001). Randomisation of the sample also allowed for statistical testing to be conducted on the data to determine the significance of

the results (Polit et al, 2001). Sample characteristics were presented with a number of DHB nurse characteristics and indicated that this study's sample was generally representative. In addition an acceptable response rate of 69% was achieved therefore either the strategies employed to obtain an acceptable response rate were successful or the subject 'intent to leave the job' was of interest to nurse participants.

Limitations

A cross sectional approach was taken in the research design of this study to facilitate comparisons across similar studies. A major weakness of such a design is that the existence of a relationship between variables does not infer that one caused the other (Polit et al, 2001). Longitudinal designs that track changes in attitude over time could be used by nurse employers to evaluate the implementation of nurse recruitment and retention strategies, while also establishing causation (Polit et al, 2001).

This study used a structured paper and pencil survey containing closed questions to elicit information from the nurse participants. One of the draw backs of closed ended questions is the concern that some important information is missed. Several participants commented that they would have preferred to have the opportunity to provide more information than was requested in the survey.

Although random sampling was used and the sample appears representative of the target population the nurse participants came from one DHB thereby limiting the generalisability of the results to the total nurse population in New Zealand. Other New Zealand studies have found differences in attitudes towards work related variables in nurse participants between DHBs

(Gower & Finlayson, 2002; Ng, 1992) therefore it is important to note that the results in this study should not be generalised to all New Zealand nurses. In addition sampling stratification was not used to identify any differences in job satisfaction, job stress, burnout, and intent to leave between different demographic groups (age, gender, nurse speciality, hospital/community). A larger stratified sample could explicate unique issues in different healthcare settings, amongst different groups of nurses working in specific specialities, making the data useful at unit level as opposed to organisational level.

A high percentage of non-response within the job satisfaction measurement scale was found in an item measuring nurse participants' satisfaction with childcare facilities. A high concentration of missing data in one question raises a number of questions and may indicate a biased result where certain groups of participants are under-represented (de Vaus, 2002). Was the question understandable? Is there a difference in the demographic characteristics between the nurse participants who answered the question compared to those who did not answer the question? It is possible that some nurse participants felt that the question did not apply to them as there was only one child care facility available at the main tertiary hospital and no access to similar facilities in the smaller secondary hospitals within the DHB. Alternately, it is also possible that nurse participants who did not have dependent children did not answer the question. This result suggests that further analysis of the applicability of the job satisfaction measurement tool in the New Zealand health care context is required.

One subscale from the job stress measurement tool, lack of support, produced a low Cronbach's alpha of 0.42. An acceptable Cronbach's alpha is usually 0.7 or higher, however these values are sensitive to the number of items

in the scale (Pallant, 2001) and short scales (e.g. scales with less than 10 items) often have low Cronbach values. As the lack of support subscale contained only three items, the shortness of the scale may have contributed to the low Cronbach alpha. Lack of support was a predictor of intent to leave the job in this study therefore this finding must be taken into account when considering the studies results.

The regression model only explained 26.2% of the variance in intent to leave indicating that there is a great deal of unexplained variance in the model. The results suggest that the nurse participants are motivated to provide the best care they can and the relationship nurses have with their patients may be contributing to the high rate of satisfaction reported by nurse participants. These possibilities need to be explored to ascertain how satisfaction with the content of the job (or lack of it) contributes to nurse intent to leave the job.

Personal Reflections and Learning Outcomes

Throughout my studies I have come to believe that research can provide answers to questions. In turn, these answers can be used to create change. While I knew my first experience as a researcher would give me many opportunities to learn, I did not appreciate the scope of learning that my journey would encompass. Some of the knowledge I now have is outlined here.

Prior to starting the research project, before the research questions are fully developed, it is important to take time to embrace the principles of the Treaty of Waitangi through appropriate and full consultation. This process cannot be rushed. If it is, as it was in my case, an opportunity is lost to add a richness and depth to the research study that cannot ever be regained.

Conducting and completing a review of literature (if appropriate to the research approach) prior to the development of the research method will assist in the decisions that need to be made regarding the research approach, methodology, and method. Although I had devoured the literature and knew the subject well, I did not write my review of literature until after I had started my research and as a consequence I did not have a coherent and focused understanding of details that became important.

Secondly, many nursing research studies are conducted using paper and pencil surveys, I would recommend a thorough testing of the tools prior to use to ensure that the data elicited from these tools encompass the type of information required for the study. This is particularly important when one considers the multitude of measurement tools available that are deemed reliable and valid and are broadly about the subject in focus, but may not capture the information that is needed.

Next, if it is necessary to develop a new survey instrument, I strongly recommend that it is thoroughly pilot tested. In this study, I developed the demographic survey instrument and tested it on a number of nursing and researcher contacts. However, the testing was limited and failed to identify that I had not included a question that would identify whether a nurse was a Registered Nurse, Midwife, or Enrolled Nurse.

Conclusion

Issues contributing to nurse shortages in New Zealand are complex therefore it is important to understand the factors that may be impacting on nurse recruitment and retention. This study explored the relationships between nurses' intent to leave the job, job satisfaction, job stress and burnout. Analysis

of the relationships between the variables indicated that factors influencing nurse participants' levels of job satisfaction, job stress and burnout were not the same as the variables influencing intent to leave the job.

Issues of power and control in the workplace appeared to be associated with nurse participants' levels of job dissatisfaction, job stress, and burnout. Specifically, the majority of nurse participants were dissatisfied with their level of participation in organisational decision making, their control over practice and work conditions. Consequently, there appear to be few opportunities for the voice of nursing in the organisation to be heard.

Both research and media reports of nurses' experiences of high workloads, stress, burnout, and poor patient outcomes have been associated with intent to leave the job. However, intent to leave the job in nurse participants' in this study was not directly motivated by high workloads or burnout but was influenced by the need to develop further skills and knowledge that could be used to create positive change in the health care environment. In addition, intent to leave the job for nurse participants appeared to be motivated by the need to improve the nursing profession's visibility, value, and reward.

In conclusion, this study joins a groundswell of New Zealand research providing evidence to decision makers and nurse employers of the issues nurses are currently experiencing in the workplace so that nurse participants could be heard. The evidence found in this study provides an opportunity for government and nurse employers to consider the results, respond to the recommended strategies to improve the recruitment and retention of nurses in New Zealand, and evaluate the outcomes.

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Appendix A. Results and Summary of Published Research Examining Nurse Intent to leave, Job Satisfaction, Job Stress, and Burnout

Variable	Number of articles found	Number of articles meeting the inclusive criteria	Article title and author	Sample	Theoretical Framework	Measurement	Method	Findings
Intent to leave	24	7	Predicting registered nurse job satisfaction and intent to leave. Journal of Nursing Administration. 33 (5): 271-83, 2003. Larrabee JH, Janney MA, Ostrow CL, Withrow ML, Hobbs GR Jr, Burant C.	Convenience USA RNs N = 90 Worked in 2 medical, 2 surgical and 3 ICU step down	Nursing Systems Outcomes Research model and the cognitive model of empowerment.	Work Quality Index (Whitley & Putzier, 1994) (10 other measurement tools) *Intent to leave* Single item 5 point response scale (Price & Mueller, 1981)	Cross Sectional Survey Questionnaire ANOVA Correlation Multivariate Regression	Nurses who were satisfied with the amount of time to give to patient care, the variety of clinical challenges, the opportunity to be of service to others and engage in research were 2.4 times more likely to indicate no intention of leaving their job. Job dissatisfaction was the primary predictor of intent to leave and explained 25.6% of the variance. In turn, empowerment explained 54% of job satisfaction variance. Strong relationship between intent to leave and low control over practice is consistent with Magnet hospital study and confirms the importance of nurses having a voice in organisational decisions.
			Nurses' job satisfaction, organizational commitment, and career intent. Journal of Nursing Administration. 32 (5): 250-63, 2002. Ingersoll GL, Olsan T, Drew-Cates J, DeVinney BC, Davies J.	N = 12,000 RNs employed in the USA. Response rate = 33.3% (4000). Randomised sampling	Not stated.	Organizational Commitment Questionnaire (Angle & Perry, 1981). Index of Work Satisfaction (IWS) (Stamps & Piedmonte, 1997). One year and 5 year response options on intent to stay in the current organisation, intent to change position in the current setting, intent to change employer, intent to temporarily leave the nursing workforce and intent to permanently leave the nursing workforce (including retirement). Author not stated. Reliability not stated	Questionnaire Cross Sectional Survey Descriptive ANOVA Chi Square Factor Analysis of IWS Multiple Regression	Differences in levels of job satisfaction were found for age, current educational background, primary nursing role, primary employment setting and speciality area. Older nurses were significantly more satisfied than nurses younger than 50 years Masters prepared nurses were more satisfied than baccalaureate prepared nurses. Staff nurses employed in hospitals were the least satisfied of all respondents scoring significantly lower than any other groups. One year and 5 year intent were associated with job satisfaction and organizational commitment. Those who intended to stay at the same organization, in the same position had significantly higher overall satisfaction and commitment scores than those who intended to stay with the same employer but change jobs. Satisfaction with pay was significantly different between those who intended to stay at the same organization in the same position and those who intended to change employer. This pattern was repeated for satisfaction with level of professional status, level of interaction, perception of task requirements, perceptions of organizational policies and autonomy. Organizational commitment predicted intent to stay or leave but overall job satisfaction did not. Subscales. At 1 year perception about task requirements (β = -.08; P < .04) and organizational commitment (β = -.211; P < .0001) predicted intent. At 5 years, perception about professional status (β = -.132; P <.0001) and organizational commitment (β = -.184; P <.01) were predictive. An unexpected finding of the study was the planned five year turnover of the most satisfied and committed nurses in the sample and was explained as being related to plans for retirement. It was questioned whether this finding reflected changing perceptions about what is realistic in a work setting? Or whether these satisfied nurses are more focused on factors outside the work setting. The second major finding was the relationship between favourable perceptions of work group and increased levels of job satisfaction and organizational commitment, a finding that has been found in a large number of studies. Those employees that believe that their work groups are supportive and cohesive are less critical of the organization as a whole and are more likely to remain attached to the organization.

Variable	Number of articles found	Number of articles meeting the inclusive criteria	Article title and author	Sample	Theoretical Framework	Measurement	Method	Findings
			Testing the stress-response sequence model in paediatric oncology nursing. Journal of Advanced Nursing. 28 (5): 1146-57, 1998. Hinds PS, Sanders CB, Srivastava DK, Hickey S, Sayawardene D, Milligan M, Olson MS, Puckett P, Quargneneti A, Randell EA, Tyc V.	N = 190 full and part time nurses employed in a USA paediatric cancer centre. Response rate = 66% (126). Random sampling.	Stress response model composed of 4 interrelated components: stressors, reactions, consequences and mediators (Elliot and Eisdorfer, 1982).	Stressor Scale for Paediatric Oncology Nurses (Hinds et al, 1990). Perceived Stress Scale (Cohen et al, 1983). Measure of Job Satisfaction (Traynor & Wade, 1993). Organizational Commitment Questionnaire (Mowday et al, 1979). Group Cohesion Scale (Bryne, 1961). Intention to leave was measured by a single 5 item scale (likelihood of resigning within 6 months) (Curry et al, 1985).	Questionnaire Cross Sectional Descriptive Correlation ANOVA Regression	Nurses demonstrated moderate intensity of role related stress with highest mean scores being Co-workers and Dying with Grace. Satisfaction was also moderately high with the highest item being "personal satisfaction" and the lowest, "pay and prospects". Likewise high organizational commitment and group cohesion was apparent. The intent to leave mean score was 1.76 (SD = 1.07: Range 1-5) indicating that participants were unlikely to leave the study setting. A negative correlation between stress and job satisfaction was found. However increases in job satisfaction also increased organizational commitment and group cohesiveness while intent to leave the job and the organization decreased. The major components of the stress-response sequence model were not statistically significant. Stress appeared to peak in the 30-34 years olds and was lowest amongst the 40-44 year olds. Although there was moderate stress levels, job satisfaction was also moderately high supporting the assumption that stressed conditions do not necessarily result in negative consequences. Sources of job dissatisfaction included working with nurses who did not adequately meet the needs of the patients and families causing unnecessary suffering, perceiving management as distant and uninvolved in clinical needs, and feeling unable to meet all role related demands. An explanation for the lack of good fit for the model included the fact that none of the questionnaires measured meaningfulness in the nursing role which the qualitative findings indicated as a significant factor.
			Job satisfaction and organizational attachment of nurses holding doctoral degrees. Nursing Research. 46 (3): 163-71, 1997. Gurney CA, Mueller CW, Price JL.	N = 1,114 doctorally prepared USA members of Sigma Theta Tau. Response rate = 83.6% (931). After various surveys were eliminated the final sample was 81.7% or 869. Sample method not stated.	The Price-Mueller model	Measures for all variables came from Price & Mueller, 1986).	Questionnaire Cross Sectional Survey Maximum Likelihood technique	Job satisfaction rose with increases in group cohesion, resource adequacy, variety, positive affectivity, work motivation, career orientation and performance self-image. Job satisfaction also rose with decreases in local opportunities, pay, negative affectivity and employment in a non-academic setting. The negative effect of pay was unexpected. Intent to leave was reduced by greater promotional opportunities, autonomy, total work experience, organizational commitment and working in a non-academic setting. Intent to leave was increased by greater non-local job opportunities. Work overload on commitment which then translated into a negative total effect on intent to leave. Most models show work overload to have a negative effect on these outcomes and was thought to reflect a sense of importance of the work being done resulting in job satisfaction because of the vital contribution to the organisation that is made reinforced by the extra hours. Professional values of autonomy, variety and justice were important: career ladders were important: a heavy workload was positive rather than negative and pay was not important. NB the authors did not offer an explanation for this statement. It is possible that these nurses were already being paid very well (education/position).

Variable	Number of articles found	Number of articles meeting the inclusive criteria	Article title and author	Sample	Theoretical Framework	Measurement	Method	Findings
			Analysis of job satisfaction, burnout and intent of respiratory care practitioners to leave the field or the job. Respiratory Care. 37 (1): 46-60, 1992. Shelledy DC, Mikles SP, May DF, Youtsey JW.	N = 788 Respiratory Care Practitioners working in Georgia, USA. Response rate 58% (458) and 10% (33) non respondents ? Convenience	Not stated.	Job Analysis Survey for Respiratory Care Practitioners (Shelledy et al, 1992). Job Descriptive Index (Smith, Kendall, & Hulin, 1969). Jones' Staff Burnout Scale (Jones, 1982)	Questionnaire Cross Sectional Survey T-tests (difference between respondents and non-respondents) ANOVA Correlation Multiple regression analysis	No significant differences were found between respondents and non-respondents. No significant differences were found between mean burnout scores and any demographic or organisational variables except work week configuration which showed a significant difference (F=3.64, p = 0.0128). The strongest predictor of burnout was job stress. Other job related variables in addition to job stress accounted for 61% of the variance in burnout. The strongest job related predictor of job satisfaction was recognition by physicians and by nursing. Other variables included age, burnout level, absenteeism and intent to leave. The level of job stress was associated with levels of satisfaction with pay, satisfaction with promotions, and burnout. As burnout increased so did intent to leave and turnover. As social support improved, burnout levels declined. Burnout also decreased with increasing age. The best single predictor of satisfaction with pay was actual salary. Those who were more highly paid tend to be more satisfied. Reduced job stress, increased job independence and job control, improved role clarity and high levels of job satisfaction were all associated with lower levels of burnout. A lack of job satisfaction and higher levels of burnout were associated with an increase in intent to leave the job and actual turnover.
			Tenure as a moderator of the absence-intent to leave relationship. Human Relations. 40 (5): 255-66, 1987. Ferris FR, Rowland KM.	N = 81 RNs in a USA hospital. Response rate = 100%. Sampling method not stated.	Theoretical work by Nicholson (in press), Rosse & Miller (1984) and Katz (1980)	Absence – hospital records. Intent to leave – 1 item (What are your plans for staying in the organisation?) with 4 reply options (Nicholson et al, 1977).	Questionnaire. Cross Sectional Survey. Correlation. Regression.	A low correlation between tenure and absence was found (-.08). The regression analysis found that tenure interacted with absence to influence intent to leave. Under low tenure, the absence-intent to leave correlation was r = -.30 (p < .05, N = 40). Under high tenure, the correlation was r = .28 (p < .05, n =41). The difference between the correlations was significant. The author suggested that for low tenure employees being absent more often lowered intent to leave. As tenure increases a response to job and organizational influences i.e. job dissatisfaction, is an increased intent to leave.
			Determinants of hospital staff nurse turnover. Medical Care. XIX (4): 431-43, 1981. Weisman CS, Alexander CS, Chase GA.	N = 1,259 nurses employed in 2 USA university affiliated hospitals between the fall and winter of 1977. Response rate = 97.7%. Sampling method not stated.	Conceptual model derived from literature	Autonomy (Quinn & Shepard, 1974). Job Descriptive Index (Smith et al, 1969). Intent to leave Turnover Type of nursing care and other structural features of units. Hospital data	Structured interviews at baseline. Longitudinal. Regression	Shorter tenure and a greater number of job hunts predict resignation. Neither job satisfaction nor autonomy had a direct effect on turnover. Job satisfaction had a strong negative relationship with intent to leave and autonomy is the strongest predictor of job satisfaction. Head nurse scale was the strongest predictor of autonomy. Only shorter tenure and intent to leave had direct effects on turnover. Therefore high turnover appears to create a cycle where turnover necessitates hiring new nurses and these nurses in turn are at higher risk fro resignation. Nurses in more advanced positions were seen to be facing limited career opportunities and consequently considered job changes to other organisations. Two thirds of nurses resigning reported they were leaving for jobs in clinical nursing in other hospitals. The authors suggested that effective incentives to stay may include intrinsic work rewards e.g. increasing levels of responsibility and control within clinical nursing.

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Intentions to leave	17	7	The relationships among turnover intentions, professional commitment, and job satisfaction of hospital nurses. Journal of Professional Nursing. 18 (4): 214-9, 2002. Lu K, Lin P, Wu, C, Hsieh Y, Chang Y.	N = 2,550 hospital nurses working in Taiwan. Response rate = 86.2% (2,197). Random sampling.	None stated.	Professional Commitment Scale (Lu, Chiou & Chang's, 2000). Intention to leave the organization and intent to leave the profession were measured by items based on Blau and Lunz's (1998) definition. 2 items on a 4 point scale.	Questionnaire. Cross Sectional Survey. Descriptive Correlation Discriminant analyses were used to estimate the % of correct classifications for the 4 group classification of intention to leave the organization and intention to leave the profession.	There were significant negative correlations between turnover intentions and marital status, wage, age of the youngest child, family support, job satisfaction and professional commitment but positive correlation between educational level and turnover intentions. Nurse's wages were positively correlated with professional commitment. Job satisfaction was positively and significantly correlated with professional commitment and negatively correlated with turnover intentions. The discriminant analysis indicted that professional commitment is more effective in predicting intention to leave the nursing profession than the organization. Job satisfaction was more effective in predicting intent to leave the organization than intention to leave the profession. These findings suggest that intention to leave the organization and to leave the nursing professions tem from different attitudes. The authors concluded that enhancing job satisfaction for nurses could result in benefits for both the individuals and their organizations y focusing on the intrinsic values of the nursing profession.
			Factors influencing the retention and turnover intentions of registered nurses in a Singapore hospital. Nursing and Health Sciences. 2: 113-121, 2000. Chan E, Morrison P.	N = 120 nurses working in a Singapore hospital. Response rate = 95% (114). Convenience sampling.	None stated.	Un-named tool adapted from tool developed by Battersby et al, 1990 containing demographic and work-related factors thought to influence intent to leave. Intent to leave was defined as those who intended to resign within the next 12 months. Stayers were those who intended to stay for the next 12 months	Questionnaire. Cross Sectional Survey. Descriptive	The only demographic difference between stayers and leavers was nursing qualifications. Leavers had fewer qualifications, were not specialised and had shorter tenure. The major influencing factor for 70% of the leavers was similar to those influencing the stayers. They were whether the nurse liked the job, had collegial cooperation, were able to use nursing skills and achieve recognition, and issues relating to the organization e.g. adequacy of staffing, salary and welfare. The organisational issues had a higher ranking for the leavers. Poor staffing, heavy workload and encounters with doctors, supervisors and administrators in the nursing hierarchy were problematic even for most stayers. The authors concluded that opportunities to obtain post-basic qualifications and specialist qualifications resulted in higher status and an extra allowance which may be why these nurses were more likely to stay. Higher pay was associated with status in the organisation. However whether the nurse liked the job was fundamental to the decision to stay or leave. Having the capacity to utilise one's nursing skills, having autonomy, achieving recognition for work done and a high standard of patient care influenced the decision of 4/5ths of the stayers. Staffing levels were the second most frequently cited reason for resigning. Leavers also indicated that monetary rewards were significant in their decision to leave. Pay ranked 5th as the reason for leaving the hospital.

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			Do new roles contribute to job satisfaction and retention of staff in nursing and professions allied to medicine? Nursing Management. 8 (1): 3-12, 2000. Collins K, Jones ML, McDonnell A, Read S, Jones R, Cameron A.	N = 614 73.6% (n = 469) were USA nurses and 26.4% (n = 162) were USA Professionals Allied to Medicine (PAMs). Sampling method not stated.	Herzberg's (1966) theory of motivation. Need fulfilment theory (Herzberg, Mausner, Synderman, 1959). Theory of work adjustment (Dawis & Lofquist, 1984).	Author developed questionnaire – 38 items. Intent to leave incorporated into instrument. No reliability.	Questionnaire Cross Sectional Survey. Descriptive.	'I would like to leave the profession if I could'. 29% of participants agreed with this statement. There were no significant differences between groups. Post holders who felt that the role had increased their satisfaction (23%, n = 123) were less likely to agree with this statement than those without job satisfaction (71%, n = 36) and was statistically significant p = 0.00001. 89.4% (n = 549) felt their innovative role had enhanced job satisfaction. Reasons for this attitude stemmed from job independence; direct patient contact; enhancing and utilizing skills; opportunities to develop, change, and expand a service, and to be innovative and creative; variety; recognition. Dissatisfaction came from: not enough time; lack of support; stress and pressure of work; skills being under utilized. 68% (n = 415) felt the new role enhanced their career prospects.
			Nurse turnover as reasoned action: Development of a process model. Journal of Applied Psychology. 72 (2): 221-227, 1987. Prestholdt PH, Lane IL, Mathews RC.	N = 1,835 RNs working in one of 21 Louisiana hospitals, USA. Response rate = 942 of which 885 had complete data.	Ajzen & Fishbein's theory of reasoned action (1980).	Intention to leave – 2 items (remaining on the staff of this hospital and resigning from this hospital within 6 months). Subjective norm - 2 items Beliefs – 29 items. Moral obligation 2 items. Job opportunities – 1 item. Turnover – hospitals supplied information on the employment status of each nurse	Questionnaire developed from interviews with 109 nurses. Correlation. Hierarchical multiple regression	A total of 101 nurses (11.6%) resigned during the 6 month study. Intention to leave was the only significant predictor of turnover. The combination of predictors explained 68% of the variance. Attitude towards the behaviour, subjective norm and moral obligation were the only significant predictors of intention to leave. The best predictor of intention was attitude toward the behaviour which was seen as a function of the sum of behavioural beliefs. A principal components analysis of the 29 beliefs found 6 factors: 1. work environment 2. nursing practice 3. hygiene factors 4. opportunities available for resigning 5. physical/emotional costs (burnout) 6. negative job characteristics. These factors accounted for 64 of the 64% in the variance in attitude. 5 of the 6 factors showed significant differences between stayers and leavers. Only burnout showed no difference. Results supported theoretical model.

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			A review and meta-analysis of research on the relationship between behavioural intentions and employee turnover. Journal of Applied Psychology. 69 (4): 673-686, 1984. Steel RP, Ovalle NK.	N = 34 studies.	NA		Meta-analysis of studies that defined intent as intention to stay or quit.	Prior to 1974, few published references to behavioural intentions existed in industrial and organizational psychology literature. Since then study of behavioural intentions has exploded, due in part to the theoretical arguments that have singled them out as the most direct and immediate cognitive antecedent of overt behaviour. Models designed to summarise the turnover process have been developed from a number of different philosophical orientations (i.e. psychological, sociological) but most emphasise the prominence of affective, job market, and intentional factors in the turnover process. The meta-analysis supported research that modelled a causal order of decision making processes through affective variables through intentions to stay or quit which culminates in turnover behaviour. While Fishbein & Ajzen (1975) reported intent-behaviour relationships to be strong (0.80) in laboratory settings, correlations derived from field studies were much smaller. A moderator of this relationship was the time interval between the collection of predictor and attrition data (the shorter time span separating the measurement of intention and the behaviour, the more accurate the prediction will be).
			Causes of employee turnover: A test of Mobley, Griffeth, Hand and Meglino Model. Journal of Applied Psychology. 67 (1): 53-59, 1982. Michaels CE, Spector PE.	N = 180 employees of a USA community mental health centre. Response rate = 69% (124). Sampling method not stated.	Mobley et al's turnover model.	Job Diagnostic Survey (Hackman & Oldman, 1975). The Consideration subscale of the Leader Behavior Description Questionnaire (Stoghill, 1963). Job Satisfaction Survey (Micheals & Spector, author developed). Organizational Commitment Questionnaire (Mowday et al,1979). Perceived alternative employment – 1 item. Intention of quitting – 3 items (no timeframe included).	Questionnaire. Cross Sectional Survey. Correlation. Path analysis using several multiple regression procedures	54 (30%) of the staff had resigned from their jobs at the end of six months. Turnover was correlated directly with intentions (r = .41), organizational commitment (r = .61) and total job satisfaction (r= .68) as well as other variables but to a smaller degree. Salary, organizational level and tenure were unrelated to turnover or any other variable. Perceived alternative employment did not add anything to the model. The authors concluded that perceived alternative employment may act directly on the behaviour rather than through intention to quit i.e. if a person intends to quit a job, he/she would most likely quit when another job becomes available, therefore availability controls the behaviour in concert with intention to quit. The final model include 7 predictors accounting for 19% (R = .44) of the variance in turnover. Organizational and individual factors led to job satisfaction and organizational commitment, which led to intentions of quitting, which led to turnover. An overlap between job satisfaction and organizational commitment was found and organizational commitment did not add as much as job satisfaction to the model although differences were slight. The authors concluded that the results suggested a possible causal chain but the chain failed to account for a large amount of turnover variance.

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			Review and conceptual analysis of the employee turnover process. Psychological Studies. 86 (3): 493-522, 1979. Mobley WH, Griffeth RW, Hand HH, Meglino BM.	Not stated.	NA		Review of published literature on employee turnover.	Studies involving total job satisfaction indicate a negative relationship with turnover and the amount of variance accounted for is consistently less than 14%. Negative relationships between pay satisfaction and turnover were found with leavers reporting more negative relationships toward pay than stayers. Leavers reported significant increases in pay in their new jobs. 5 studies found no relationship between pay and turnover. A moderate and negative relationship overall was found between supervision and turnover. In 7 of nine studies peer group relations did not exhibit any significant results. Satisfaction with work itself (intrinsic value of work) was found to be consistent and negatively related to turnover. Behavioural intentions were positively related to turnover but account for less than 24% of variance. Authors considered that this may be due to the fact that intentions does not account for impulsive behaviour, perception and evaluation of alternatives. The more specific the behavioural intention statement and the less time between its measurement and the behaviour, the stronger the relationship should be. Analyses of the precursors to intention, was called for to generate knowledge of the psychology of turnover behaviour and more research is required. Multivariate studies found that intention to quit enhanced the prediction of turnover whether measured directly or in combination with precursors or correlates of turnover. Precise definitions of voluntary turnover were infrequent across the studies. It was noted that there is a clear advantage to using common satisfaction measures, however multiple measures were recommended.

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Propensity to leave	9	2	Specific determinants of intrinsic work motivation, burnout and turnover intentions: a study among nurses. Journal of Advanced Nursing. 29 (6): 1360-9, 1999. Janssen PPM, de Jonge J, Bakker AB.	N = 175 nurses employed in a general hospital in the Netherlands. Response rate = 89% (156). Sampling method not stated.	Development of a theoretical model based on the Conservation of Resources Theory (Hobfoll & Freedy, 1993).	Quality of Job Content. Author developed, based on Job Characteristics Theory (Lawler & Hall, 1970, Hackman & Lawler, 1971, Hackman & Oldman, 1980). Mental work overload (de Jong et al, 1993). Social support from colleagues (Bergers et al, 1986). Unmet career expectations (Brunck & Janssen, 1992). Intrinsic work motivation (War et al, (1979). Burnout – emotional exhaustion dimension of MBI (Maslach & Jackson, 1986). Turnover intention – 1 item. "Are you planning to leave the organization within 1 year."	Questionnaire Cross Sectional Survey. Correlation. Structural Equations Modelling.	The results of the correlation matrix showed that the hypothesized pattern of relationships largely holds true and that the relationships point in the expected direction. Intrinsic motivation is positively related to job content and was made up of job elements that make the work challenging and worth while such as skill variety, autonomy, social contacts and opportunities to learn. High EE is related to work overload (time pressure and strenuous work) and when there is little social support. The more career related expectations (higher salary and more responsibility) remain unrealized the stronger the intention to leave. The significant relationships between job content and turnover intention (substantial relationship), and between unmet career expectations and EE were not predicted (but this latter relationship is weak). The suggestion is that the more one dislikes one's job the more one is inclined to leave. These findings suggest that more accurate prediction regarding associations between several work factors and different outcomes are possible and can refine insights regarding these relationships generated by well known models. The authors suggested more attention could be paid to implementing job re-design e.g. primary nursing however see (Malkin, 1993) where no differences were found between nurses who worked with this model or didn't. EE can be reduced or prevented by paying attention to workload and the quality of social relations within an organization. Social support from colleagues and supervisors can be useful in reducing or preventing EE. It was suggested that job turnover can be prevented by improving opportunities for growth and job security e.g. job rotation, career counselling, career development.

Variable	Number of articles found	Number of articles meeting the inclusive criteria	Article title and author	Sample	Theoretical Framework	Measurement	Method	Findings
			Job satisfaction, propensity to leave and burnout in RNs and RNAs: a multivariate perspective. Canadian Journal of Nursing Administration. 7 (3): 43-64, 1994. Cameron SJ, Horsburgh ME, Armstrong-Stassen M.	N = 623 RNs and 231 RNAs (registered nursing assistants) from 3 Canadian community hospitals. Purposive, stratified sampling	The Person-Environment Fit Model (French, Caplan & van Harrison, 1982)	The Quality of Worklife Conditions (Saskin & Lengermann, 1987) The Index of Organisational Reactions (Smith, 1976). The Quality of Worklife Feelings (Saskin & Lengermann, 1987) Minnesota Satisfaction Questionnaire (Weiss, Dawis, England & Lofquist, 1967). The Burnout Scale (adapted from Maslach & Jackson, 1981) Propensity to Leave (Lyons, 1971).	Cross sectional survey Questionnaire Semi-structured Interview ANOVA Correlations Manifest content analysis and a constant comparative technique facilitated identification of themes.	Nurses were only moderately satisfied with jobs – their mean scores were lower than those reported for other types of employees. RNs with more years of experience were less burned out and less likely to leave their positions. Differences in job satisfaction, burnout and intent to leave were found between nurses working in different areas. The authors concluded that separate analyses should be conducted for RNs working in different types of units as treating RNs as a homogenous group may obscure unique issues for each group.

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Job satisfaction, burnout, and intent to leave	11	2	Nurse burnout and patient satisfaction. Medical Care. 42 (2) Suppl. II-57-II-66, 2004. Vahey DC, Aiken LH, Sloane DM, Clarke SP, Vargas D.	N = 820 RNs working in 40 units in 20 urban hospitals in the USA and 621 patients. Convenience sampling.	None stated.	The Revised Nursing Work Index (NWI-R) (Aiken & Patrician, 2000). Maslach Burnout Inventory (MBI). Intent to leave – single item	Questionnaire. Cross Sectional Survey. Descriptive. Correlation Logistic Regression	35.9% nurses intended to leave with 12 months. Average levels of burnout reported. Only EE and intention to leave were affected by the nurse work environment in regression analyses. Once demographics were controlled, nurses working in good environments had lower EE and intention to leave than those nurses working in poor ones. Patients in units with nurses with high EE and intent to leave were only half as likely to be satisfied with their nursing care.
			We are able and artful, but we're tired: Results from the survey of New Zealand hospital nurses. Unpublished Conference Proceedings, 2002. Gower SE, Finlayson MP.	N = 24 New Zealand hospitals with between 75 and 1600 nurses. Total sample not stated. Response rate = 4885 (37%). Hospital response rate = Between 29 and 48%/ Useable questionnaires = 4603 = 27% of RNs, ENs and midwives actively working in NZ public hospitals. Data collection occurred in 2001. Sampling method not stated.	None stated.	See Vahey et al.	Questionnaire. Cross Sectional Survey. Descriptive. Correlation.	Survey respondents were found to be representative of the New Zealand nurse population working in NZ public hospitals when age and ethnicity was compared. 87% of nurses perceive the quality of nursing care given to patients in the ward they work in to be good or excellent. 26% of nurse perceived that the quality of care in their hospital had deteriorated over the last year. 85% of nurses believe their relationships with doctors were good. Ward managers/Charge Nurses were perceived to be supportive but only 40% of nurses thought there were enough staff to get the work done and 43% thought there were enough nurses to provide quality care. 85% believed that a high standard of nursing care is expected by the employing organisation. However, only 37% thought management listened and responded to employee concerns. Only 23% believed they received a satisfactory salary. Both autonomy and nurse control over the patient care environment correlated with perceived deterioration in quality care (-.04). Organisational support correlates with perceived deterioration in quality care (-.05). 70% of nurses were satisfied with their job and being a nurse. However 34% indicated intent to leave their current job within 12 months and 68% of nurses thought it would be easy to another acceptable job in nursing. Job satisfaction was weakly and positively correlated with intent to leave (0.3) indicating that a variation in job satisfaction could explain 9% of variation in intent to leave within 6 months. Intent to leave was strongly and positively correlated with perceived ease of getting another job (0.6), explaining 36% of the variation. Deteriorating quality of care and job satisfaction strongly and negatively correlated (-0.7) explaining 49% of the variation in job satisfaction. Deteriorating quality of care was positively correlated with intent to leave with 6 months (0.4) explaining 16% of the variation. Autonomy and nurse control over the patient care environment correlate with job satisfaction (0.5) and organisational support correlates with job satisfaction at 0.6. High burnout was found in 21% of nurses, average burnout in 32% of nurses and low burnout in 46% of the nurses surveyed. Individual questions in the MBI suggested that the nurses felt that they have a lot to give the patients and the job but that they may be paying the price in terms of their health and wellbeing. The authors also concluded that the nurses believed that the level of institutional support provided to them in doing their work was inadequate.

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Job satisfaction and job stress and burnout and intentions	0	1	Advances in understanding and predicting nurse turnover. Sociology of Health Care. 15: 147-171, 1998. Lake ET.	N = All nursing staff on 40 units in 20 community hospitals located in high AIDS incidence USA cities. Total sample not stated. Response rate = 86% (680) RNs. Sampling method not stated.	Not stated.	Nursing Work Index (Kramer & Hafner, 1989).\n\nNursing Stress Scale (Gray-Toft and Anderson, 1981).\n\nMaslach Burnout Inventory (Maslach & Jackson, 1986).\n\nIntention to leave – 1 item (Do you have plans to leave your present nursing position?) with 4 response categories within 3 different time frames.\n\nJob duration.\n\nDemographic factors\n\nOrganizational factors	Questionnaire. Longitudinal. Proportional Hazards Regression model and Kaplan-Meier Survival Curves.	3/5ths of nurses did not intend to leave their current position. 25% planned to leave within one year. 13% intended to leave within 3 to 6 months. 1 in 10 actually resigned from their jobs within 1 year. Resignations accounted for 62% of all job terminations, 29% were transfers within the hospital and the remainder were terminations of agency or nurses on contract, or dismissals. The estimates for the time frames 3 versus 6 months were not significant and were collapsed to within 3 to 6 months but were different from 1 year and no intent. Results also indicated that the effect of the shortest term intention diminishes over time. Tenure, emotional exhaustion, job satisfaction, RN vacancy rate, and the presence of children at home were significant predictors of intentions. Burnout was more important than job satisfaction in predicting nurses' intentions. Intention to leave was lower where tenure was longer, satisfaction was higher, or there were children at home. Conversely, higher emotional exhaustion or higher RN vacancy rate increased intention to leave. Job satisfaction had a negative relationship with intention to leave, job stress a positive relationship (but not significant), emotional exhaustion had a positive relationship with intention to leave. Resignation was predicted from individual and organizational factors, job opportunity, autonomy and intention to leave. Intention to leave within 3 to 6 months was the strongest predictor of resignation. Increasing levels of autonomy and higher educational achievement was associated with increased hazard of resignation. An increase of .10 in the nurse to patient ratio cut resignation hazard by half in the proportional hazards regression but by .75 in the logistic regression. Autonomy was thought to operate as a career mobility factor i.e. a more professionalized workforce, and the presence of professional benefits were associated with higher turnover. McCloskey (1974) found that pay and working conditions were important for taking a job but professional self-actualisation was an important cause of turnover. Lake felt that highly clinically autonomous nurses may be taking their clinical autonomy to better jobs where they can give higher quality patient care.

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Job satisfaction and job stress and burnout and propensity	0	1	Respiratory Care. 37 (1): 46-60, 1992. Shelledy DC, Mikles SP, May DF, Youtsey	See above.				

Variable	Number of articles found	Number of articles meeting the inclusive criteria	Article title and author	Sample	Theoretical Framework	Measurement	Method	Findings
Job satisfaction Nurse job satisfaction	4385 45	7	Predicting registered nurse job satisfaction and intent to leave. Journal of Nursing Administration. 33 (5): 271-83, 2003. Larrabee JH, Janney MA, Ostrow CL, Withrow ML, Hobbs GR Jr, Burant C.	As above.				
			Job satisfaction of registered nurses working in an acute hospital. British Journal of Nursing. 11 (4): 275-280), 2002. Price M.	N = 351 English RNs Response rate 87% (N = 152) 11 questionnaires discarded. Final N = 141. Systematic sampling.	Maslow's Hierarchy of Needs	McCloskey Mueller Satisfaction Scale (Mueller & McCloskey, 1990).	Cross Sectional Survey Questionnaire Descriptive	58% of nurses were generally satisfied with their job. Satisfaction stemmed from nursing peers, annual leave and hours worked. Nurses were dissatisfied with childcare facilities, compensation for working weekends and control over work conditions. When ranked individual dissatisfiers other than control over work conditions were: level of encouragement; positive feedback; recognition for your work; and level of participation in organisational decision making. These factors were seen as being within managerial responsibility and influence.
			A content analysis of staff nurse descriptions of job satisfaction and dissatisfaction. Journal of Advanced Nursing. 26 (6): 1332-1341, 1999. McNeese-Smith D.	N = 30 RNs working in a university-affiliated hospital in California, USA. ? Convenience Sampling.	Results discussed in terms of Maslow's Hierachy of Needs.	None.	Semi-structured, audiotape interviews. Cross Sectional Survey. Content analysis.	The greatest source of job satisfaction was patient care and being able to provide good care. Other satisfiers include the working environment, a balanced workload, good relationships with co-workers, personal factors, salary and benefits, professionalism, cultural background, and career stage of the nurse. Dissatisfiers included issues emanating from patient care, factors that interfered with the job or patient care, feeling overloaded, relationships with co-workers, personal factors, organizational factors and career stage of the nurse. The author concluded that once salary and job security were met as satisfiers then nurses were able to meet family and personal needs while also gathering self-esteem from the praise of others and the professionalism of the job. At the highest level, job satisfaction was the result of a spiritual or self-actualizing connection achieved through the experience of patient care and through growth and achievement of professional potential. These satisfiers were explained in terms of Maslow's Hierarchy of Needs. Job dissatisfaction was seen to interfere with the attainment of these needs. The author noted that while quantitative studies supported these findings, these studies also focused only on the higher level needs e.g. organizational leadership, autonomy, self-actualization, growth and professionalism. In this study the major causes of satisfaction were patient care, the pace and variety of an acute care environment, relationships with co-workers and meeting personal and family needs. The major causes of dissatisfaction were feeling overloaded, factors that interfere with patient care, co-workers who do not give good care and situations that feel unfair.

Variable	Number of articles found	Number of articles meeting the inclusive criteria	Article title and author	Sample	Theoretical Framework	Measurement	Method	Findings
			Job satisfaction correlates among Palestinian nurses in the West Bank. International Journal of Nursing. 33 (4): 422-432, 1996. Ajamieh ARA, Misner T, Haddock KS & Gleaton JU.	N = 330 nurses employed in 25 acute care hospital nurses in Palestine. Response rate = 50% (165). Sampling method not stated.	Maslow's (1954) Hierarchy of Needs.	McCloskey Mueller Satisfaction Scale (Mueller & McCloskey, 1990).	Cross Sectional Survey Questionnaire Descriptive	52.7% of nurses reported being satisfied or very satisfied with their job using the MMSS. The range of global satisfaction scores was 53-144 (M = 98.6, SD 17.6) 3.0 was considered the neutral point. RNs were satisfied with 21 items and dissatisfied with 10 items. From highest to lowest satisfaction: responsibility; relationship with physicians; nursing peers; control over working conditions; flexibility in scheduling weekends off were the top 5 satisfiers. The least satisfying variables from lowest to highest were opportunity to publish, opportunity to participate in nursing research and child care facilities. Only 4 factors were identified from the factor analysis accounting for 36% of the variance and were labelled Interaction, Extrinsic Rewards, Control over Work Environment and Personal Achievement. The authors suggested rewording the items to reflect the words normally used for concepts e.g. physician – doctor and also recommended testing an instrument using an even number of response choices avoiding the middle category. It was argued that respondents are either satisfied or dissatisfied with an item and "no opinion" is not useful.
			Toward an international measure of job satisfaction. Nursing Research. 45 (2): 87-91, 1996. Misner TR, Haddock KS, Gleaton JU, Ajamieh ARA.	As above	As above	As above	As above Factor analysis	Based on Maslow's theory, McCloskey developed a 3 dimensional, 33 item nurse satisfaction scale. Factor analysis of data collected identified 8 factors and a 31 item scale (Alpha .89 for the global scale: .52-.89 for factor alpha's). The data from Palestinian nurses was used to determine the validity and reliability of the scale in a different culture. Only 4 factors were found which appeared to match the original (1974) scale. Extrinsic Rewards was similar to the safety dimension, Professional Participation matches psychological and Interaction parallels social rewards. A new factor emerged, Control over Work Environment. Conceptually professional participation is positively associated with personal control, responsibility and decision making. In this sample, a negative correlation existed between Control over work environment and Professional Participation. Control appeared to select items within the psychological construct (McCloskey, 1974) and self-actualisation as conceptualized by Maslow (1954). 5 items did not load on any factors.
			Nurses' job satisfaction: a meta-analysis of related variables. Nursing Research. 42 (1): 36-41, 1993. Blegen MA.	Individual sample sizes ranged from 30 to 1597 for a total of 15,048 subjects from 48 articles.	None	Not stated	Meta-analysis	Twenty variables were included from an initial list of 30 from quantitative research. Thirteen variables were used frequently: 4 personal (age, education, years experience and locus of control); 9 organizational or job attributes (stress, commitment, supervisor communication, autonomy, recognition, routinization, peer communication, fairness, and professionalism). Job stress had the strongest relationship to job satisfaction (-.609) followed by commitment (.526). Next 5 were communication with supervisors (.446), autonomy (.419), recognition (415), routinization (-.412) and communication with peers (.358). Further analyses that looked at difference across settings and year of publication found little difference. Satisfaction was measured by 21 different instruments.

Variable	Number of articles found	Number of articles meeting the inclusive criteria	Article title and author	Sample	Theoretical Framework	Measurement	Method	Findings
			Nurses' Job Satisfaction: A proposed measure. Nursing Research. 39: 113-117, 1990. Mueller CW & McCloskey JC.	N = 350 nurses hired by one US hospital between June 1983 and September 1984. Response rate = 91%. One year later 150 or 59% of those who had not resigned continued to participate. Sampling method not stated.	Maslows Hierarchy of Needs.	McCloskey/ Mueller Satisfaction Scale	Questionnaire Longitudinal Confirmatory factor analysis and Exploratory factor analysis.	31 items and factors were identified. Exploratory factor analysis was conducted when confirmatory factor analysis failed to confirm the theorized factors. An oblique rotation routine was used in conjunction with the maximum likelihood common factor analysis. A Kaiser eigenvalue criterion of 1 was used to determine the number of factors. 8 meaningful factors were identified from nine extracted factors. 1. Extrinsic Rewards 2. Scheduling 3. Family/work balance 4. Co-workers 5. Interaction opportunities 6. Professional opportunities 7. Praise and recognition 8. Control and responsibility. The 8 factors were meaningfully subsumed as subscales under McCloskey's 3 types of rewards. Safety rewards were captured by Extrinsic rewards, Scheduling and Family/work balance. Social rewards included co-workers and Interaction. Psychological rewards were represented by Professional opportunities, Praise and recognition, and Control and responsibility. Each subscale was constructed by summing only the items loaded on that factor or alternately summing the item scores and dividing them by the number of items. Four of the subscales had alphas of 0.70 or higher. The three subscales with fewer than 4 items had lower reliabilities typically found with a smaller number of items. The global scale which combined all 31 items had an alpha of 0.89. The test-retest correlations were consistently at the same level or lower than the alphas reflecting instability and change in what was being measured. Criterion validity was established through the use of the Brayfield-Rothe (1951) general job satisfaction scale and the Hackman and Oldman (1975) Job Diagnostic Survey. These scales were all positively correlated with the MMSS scale and factors. Construct validity was found through the use of these scales and with intent to stay on the job. Job satisfaction had a positive effect on intention to stay. With the exception of satisfaction with Family/work balance all other subscales were positively and significantly correlated with intent to stay.

Variable	Number of articles found	Number of articles meeting the inclusive criteria	Article title and author	Sample	Theoretical Framework	Measurement	Method	Findings
Job satisfaction and job stress	79	5	An analysis of the relationship between job satisfaction and job stress in correctional nurses. Research in Nursing & health. 25 (4): 282-94, 2002. Flannagan NA, Flannagan TJ.	N = 493 RNs employed in 36 units within the USA correctional system. Response rate 58% (N = 287) Sampling method not stated.	Stamps & Piedmonte's conceptualisation of job satisfaction based on Vroom's multiplicative need fulfilment theory and Maslow's Hierarchy of Needs. Selye's conceptualisation of stress.	Index of Work Satisfaction (Stamps & Piedmonte, 1986) Nurse Stress Index (Harris, 1989).	Questionnaire Cross Sectional Survey Non-experimental Correlation Multivariate Regression	Pay was the most important element of job satisfaction. Nurses were 3.4 times more likely to select pay across 5 paired comparisons. Autonomy was next most important in 2.9 of 5 paired comparisons. Reward components of job satisfaction were ranked from highest to lowest: interaction, professional status, autonomy, task requirements, pay and organisational policies. The mean score for stress was 80 (SD = 19.7) out of a possible 150. Difficult patients, decisions or changes which effect me are made 'above' without my knowledge or involvement, and trivial tasks interfere with my professional role were the 3 main stressors. Workload - time, a subscale of the NSI, was the highest contributor to stress. Stress and job satisfaction were negatively correlated. Stress accounted for 30.3% of the variance in job satisfaction.
			Factors influencing satisfaction and anticipated turnover for nurses in an academic medical center. Journal of Nursing Administration. 31 (4): 210-6, 2001. Shader K, Broome ME, Broome CD, West ME, Nash M.	N = 390 RNs Response rate 42% (5) nurse managers and (63%) 241 staff nurses employed in a 908 bed USA hospital. Sampling method not stated.	None	Index of Work Satisfaction (Stamps & Piedmonte, 1986) Job Stress Scale (Hinshaw & Atwood, 1985). Anticipated Turnover Scale (Hinshaw & Atwood, 1985).	Questionnaire Cross Sectional Survey. Descriptive Correlation Stepwise Regression	As job stress rose, job satisfaction lowered and anticipated turnover increased. Conversely the higher the job satisfaction, the lower the stress and anticipated turnover. Job satisfaction (-0.35) and job stress (0.16) were predictors of anticipated turnover (+ group cohesion (-0.13)) explaining 31% of the variability in anticipated turnover. Anticipated turnover was positively correlated with actual turnover (r = 0.24, P < 0.0001). Most nurses were young and had been in nursing < 3 years. Stability of scheduling had a moderate relationship with job satisfaction, stress and anticipated turnover.
			Identifying sources of stress and job satisfaction in the nursing environment. Australian Journal of Advanced Nursing. 17 (2): 30-5, 1999. Healy C, McKay M.	N = 129 nurses (120 Australian RNs and 9 ENs) employed in private or public hospitals, nursing homes or agencies. Convenience	Lazarus & Folkman's conceptualisation of stress	Job Satisfaction Scale of the Nurse Stress Index (Harris, Hingley & Cooper, 1988) Nursing Stress Scale (Gray-Toft & Anderson, 1981). Option of a written description of a stressful event	Questionnaire Cross Sectional Survey t-tests (difference between organisations) Descriptive Correlation Qualitative content analysis.	No differences between participants from different organisations for all measures were found. Workload was perceived as the most frequent source of stress, while lack of support and conflict with other nurses were the least frequent stressors. A negative correlations between job satisfaction and job stress (r = -.22, p <.05) was found. The majority of nurses were reasonably satisfied with their jobs but 67% (86 nurses) also reported that they had thought about finding another occupation other than nursing. Descriptions of stressful events implied an impact of the level of quality of care provided. Perceptions existed that nursing care was being compromised by both staffing levels and communications between staff members. While stressors were infrequent they were seen to cause distress and have long-term consequences i.e. intent to leave the profession.

Variable	Number of articles found	Number of articles meeting the inclusive criteria	Article title and author	Sample	Theoretical Framework	Measurement	Method	Findings
			The changing nature of nurses' job satisfaction: an exploration of sources of satisfaction in the 1990s. Journal of Advanced Nursing. 30 (1): 150-158, 1999. Tovey EJ, Adams, AE.	N = 825 Nurses employed in different Trusts in England. 265 nurses provided comments.	None	None	Qualitative Questionnaire and a page for comments Content analysis	Content analysis of nurses' comments generated a new conceptual framework for nurses' job satisfaction with 6 data categories: job content; resource issues; professional concerns; professional working relationships' emotional reactions to nursing; external pressures. The categories reflected most of the components of existing tools e.g. MMSS. New features were job content (pressures of taking on extra roles, role conflict, increased workload and paperwork). Professional concerns about standards of care and emotional reactions to nursing work and external pressures are not well represented in current tools. Dissatisfaction with pay was linked to local pay bargaining and different clinical grades of nurses had different sources of job satisfaction and dissatisfaction.
			Analysis of job satisfaction, burnout and intent of respiratory care practitioners to leave the field or the job. Respiratory Care. 37 (1): 46-60, 1992. Shelledy DC, Mikles SP, May DF, Youtsey JW	As above.				

Variable	Number of articles found	Number of articles meeting the inclusive criteria	Article title and author	Sample	Theoretical Framework	Measurement	Method	Findings
Job satisfaction and burnout	166	18	Nursing values and a changing workforce: values, age and job stages. Journal of Nursing Administration. 33 (5): 260-70, 2003. McNeese-Smith D, Crook M.	N = 412 RNs employed in 3 Los Angeles (USA) hospitals. Response rate = 52%. Random sampling.	None	Works Value Inventory (Super, 1970). Job Identity Questionnaire (Graham, 1970). Job in General Scale (Smith, Kendall & Hulin, 1975). Researcher developed questionnaire to measure productivity. The Organizational Commitment Scale (Porter, Steers, Mowday, Boulian, 1974).	Questionnaire Cross Sectional Survey Descriptive Correlation T-tests for differences between groups.	Lit review. Values influence the selection of priorities that are then acted on in our personal and professional lives. A lack of congruency between personal and organisational values decreases job satisfaction and work productivity and may lead to job burnout and turnover. No analysis of non-respondents was performed. Nurses with high values for economic returns had lower job satisfaction. Nurses who had high job satisfaction had significantly higher scores for values of associates, creativity, aesthetics and management. Nurses who rated their productivity highest had significantly higher scores for values of achievement, associates, creativity, aesthetics, independence, intellectualism, management, prestige, security, surroundings and variety. Disengaged nurses showed lower values for altruism and achievement. Disengagement from values and the job were seen as a normal way for employees to reduce stress. Values are a critical element of what motivates and rewards nurses.
			A systematic review of stress and stress management interventions for mental health nurses. Journal of Advanced Nursing. 42 (2): 169-200, 2003. Edwards D, Burnard P.	6 to 4925 Nurses employed in mental health in England.	Carson and Kuipers (1998) model	NA	Systematic review of literature	Seventy papers of 176 studies published between 1966 and 2000 met the inclusion criteria. Review is framed around Craons & Kuipers model which 3 levels of a stress process. The 3rd level of the model is that of stress outcomes which can be positive or negative. Positive stress outcomes can result in psychological health and high job satisfaction while negative stress outcomes include psychological ill health, burnout and low job satisfaction. The most frequently reported sources of stress were administration and organisational concerns, client related issues, heavy workload, interprofessional conflict, financial and resource issues, professional self-doubt, home/work conflict, staffing levels, changes in the health service, maintenance of standards, giving talks and lectures, length of waiting lists, and poor supervision. Factors associated with increasing stress levels were nursing status, job dissatisfaction, poor quality of social support, permanent day shift, being younger, longer length of service, reduced time for client contact, dissatisfaction with working conditions, level of responsibility, being female and working occasional night shifts. The reasons associated with leaving psychiatric nursing were low overall job satisfaction, dissatisfaction with perceived quality of decision made by those in managerial positions, dissatisfaction with the amount of inservice training offered, dissatisfaction with physical working conditions, burnout, Type A personality and being younger, less experienced and more highly qualified. Burnout was positively associated with role conflict, lack of staff support, lack of involvement in the organisation, poor job satisfaction and number of days taken off sick.

Variable	Number of articles found	Number of articles meeting the inclusive criteria	Article title and author	Sample	Theoretical Framework	Measurement	Method	Findings
			Job satisfaction among nurses: a predictor of burnout levels. Journal of Nursing Administration. 32 912) 648-54, 2002. Kalliath T, Morris R.	N = 340 USA nurses Response rate 60% (203). Sampling method not stated.	None	Maslach's Burnout Inventory (Maslach & Jackson, 1986). Katsell et al's (1992) Job satisfaction scale.	Questionnaire Cross Sectional Survey Structural Equations Modelling (tests for causal models).	The statistically non significant x² value obtained revealed a good overall fit of the proposed theoretical model with the data. Job satisfaction had a significant direct negative effect on emotional exhaustion (-0.97, P <.01), whereas emotional exhaustion had a direct positive effect on depersonalisation (0.60, P < .01). A significant indirect effect of job satisfaction on depersonalisation was also seen via emotional exhaustion (-.058, P < .01). The predicted direct effect of job satisfaction on depersonalisation was not obtained. The study confirmed that job satisfaction is a significant predictor of burnout in nurses. Higher job satisfaction can reduce burnout levels among employees. Golembiewski and Munzenrider argue that depersonalisation is the first manifestation of burnout, followed by reduced personal accomplishment. Then the two together contribute to emotional exhaustion. Higher levels of job satisfaction predict lower levels of job burnout among nurses and may work as an antidote to job burnout.
			Hospital staffing, organization, and quality of care: cross national findings. Nursing Outlook. 50 (5): 187-94, 2002. Aiken LH, Clarke SP, Sloane DM.	N = 10,319 nurses employed in 303 acute care hospitals in the USA, Canada, England and Scotland, who worked in medical and surgical units. Sampling method – not explicit. Response rate 42-53% across geographic jurisdictions	Conceptual model of the mechanisms by which organisational features of hospital affect patient and nurse outcomes.	Researcher developed Nurse Staffing measure Nursing Work Index (Aiken & Patrician, 2000). Nurse Job Satisfaction 4 point scale - author not stated. Maslach Burnout Inventory Quality of Care 4 point scale-researcher developed	Questionnaire Multisite Cross Sectional Survey Logistic Regression Models	No evidence of systematic biases created by non-response was found based on (unstated) demographic characteristics or variable scores. Between 34% (Scotland) and 54% (US) of nurses had burnout scores above published norms. Nurses working in hospitals with weak organisational support for nursing care were twice as likely to report dissatisfaction with their jobs and to have burnout scores above the norms for medical personnel. Both nurse staffing and organisational support had significant impacts on nurse-assessed quality of care. Hospital sites that provided the least organisational support for nursing care are most likely to be rated by nurses as providing low quality care. Better staffing was positively associated with higher nurse-assessed quality of care, although its effect was not as pronounced as the effect of organisation. The worst-staffed hospitals were 1.3 times as likely as the best staffed hospitals to rate the quality of care as fair or poor, once organisation is controlled. Nurses in hospitals observed to have the lowest levels of support for nursing care were more than twice as likely to rate the quality of care on their units as fair or poor.

Variable	Number of articles found	Number of articles meeting the inclusive criteria	Article title and author	Sample	Theoretical Framework	Measurement	Method	Findings
			Hospital nurse staffing and patient mortality, nurse burnout and job dissatisfaction. JAMA. 288 (16): 1987-93, 2002. Aiken LH, Clarke SP, Sloane DM, Sochalski J, Silber JH. Harrington D, Bean R, Pintello D, Mathews D.	As above. USA	None stated	Discharge data for surgical patients – patient deaths within 30 days of admission. Nurse staffing measure (mean patient load across all RNs who reported having responsibility for between 1-20 patients on the last shift they worked). Three hospital characteristics: size, teaching status and technology.	As above	50% of the hospitals had patient to nurse ratios that were 5:1 or lower and those hospitals employed 64.4% of the nurses and discharged 65.7% of the patients. 43% of nurses had high burnout scores and were dissatisfied with their jobs. Higher emotional exhaustion and greater job dissatisfaction were significantly associated with patient to nurse ratios. The final adjusted odds ratio indicated that an increase of 1 patients per nurse to a hospitals staffing level increased burnout and job dissatisfaction by factors of 1.23 (95% CI, 1.13-1.34) and 1.15 (95% CI, 1.07-1.25) respectively or by 23% and 15%. Although 43% of nurses reported high burnout and are dissatisfied with their jobs intend to leave their current job within 12 months, only 11% of nurses not burned out and who remain satisfied with their jobs intend to leave. The odds of patient mortality increased by 7% for every additional patients in the average nurses workload and that the difference from 4 to 6 and 4 to 8 patients per nurse would be accompanied by 14% and 31% increases in mortality respectively. These effects imply that substantial decreases in mortality could result from increasing registered nurse staffing, especially for patients who develop complications.
			Stress and the effects of hospital restructuring in nurses. Canadian Journal of Nursing Research. 33 (2): 93-108, 2001. Greenglass ER & Burke RJ.	N = 3,892 Canadian hospital nurses. Response rate 35% (1,363). Random sampling.	Stress and coping framework – author developed.	Maslach Burnout Inventory Impact of restructuring scale (author developed) Job satisfaction (Quinn & Shepard, 1974) Hopkins Symptom Checklist (derogates et al, 1979) Restructuring initiatives (author developed) Work stressors (author developed) Coping scale (Latack, 1986)	Questionnaire Cross sectional Survey Descriptive Correlation Hierarchial Multiple Regression.	Three stressors of workload, bumping (junior staff replacing senior staff), and the use of unlicensed personnel were positively related to burnout and psychosomatic outcomes (depression and anxiety). Increased workload was the most significant and consistent predictor of stress among nurses in hospitals being downsized. The greater the workload, the greater the impact of restructuring and the greater the nurse's emotional exhaustion, cynicism, depression and anxiety. Increased workload was also associated with decreased job satisfaction, professional efficacy, and job security.

Variable	Number of articles found	Number of articles meeting the inclusive criteria	Article title and author	Sample	Theoretical Framework	Measurement	Method	Findings
			Impact of magnet hospital characteristics in nurses' perceptions of trust, burnout, quality of care and work satisfaction. Nursing Economics. 19 (5): 209-19, 2001. Laschinger HKS, Shamian J, Thompson D.	N = 3,016 nurses employed in medical/surgical settings in 135 Canadian hospitals. N = subset of larger sample. Total sample not stated. Stratified random sampling.	Aiken et als conceptual framework.	Nursing Work Index (NWI) Interpersonal Trust at Work Scale (Cook & Wall, 1980) Maslach Burnout Inventory	Questionnaire Cross Sectional Survey Descriptive Structural Equation Modelling	Nursing work environment characteristics affected job satisfaction indirectly in 2 ways: 1. through emotional exhaustion 2. through trust in management. Higher levels of autonomy, control and collaboration were associated with higher levels of trust in management (0.56) which in turn was associated with higher job satisfaction (0.17). Positive work environment characteristics were associated with lower burnout levels (-0.62) which in turn were associated with higher job satisfaction (-0.55). The amount of explained variance was 39% in the final model. The results suggest that both trust in management and emotional exhaustion are important mediators of job satisfaction and perceptions of quality. The authors concluded that it was important to create environments which empower nurses to accomplish their work and generate positive feelings about their work and its effects on patient outcomes. These findings were consistent with Aiken's theory and previous findings in magnet hospital research.
			Nurses' reports on hospital care in five countries: the ways in which nurses' work is structured have left nurses among the least satisfied workers, and the problem is getting worse. Health Affairs. 20 (3): 43-53, 2001. Aiken LH, Clarke SP, Sloane DM, Sochalski JA, Busse R, Clarke H, Giovannetti P, Hunt J, Rafferty AM, Shamian J.	N = 43,000 nurses employed in 700 hospitals in the USA, Canada, England, Scotland and Germany. Sampling method not stated.	None stated.	Nursing Work Index	Questionnaire Cross Sectional Survey Descriptive	40% of nurses in the US were dissatisfied with their jobs which was much higher than other groups of workers in the US. Significant numbers of nurses (between 30% and 40%) in all countries except Germany had high scores of emotional exhaustion relative the norms for medical workers. More than 3 in 10 nurses in England and Scotland and more than 2 in 10 nurses in the US planned on leaving their jobs within the year. Only 30-40% of nurses reported that there were enough RNs to provide high quality care and enough staff to get the work done. The proportion that perceived that support services are adequate was only slightly higher. Fewer than half the nurses in each country reported that management in their hospitals were responsive to their concerns, provided opportunities for nurses to participate in decision making and acknowledged nurses contributions to patient care. 75% of UK nurses felt their pay was inadequate while nurses in Canada (70%), US (60%) were satisfied with pay.

Variable	Number of articles found	Number of articles meeting the inclusive criteria	Article title and author	Sample	Theoretical Framework	Measurement	Method	Findings
			A test of the Maslach Burnout Inventory in three samples of healthcare professionals. Work & Stress. 14 (1): 35-50, 2000. Kalliath TJ, O'Driscoll MP, Gillespie DF, Bluedorn AC	N = 263 nurses, 199 laboratory technicians and 233 managers employed in a general community hospital in the USA. Response rate: 197 nurses 113 hospital laboratory technicians 135 managers. Sampling method not stated.	The conceptualisation of burnout underpinning the MBI	Maslachs Burnout Inventory (Maslach & Jackson, 1986). 4 items were taken from the Michigan Organisational Assessment Questionnaire Cammmann, Fichman, Jenkins & Klesh, 1983) and the Overall Job Satisfaction Instrument (Quinn & Staines, 1979) to measure overall job satisfaction. Satisfaction with Supervisor – 6 item version of the Index of Organisational Reactions Satisfaction with Supervisor Scale (Smith, 1976) Satisfaction with co-workers – 5 item scale version of the scale above. Organisational Commitment Scale (Mowday et al) Staying or Leaving Index (Bluedor, 1982). Job Search Behavior Index (Kopelman, Rovenpor, and Millsap, 1992).	Questionnaire Cross Sectional Survey Correlation Structural Equation Modelling	The 3 factor structure of the MBI was not confirmed. The performance of personal accomplishment compromised the overall fit of the measurement model and was eliminated and a 2 factor model was obtained that fitted the data well. Reliability co-efficients in the 3 samples were high. Significant positive correlations were obtained with turnover intentions and job search while statistically significant correlations were obtained with overall job satisfaction, satisfaction with supervisor, satisfaction with co-workers an organisational commitment. Emotional exhaustion was the most robust of the 3 original factors of the MBI. The results were consistent with other research that argued that emotional exhaustion represents the essence of burnout.

Variable	Number of articles found	Number of articles meeting the inclusive criteria	Article title and author	Sample	Theoretical Framework	Measurement	Method	Findings
			Predictors of job satisfaction, turnover, and burnout in female and male Jordanian nurses. Canadian Journal of Nursing Research. 31 (3): 15-30, 1999. Al-Ma'aitah R, Cameron S, Horsburgh ME, Armstrong-Stassen M	N = 479 Jordanian RNs Females = 327 (68%) and Males = 152 (32%) Response rate = 77%. Sampling method not stated.	The Person-Environment Fit Model (French, Caplan & van Harrison, 1982)	The Quality of Worklife Conditions (Sashkin & Lengermann, 1987). The Index of Organizational Reactions (Smith, 1976). The Minnesota Satisfaction Questionnaire (Weiss, Dawis, England & Lofquist, 1967). The Burnout Scale (adapted from Maslach & Jackson, 1981). Propensity to Leave (Lyons, 1971)	Questionnaire Cross Sectional Survey ANOVA Hierarchical Multiple Regression	The first Hierarchial MR equation examined the relative influence of the predictor variables on female and male job satisfaction. Women: job enhancing characteristics, satisfaction with supervision, and career future (43% explained). With the exception of job enhancing c. men were the same (60% explained). The second equation was the contribution of independent variables on propensity to leave. Women who were least satisfied with the work they did, their physical work conditions and career future were more likely to consider leaving their jobs. Men who identified less strongly with their hospital of employment and perceived lack of satisfaction with career future were more likely to want to leave. Explains 50% for both men and women. The third equation looked at burnout. Female nurses who reported more family stress, less job enhancing characteristics and less satisfaction with kind of work, co-workers and career future reported greater feelings of burnout (explains 30%). The only predictor of burnout for males was low satisfaction with kind of work (explains 23%). Overall satisfaction with job characteristics and organizational characteristics had the most significant impact on all outcome variables in the study lending support for Irvine and Evans (1995) findings on the importance of these factors on the quality of work life. It also supports the conceptual model that when nurses experience a good fit between their needs and work supplies/demands they report greater job satisfaction and lower levels of burnout and turnover. Job enhancing characteristics (autonomy, decision making, and personal growth) as a significant predictor of job satisfaction and burnout in female nurses reflect the powerlessness of Jordanian nurses. Powerlessness has been reported as an important contributor to burnout while autonomy has been found to be a key contributor to job satisfaction (Mueller & McCloskey, 1990).
			Burnout in psychiatric nursing: a meta-analysis of related variables. Journal of Psychiatric & Mental Health Nursing. 4 (3): 193-201, 1997. Melchior MEW, Bours GJJ, Schmitz P, Wittich Y.	Published and unpublished studies from 1974-1994. 33 articles identified and 9 met inclusion criteria. 3 articles were psychiatric nurse specific. MBI was used to measure in all studies except 1.				43 variables were investigated in relation to burnout. Only published studies were included in the meta-analysis. 4 variables had separate estimates and were analysed further. Job satisfaction had the highest corrected correlation with burnout. Job satisfaction, staff support and involvement with the organisation showed negative correlations with burnout while role conflict showed a positive correlation. None of the confidence intervals contained zero, so all correlations were significant. The authors cited the difference betweens tress and burnout. Burnout was seen to be demonstrated by a person who was failing in their job and unable to adapt without outside help whereas a person suffering from stress is one that is able to adapt.

Variable	Number of articles found	Number of articles meeting the inclusive criteria	Article title and author	Sample	Theoretical Framework	Measurement	Method	Findings
			Factors in stress and burnout among paediatric nurses in a general hospital. Nursing Praxis in New Zealand. 11 (3): 38-46, 1996. Watson P, Feld A.	N = 26 paediatric nurses working in an acute care New Zealand hospital. Response rate = 54% (14) Sampling method not stated.	None stated.	Maslachs Burnout Inventory

The Nursing Situations Questionnaire (modified from the Nursing Stress Scale (Gray-Toft & Anderson, 1981).

The Hopkins Symptom List (Green et al, 1988). | Questionnaire Cross Sectional Survey Descriptive Content analysis – themes and frequency | Average scores for emotional exhaustion and personal accomplishment and low scores for depersonalisation were found. Overall stress was not stated. Conflict with a doctor, not enough time to provide emotional support to a patient and performing procedures that patients experience as painful were the most frequent stressors for the paediatric nurses. The highest scoring subscales for most frequent stressors were: conflict with doctors, workload, inadequate preparation and death and dying. The two subscales that contributed the least to nurses were lack of support and conflict with other nurses. Open ended questions confirmed that workload and staffing were the sources of the greatest stress on the job. Conflict with doctors was the second most common recurring theme. Nursing staff suggested that more nursing and medical staff would reduce work related stress. Nurse also suggested more support for staff and more opportunities for professional development. The most important satisfier for the nurses was their relationships with the children they cared for and their families. |
| | | | The Claybury community psychiatric nurse stress study: is it more stressful to work in hospital or the community? Journal of Advanced Nursing. 22(2): 347-58, 1995. Fagin L, Brown D, Bartlett H, Leary J, Carson J. | N = 250 Community Psychiatric Nurses (CPNs) from 15 of 16 units in East Thames, England and 323 Ward-base Psychiatric Nurses (WBPNs) from 7 psychiatric hospitals in the same region. Response rate not reported. Sampling method not reported. | None stated. | Demographic questionnaire

CPN stress questionnaire (revised) (authors not stated).

General Health Questionnaire (Goldberg & Williams, 1988).

Maslach Burnout Inventory, Maslach & Jackson, 1996).

Rosenberg self-attitude scale (Rosenberg, 1965).

Minnesota Job Satisfaction Scale (Koelberg et al, 1991).

Coping Skills Questionnaire (Cooper et al, 1988). | Questionnaire Cross Sectional Survey Descriptive Stepwise Linear Regression | Significant differences between CPNs and WBPNs were detected in depersonalisation and personal accomplishment but no difference in emotional exhaustion scores (EE). 48% of CPNs and 44% of WBPNs had high EE scores. CPNs had higher job satisfaction explained by factors intrinsic to their profession: a sense of achievement, recognition for their effort, and the degree of responsibility they felt they had. No significant difference was observed in extrinsic factors e.g. pay and job status. The level of EE in the WBPNs was effectively reduced by means of social support. |

Variable	Number of articles found	Number of articles meeting the inclusive criteria	Article title and author	Sample	Theoretical Framework	Measurement	Method	Findings
			Determinants and consequences of burnout: a cross-cultural comparison of Canadian and Jordanian nurses. Health Care for Women International. 15 (5): 413-21, 1994. Armstrong-Stassen M, Al-Ma'aitah R, Cameron S, Horsburgh M.	N = 586 Canadian RNs and 263 Jordanian RNs working in hospitals in each country. Response rate not stated. Sampling method not stated.	None stated.	Index of Organisational Reactions (Dunham et al, 1977). Maslach Burnout Inventory Propensity to Leave (Lyons, 1971). Demographic variables.	Questionnaire Cross Sectional Survey Path analysis of theorised model.	The authors outlined the arguments regarding the appropriateness of cross cultural studies and concluded that it may not be possible to develop one international theory of nursing that would be generalizable, but it may be that there are certain theoretical frameworks that are universally applicable. They proposed that burnout may be a universal phenomenon and was consistent in its relationships with job satisfaction and intent to leave. Both samples were dissatisfied with most of the dimensions of their jobs as evidenced by low mean scores. The only differences were that Canadian nurses appeared to be moderately satisfied with their level of supervision (Jordanian nurses were moderately dissatisfied) and Jordanian nurses were moderately dissatisfied with their physical work conditions but Canadian nurses were not. Job satisfaction was negatively related to emotional exhaustion, depersonalisation and lack of personal accomplishment and intention to quit. Emotional exhaustion, depersonalisation and lack of personal accomplishment were positively related to intention to quit with the strongest relationship between emotional exhaustion and intent to quit. The hypothesised relationships accounted for 69% of the variance for the Canadian sample and 62% of the variance for the Jordanian sample. The significant determinants of emotional exhaustion for both samples were the same: kind of work, amount of work, and career future. The significant predictors of intent to quit in Canadian nurses were hospital identification, kind of work, career future and emotional exhaustion. The significant predictors of intent to leave in Jordanian nurses were amount of work, physical work conditions, career future, and emotional exhaustion. Powerlessness was seen as a crucial factor in burnout especially when nurses perceived that they had little control over their jobs. The authors suggested that this may be due to the historical and patriarchal relationship between nurses and physicians. However, Aiken et al found that relationships with management were more likely to cause job dissatisfaction and organisational factors contributed to burnout.
			Analysis of job satisfaction, burnout and intent of respiratory care practitioners to leave the field or the job. Respiratory Care. 37 (1): 46-60, 1992. Shelledy DC, Mikles SP, May DF, Youtsey JW	See above.			.	

Variable	Number of articles found	Number of articles meeting the inclusive criteria	Article title and author	Sample	Theoretical Framework	Measurement	Method	Findings
			The relationship between burnout and job satisfaction in nurses. Journal of Advanced Nursing. 12 (1): 3-12, 1987. Dolan N.	N = 90 (30 psychiatric nurses, 30 general staff nurses, 30 administrative staff) employed in 9 Dublin (Ireland) hospitals. Response rate = 95% (86). Sampling method not stated.	None stated.	Maslach Burnout Inventory (Maslach & Jackson, 1979). Author developed job satisfaction scale with open ended questions.	Questionnaire. Cross Sectional Survey. T-tests. Correlation	Job satisfaction was a reliable indicator of burnout. An inverse relationship between job satisfaction and burnout was found (r = 0.433. P $\leq$ 0.05). Overall administrative staff were more satisfied and less burnout than either the psychiatric or general staff nurses. The general group of staff nurses scored higher than the psychiatric group on burnout but this difference was not significant. No significant differences were found between the two groups of nurses on any of the MBI subscales but significant differences were found between the general group of nurses and the administrative group for emotional exhaustion, depersonalisation and personal accomplishment.

Variable	Number of articles found	Number of articles meeting the inclusive criteria	Article title and author	Sample	Theoretical Framework	Measurement	Method	Findings
Job satisfaction and intent to leave	21	6	Predicting registered nurse job satisfaction and intent to leave. Journal of Nursing Administration. 33 (5): 271-83, 2003 May. Larrabee JH, Janney MA, Ostrow CL, Withrow ML, Hobbs GR Jr, Burant C. Nurses' job satisfaction, organizational commitment, and career intent. Journal of Nursing Administration. 32 (5): 250-63, 2002. Ingersoll GL, Olsan T, Drew-Cates J, DeVinney BC, Davies J.	See above.				

Variable	Number of articles found	Number of articles meeting the inclusive criteria	Article title and author	Sample	Theoretical Framework	Measurement	Method	Findings
			The effects of nurses' job satisfaction on retention. An Australian perspective. JONA/ 32 (5): 283-291, 2002. Cowin L.	N = 870 3rd year nursing students (Group 1) and 2000 nurses employed in Australia (Group 2). Response rate = (Group 1) 506 (58%) and (Group 2) 528 (26.4%). Sampling method not stated.	Not stated.	Index of Work Satisfaction (Stamps, 1997). Open ended question " Please write any comments you would like to make about your nursing experience." Nurses Retention Index (developed and tested by author).	Questionnaire Longitudinal Descriptive Correlation Content analysis of open ended question. Factor analysis of NRI	The NRI was tested at Time 2. Content and construct validity and reliability testing, and confirmatory factor analysis led to the modification of the tool from an 8 item tool to a 6 item one factor congeneric model. Pay was the least satisfying job attribute for both student and experienced nurses particularly in light of their education fees which had to be repaid once the nurses started work. Nurses felt their level of education, skill, knowledge and responsibility was not reflected in their pay rates and appeared to impact on attitudes towards remaining in nursing. Professional status was rated as the most satisfying component. The findings indicated that the greater the satisfaction with professional status the more likely the intent to stay in nursing. Nurses were positive about staying in nursing but many written comments indicated burnout, excessive stress and a perception of a poor public image. It was also expected that new graduates retention plans would exceed experienced nurses but this was not evident. The graduate group rated their retention plans as less than the experienced group highlighting the dissatisfaction with various aspects of nursing work which have an impact on retention.
			Testing the stress-response sequence model in paediatric oncology nursing. Journal of Advanced Nursing. 28 (5): 1146-57, 1998. Hinds PS, Sanders CB, Srivastava DK, Hickey S, Sayawardene D, Milligan M, Olson MS, Puckett P, Quargneneti A, Randell EA, Tyc V.	As above.				
			Job satisfaction and organizational attachment of nurses holding doctoral degrees. Nursing Research. 46 (3): 163-71, 1997. Gurney CA, Mueller CW, Price JL.	As above.				

Variable	Number of articles found	Number of articles meeting the inclusive criteria	Article title and author	Sample	Theoretical Framework	Measurement	Method	Findings
			Analysis of job satisfaction, burnout and intent of respiratory care practitioners to leave the field or the job. Respiratory Care. 37 (1): 46-60, 1992. Shelledy DC, Mikles SP, May DF, Youtsey JW.	See above.				

Variable	Number of articles found	Number of articles meeting the inclusive criteria	Article title and author	Sample	Theoretical Framework	Measurement	Method	Findings
Job satisfaction and intentions	26	11	The psychological contracts of National health Service nurses. Journal of Nursing Management. 11: 107-120, 2003. Purvis LK, Cropley M.	Stage 1. N = 21 nurses employed in a London teaching hospital. Stage 2. N = 223 nurses of varied grades from 2 London hospitals (England). Sampling method not stated.	Barnard (1938) terms of exchange. Cavanagh (1996) psychological contracts (a sophisticated set of expectations and rules which form the psychological basis for continuing commitment of an employee to their employee)	A survey using Q sort constructs was developed. Psychological Contract Scale (Millward & Hopkins, 1998). Job and Organizational Satisfaction (Kunin, 1955). Absenteeism – 1 item. Intent to leave – not stated.	Interviews. Cross Sectional Survey. Q sort analysis using the Repertory Grid Technique. Content analysis.	29 themes were identified and independently agreed. *Working relationships* (with managers and colleagues) and *value and recognition* were the 2 most important aspects of the exchange relationship for nurses in the sample. Also important were factors relating to one's development (career development and training, promotion and appraisal), support (from colleagues and managers), job satisfaction and working conditions. Almost half the respondents had not been absent from work in the last 3 months. The majority (54.7%) did not give a reason for their absence. 47.1% stated they would leave if something better turned up, 29.6% would leave if an exceptional opportunity turned up, 12.6% said they would stay as long as possible and 10.8% intended to leave asap. Nurses were neither satisfied nor dissatisfied but were more satisfied with their job than the organisation. 4 factors were identified: development and achievement (26.1% of variance), collegiality and competence (15.9%), autonomy (10.4%) and security and belonging (8.5%). Most dissatisfaction was derived from lack of rewards (relative to inputs) and high stress levels. Nurses were dissatisfied with pay and conditions of work but this was not associated with leaving intentions. Leaving intentions were dependent on what nurses wanted from their exchange relationship which went beyond the fulfilment of basic hygiene needs, and whether these wants are satisfied. Nurses with a low score on the relational subscore rather than a high score on the transactional subscore had leaving intentions. A low score on the relational subscore was associated with endorsement of the autonomy profile, lower qualifications, being single and having low organizational satisfaction. Such nurses may feel their input and contribution are not recognised or rewarded sufficiently enough for them to stay.

Variable	Number of articles found	Number of articles meeting the inclusive criteria	Article title and author	Sample	Theoretical Framework	Measurement	Method	Findings
			New Zealand nurses' career plans. An investigation into job choices, job satisfaction and educational choices. 2002. CPIT Publishing Unit: Christchurch. Cobden-Grainge F, Walker J.	N = 800 nurses who entered the New Zealand register in 1998. Response rate = 37.5% (300 but 80 were unusable). Random sampling.	None stated.	Career pathways: careers after qualifying as a registered nurse questionnaire (Robinson, Murrell & Marsland, 1997.	Questionnaire Cross Sectional Survey Descriptive	66% were satisfied with rostered days off but only 42% of nurses were satisfied with combining work hours with social life and only 22% were satisfied with combining work hours with responsibilities for children. Only 42% of nurses were satisfied with the ratio of permanent staff to agency staff. It was felt that more experienced staff were need to provide a more realistic cover of workload and a better quality of care. There was moderate satisfaction with availability of supplies (63%). 53% of nurses were dissatisfied with their pay and only 33% were satisfied. 73% of nurses felt it was important that pay was acceptable to their level of responsibility and 67% stated loudly and clearly that better pay was essential. 70% were satisfied with the time they spent on patient care but only 53% were satisfied with the opportunity to provide good quality care, with 30% dissatisfied. 75% of nurses felt that quality care had declined in the last 2 years due to inadequate staffing. 65% of nurses were satisfied with the support they received from nurses working at the same grade but only 54% were satisfied with support received from charge nurses/unit manager. 56% of nurses were satisfied with opportunities to go to professional development education. Results showed that these nurses were very mobile. 68% were in their 2nd job and only 24% planned to stay in their current job for the next 12 months and 37% were staying for 12 months or longer but only 3% indicated they would stay for the rest of their working life. 44% of nurses planned to travel outside NZ. 68% of nurses stated it was likely they would be in nursing in NZ in 3 years. The group most likely to stay was the older nurses (78%) compared to the younger group (60%). The likelihood of younger nurses staying over time decreased from 72% at 12 months to 60% at 3 years to 54% at 5 years, with 46% at 10 years. Overall, 61% of nurses indicated they would be likely to stay nursing in NZ in 5 years time but only 50% of the sample said they would stay for 10 years.
			The relationships among turnover intentions, professional commitment, and job satisfaction of hospital nurses. Journal of Professional Nursing. 18 (4): 214-9, 2002. Lu K, Lin P, Wu, C, Hsieh Y, Chang Y.	As above.				

Variable	Number of articles found	Number of articles meeting the inclusive criteria	Article title and author	Sample	Theoretical Framework	Measurement	Method	Findings
			The NHS plan: nurse satisfaction, commitment and retention strategies. Health Services Management Research. 15: 93-105, 2002. Newman K, Maylor U.	N = 124 nurses working in 2 district general hospitals and 2 inner London Teaching hospitals in England. Convenience sampling.	None stated.	Questions for the interview were piloted with 7 nurses in 1 hospital. Questions were a mixture of open and closed questions plus 2 questions inviting respondents to score themselves on a variety of factors.	Semi structured interviews. Exploratory qualitative study.	Highest dissatisfaction was consistently related to shortage of staff, 2nd highest was dissatisfaction with poor management. Staff shortages meant overwork and frustration from being unable to satisfy personal standards of care. For the organization, the consequences were adverse repercussions on quality of patients care, professional education and training, staff retention and recruitment. Overwork and unpaid overtime, excess responsibility, lack of supervision and support of inexperienced staff hit motivation and morale hard. Poor management was described in terms of delays in decision making and general disorganization, human resource management (including failure to deal with claims of bullying and poor discipline, lack of recognition and support of staff, family unfriendly work hours) and management style, (being uncaring, remote and highly demanding and unsupportive. Nurses reported an increase in patients raised expectations, verbal abuse and complaints over recent years at the same time as nurses' ability to offer care was being undermined by staff shortages, insufficient and inadequate communications between doctors and patients, lack of resources & lack of support from management and doctors. 60% of nurses had thought of leaving their organization and 56% had thought of leaving nursing. Poor working conditions, poor management and poor pay were cited as triggers for leaving The study was conducted in a context of 17-20,000 unfilled vacancies. Better working conditions followed by better pay and better management outranked improved education & training, and better career prospects as the best retention strategies by nurses. This was explained in terms of Vroom's Theory of Expectations which established the idea of a trade-off between pay & working conditions, and states that dissatisfaction with pay becomes a proxy for poor and deteriorating working conditions. A retention chain was developed from nurses interviews. The health service determines 'service capability → service capability → nurses' satisfaction and morale; nurse satisfaction → nurse retention, nurse retention → the quality of patient care, quality of patient care → patient satisfaction and nurses satisfaction.

Variable	Number of articles found	Number of articles meeting the inclusive criteria	Article title and author	Sample	Theoretical Framework	Measurement	Method	Findings
			Improving nurse retention in the National health Service in England: the impact of job satisfaction on intentions to quit. Journal of Health Economics. 20: 677-701, 2001. Shields MA, Ward M.	N = ? Response rate = 62% (14,400). 1 in 3 stratified sampling of all permanent nursing staff from 91 NHS employers in England. Final sample was 9625 RNs and ENs.	None stated.	PSI survey. Author or reference not stated.	Questionnaire. Cross Sectional Survey. Descriptive. Cross Tabulations. Maximum Likelihood modelling.	96% of nurses reported entering nursing in search of 'rewarding work', 87.5% for' job security' reasons, 84.4% to 'help others in the community'. 76.3% for 'promotion prospects', 65.5% for 'pay' and 47.7% for 'flexibility of working hours'. These were described as work values in the context of the study. Only 49.7% of nurses were satisfied overall with their job. Dissatisfaction stemmed from (from highest to lowest): amount of administration, promotion prospects, employment security, amount of time for clinical duties. The majority of nurses were satisfied with colleagues and relations with patients. Job dissatisfaction was strongly associated with intention to quit, with nurses who are very dissatisfied being significantly more likely to report intention to quit than satisfied nurses. In addition, 40% of nurses reporting overall satisfaction with their job indicate an intention to leave the organization in the next 3 years indicating that other factors are important in determining quitting intentions. Absolute wages were positively related to job satisfaction while increased working hours negatively affect job satisfaction. The largest negative determinant of overall job satisfaction is not being graded (and therefore not being paid fairly) in accordance with ones' duties. Not working preferred shifts was the second major dissatisfier. Nurses who stressed non-pecuniary aspects of the job indicate higher overall job satisfaction. Those nurses emphasising pecuniary aspects of the job report lower but not significantly lower overall job satisfaction .Nurses reporting to be very dissatisfied with their job overall are 65% more likely to hold intentions to quit than those reporting to be satisfied, with the probability of intending to quit decreasing with successively higher job satisfaction. The model predicted turnover to be greatest for nurses under the age of thirty. The stayer effect was largest in the over 40's. Nurses who had outside opportunities, particularly those who are younger, more highly educated and have the higher grades were more likely to report intention to quit. These nurses were seen to make up the some of the most valuable to the nursing profession, in that they were the most experienced and also the replacements for older nurses. The authors concluded that career advancement opportunities, workload, workplace relations and pay were statistically significant in the job satisfaction model while controlling for outside labour and non-labour market opportunities in the determination of quitting intentions. Dissatisfaction with career advancement opportunities had the largest quantitative effect.

Variable	Number of articles found	Number of articles meeting the inclusive criteria	Article title and author	Sample	Theoretical Framework	Measurement	Method	Findings
			Factors influencing the retention and turnover intentions of registered nurses in a Singapore hospital. Nursing and Health Sciences. 2: 113-121, 2000. Chan E, Morrison P.

Words and actions: a study in nurse wastage. International Journal of Nursing Studies. 29 (2): 163-75, 1992. Soothill K, Barry J, Williams C. | N = 434 nurses employed in a Health Authority in England. Sampling method not stated. | Fishbein & Ajzen (1975) Theory of Reasoned Action. | Not stated. | Questionnaire. Longitudinal design (3 years). Cross tabulation. | Stated intentions to leave were subsequently transformed into leaving actions i.e. nurses did what they said they were going to do. Definite intentions to leave were acted on whereas less strong leaving intentions were not acted on to any significant degree. At the end of three years, 77% of those who thought they would definitely leave had left. Conversely 72% of nurses who demonstrated a propensity to stay remained in their jobs. Nurses who left their jobs within 6 months of their stated intention to leave appeared to be actualizing formulated plans rather than simply developing a stated intention. The authors concluded that there must be serious concern if the group of employees who state their intentions is large. The relationship between intention and outcome is less strong as time since the stated intention increases but it is important to note that stated intentions seemed to be valid over a long period of time. Changing personal circumstances were seen to shift orientations to work. Concerns of staff shortages and working conditions did result in some nurses changing their minds about staying in the organisation or in nursing but this affected only a few. The vast majority did what they intended. |

Variable	Number of articles found	Number of articles meeting the inclusive criteria	Article title and author	Sample	Theoretical Framework	Measurement	Method	Findings
			Job satisfaction, organizational commitment, turnover intention, and turnover: Path analyses based on meta-analytic findings. Personnel Psychology. 46: 259-293, 1993. Tett RP, Meyer JP.	Research articles that met the criteria. 178 independent samples reported in 155 studies published between 1968 to mid 1992.	Study guided by construct definitions reported in the collective of contributing studies. .	NA	Path analyses based on meta-analytic findings. .	7 meta-analytic reviews of relations among turnover and its antecedents predate this analysis. Satisfaction correlated more strongly with intent to leave than commitment (-0.58 vs -0.54). Turnover intent/withdrawal cognitions are the strongest predictor of turnover 0.45). In studies using global satisfaction scores, correlations based on single item measures are significantly weaker than their multi-item counterparts (28% vs 14%). Global measures do not correlate any more strongly than facet measures with intent. Both satisfaction and commitment contribute uniquely to intent (Porter et al, 1974). Satisfaction correlated less strongly than commitment to turnover (-0.27 vs -0.33) but variance only accounted for 27% of turnover variance which calls into question the use of intention/cognition measures as a surrogate of actual turnover. The authors suggested that the results of studies using intent as the sole withdrawal criterion may not generate well to situations involving actual turnover. Single vs multi-item measurement of turnover intention had a significant impact on the relationship with turnover. 15% of turnover variance was explained by multi=item scales vs 6% with single items suggesting that multi –items may be more explicit. The assessment of overall satisfaction is not unduly compromised by the use of facet based scales and facet measures can be used for diagnostic purposes. When a 15 item scale was compared to a 9 item scale, findings supported the use of the longer scale.. Satisfaction shared 26% more variance with withdrawal cognitions than with turnover intentions and the opposite was observed with turnover. Cognitions accounted for 21% less variance than intentions. This demonstrates the importance of intent in predicting behaviour. Withdrawal cognitions appeared to be broader than intent to leave, more closely related to work attitudes and more distantly related to turnover. Therefore the combination of intent could alter conclusions concerning behavioral intent. Review of satisfaction scales found a degree of contamination in global but not facet measures therefore it is important to use scales free of compounding items.

Variable	Number of articles found	Number of articles meeting the inclusive criteria	Article title and author	Sample	Theoretical Framework	Measurement	Method	Findings
			Nurses and their work. Health Research Services. Wellington. 1992. Ng SH, Jenkins L, Dixon A, Cram F.	N = 1803 nurses working in 6 of the 20 largest hospital/area health boards in New Zealand. Response rate = 69% (1249). Time 2 N = 1068. Response rate Time 2 = 80% (855). Random sampling.	Herzbergs two factor model. Maslow's theory of human motivation. .	Author developed job satisfaction scale. Career and employment expectations. Unsettling syndrome. Quitting intention. Demographic questionnaire. Employee turnover.	Questionnaire Longitudinal design. Factor analysis. Proportional hazards regression.	The result of the first PHE when job satisfaction was entered first on quitting was that higher job dissatisfaction during the first survey increased the likelihood of quitting in the ensuing months. However after unsettling responses was added job satisfaction became nonsignificant. When quitting intention was added as the third predictor, intent to quit was the only significant predictor suggesting that the effect of job satisfaction on quitting was indirect and mediated by unsettling response and intent to quit. The overall pattern of cross lagged correlations lent support to the job satisfaction > unsettling responses > quitting intention sequence. Intent to quit was the most powerful predictor of actual quitting in all the regression analyses carried out. Nurses who had resigned at the end of Time 2 (167 voluntary quitters) cited family reasons (13.3%) more often than any other single category of reasons. (63.5% were married and 24.9% had children). Since resigning 53% had taken up new nursing jobs and 21% had been involved in parenting. The majority (77%) considered their new roles as better than previous jobs. The majority of nurses took four months or less to tender their resignations from the time they first seriously considered quitting. Verbal self-reports by respondents were a reliable predictor of actual quitting up to 15 months after the self reports were made.

Variable	Number of articles found	Number of articles meeting the inclusive criteria	Article title and author	Sample	Theoretical Framework	Measurement	Method	Findings
			Job satisfaction and turnover among nurses: A review and meta-analysis. Monograph 1.University of Toronto. Canada. 1992. Irvine D, Evans M.	Job satisfaction studies = 11 Behavioral intention studies = 11.	A model based on Mueller and Price's (1990) conceptualisation which summarises the relationship between economic, sociological and psychological variables and nurse job satisfaction, behavioural intentions and turnover behaviour.	NA	Meta-analysis and path analysis.	Modelling of economic, structural and psychological factors on job satisfaction and then behavioral intentions suggested that intentions are directly related to turnover behaviour. The positive relationship suggests that as nurses develop their intention to leave they are inclined to follow through with turnover behaviour. The percentage of variance across studies due to sampling error is low, suggesting that other systematic differences accounted for a large proportion of variance. Modifiers of the relationship between intention to leave and turnover included the method of operationalising behavioural intentions (definition; timeframe; pre 1987/post1987). The only modifier between job satisfaction and behavioural intentions was how behavioural intentions had been measured. Studies that measured behavioral intention as intent to leave resulted in a correlation of -.54 whereas if behavioural intentions were measured as intent to search the correlation was -.34. Correlates of job satisfaction were identified. Economic factors: pay and alternative employment opportunities. Sociological/structural: job content included characteristics of the job routinization, autonomy, feedback) and characteristics of the work role (role conflict, role ambiguity): work environment factors (supervisory relations, leadership, career opportunity, participation). Psychological/individual: age, work experience, tenure. No differences were found between studies conducted before or during nurse shortages. It was suggested that the manner in which intentions were framed may influence responses and may be measuring slightly different constructs. Reported correlations did not vary in relation to low response rates. The study failed to confirm a modifying role for time lags between intentions and turnover behaviour. Of the variables related to job satisfaction, work content and work environment appeared to have the strongest relationships than either economic or individual difference variables. The result of the meta-analysis underscored the importance of factors related to nurse job satisfaction that are under the control of health care administrators and managers.

Variable	Number of articles found	Number of articles meeting the inclusive criteria	Article title and author	Sample	Theoretical Framework	Measurement	Method	Findings
			Structural Equations modelling test of a turnover theory: Cross sectional and longitudinal analyses. Journal of Applied Psychology. 76 (3): 350-366, 1991. Hom PW, Griffeth RW.	Study 1 N = 310 nurses working in a Cleveland hospital, USA. Response rate = 244. Random sampling. Study 2. N = 190 new RNs from another Cleveland Hospital. Surveyed at baseline, and at 4 monthly intervals x 2. Response rate = 82% time 1 and 78% Time 2.	None	Job satisfaction (Dunham & Herman's faces scale, 1975). Thoughts of quitting – 2 items (Hom et al, 1984). Expected utility of withdrawal (Hom et al, 1984) and search outcomes (Ajzen & Fishbein, 1980). Search intentions. Job search. Comparison of alternatives. Intention to quit (Hom et al, 1984). Retention (Stayers coded 1. Leavers 0.	Questionnaire. Longitudinal. Structural Equations Modelling.	Study 1. 6 months after the 2 hr survey session 28 of the nurses had voluntarily quit and 2 had retired. Study 2. 39 RNs had quit voluntarily and 5 had left involuntarily. The survey was an abbreviated questionnaire of that use in Study 1. During the first year satisfaction fell for both leavers and stayers. Leavers regarded alternatives more positively than stayers and also developed progressively higher withdrawal cognitions and expected utility of withdrawal. They were also more active in seeking alternatives as their tenure lengthened. As job satisfaction declined, it increasingly reinforced expected utility of withdrawal but decreasingly affected withdrawal cognitions. As withdrawal cognitions emerged and stabilised, their dependence on dissatisfaction, and their control over expected utility of withdrawal, progressively weakened i.e. once crystallized, quit intentions' causal connections with other variables vanished. The author concluded that job dissatisfaction may stimulate a general behavioural predisposition to withdraw, which in turn may mobilize more specific withdrawal intentions.

Variable	Number of articles found	Number of articles meeting the inclusive criteria	Article title and author	Sample	Theoretical Framework	Measurement	Method	Findings
Job satisfaction and propensity	9	1	Job satisfaction, propensity to leave and burnout in RNs and RNAs: a multivariate perspective. Canadian Journal of Nursing Administration. 7 (3): 43-64, 1994. Cameron SJ, Horsburgh ME, Armstrong-Stassen M.	As above.				

Variable	Number of articles found	Number of articles meeting the inclusive criteria	Article title and author	Sample	Theoretical Framework	Measurement	Method	Findings
Job stress Nurse job stress	202 1	9	An analysis of the relationship between job satisfaction and job stress in correctional nurses. Research in Nursing & Health. 25 (4): 282-94, 2002. Flannagan NA, Flannagan TJ.	See above.				
			Literature review of role stress/strain on nurses: An international perspective. Nursing and Health Sciences. 3: 161-172, 2001. Lambert VA, Lambert CE.	N = 105 published research articles in English.	NA	NA	A MEDLINE search for articles published since 1990 was conducted. Reference lists of all articles reviewed were also examined.	Role stress strain was conceptualised as the consequence of divergence between what are perceived to be role expectations and what is actually being accomplished within the role. The bulk of research had been conducted in the US and UK. The foci of studies tended to be in the area of environmental factors influencing and predicting factors, physiological and attitudinal outcomes, conceptual model application and testing, and issues of instrumentation. Only one cross cultural study was found. Few qualitative studies were conducted. The majority of studies were on the identification of stressors in a variety of work settings. Few studies listed limitations of the study design and findings. Work environment factors correlated with role stress/role strain were: low job control, high job demands and low supportive work relationships; dealing with death and dying, being moved to other work areas, being short of essential supplies and work overload; concern regarding poor quality care; shift rotation; time demands and restrictions on scope of practice; poor relationships with supervisors, co-workers and physicians. The large majority of studies used similar, reliable and valid questionnaires e.g. the 'Nurses Stress Scale' (Gray-Toft & Anderson, 1981); Maslach Burnout Inventory (Maslach & Jackson, 1986). Sample sizes varied from 30 to 36,000 subjects using convenience sampling. The author concluded that more studies outside the US and UK were needed particularly on predicting factors and their outcomes and more model testing was needed. Sampling methods other than convenience were recommended.
			Factors influencing satisfaction and anticipated turnover for nurses in an academic medical center. Journal of Nursing Administration. 31 (4): 210-6, 2001. Shader K, Broome ME, Broome CD, West ME, Nash M.	See above.				
			Identifying sources of stress and job satisfaction in the nursing environment. Australian Journal of Advanced Nursing. 17 (2): 30-5, 1999. Healy C, McKay M.	See above.			.	

Variable	Number of articles found	Number of articles meeting the inclusive criteria	Article title and author	Sample	Theoretical Framework	Measurement	Method	Findings
			The nursing practice environment, staff retention and quality of care. Research in Nursing & health. 19 (4): 331-43, 1996. Leveck ML, Jones CB.	N = 611 nurses employed in 4 acute care hospitals in the USA. Response rate = 59% (358). Sampling method not stated.	Anticipated turnover among nursing staff model (Hinshaw & Atwood, 1985). Model of management styles (Likert, 1967).	Likert's Profile of Organizational Characteristics (1967). The Group Cohesion Scale (Good & Nelson, 1973). Job Stress Scale (Hinshaw & Atwood, 1985). Organizational Work Satisfaction Scale (Hinshaw & Atwood, 1985). Nursing Job Satisfaction Scale (Atwood & Hinshaw, 1980). Staff retention – the proportion of nurses employed full time at the start of the study and remaining at the end of 1 year. Quality of care - Phaneuf Nursing Audit (Phaneuf, 1976).	Questionnaire Cross Sectional Survey. Correlation. Stepwise regression. Structural Equation Modelling	Overall, model variables explained subsequent stages in the theoretical model. Where nurses perceived participative management there was higher levels of group cohesion and lowered levels of job stress which in turn were associated with higher levels of organizational and professional job satisfaction. Professional job satisfaction and experience on the unit explained staff retention i.e. the longer staff stay the more likely it is to remain that way. Professional job satisfiers included perceptions of quality of care, enjoyment, and time to do one's job all of which provide direction for the development of interventions aimed at staff retention. Job stress explained quality of care. Management style had a direct effect on organizational job satisfaction as well as an indirect effect via group cohesion and job stress. Both direct and indirect effects exhibited a total effect of management style on organizational job satisfaction greater than direct effects alone. Management style did not effect professional job satisfaction but effected staff retention indirectly via group cohesion and job stress through professional job satisfaction.
			A comparison of frequency and sources of job stress perceived by intensive care, hospice and medical-surgical nurses. Journal of Advanced Nursing. 15 (5): 577-84, 1990. Foxall MJ, Zimmerman L, Standley R, Captain B.	N = 250 RNs working in ICU, medical-surgical and hospice units in the USA. Response rate = 55% (138). Convenience sampling.	Selye (1980). Definition of stress. Lazarus (1966). Effects of stress	Nursing Stress Scale (Gray-Toft & Anderson, 1981a).	Questionnaire. Cross Sectional Survey. Descriptive. ANOVA. Correlation.	No significant differences were found between the 3 groups of nurses for frequency of job stress. Significant differences were found between the 3 groups in 3 of the 8 subscales for sources of stress. ICU nurses and medical-surgical nurses had significantly higher scores for 'floating' subscale than hospice nurses. Medical-surgical nurses had significantly higher mean scores than the other 2 groups for workload/staffing subscales. Death was the most stressful situation for ICU and hospice nurses. Workload/staffing was the most stressful for medical-surgical nurses. No significant differences between groups were found in the remaining 5 of the 8 subscales suggesting that there are common stressors that are experienced in similar degrees for nurses working in different areas.

Variable	Number of articles found	Number of articles meeting the inclusive criteria	Article title and author	Sample	Theoretical Framework	Measurement	Method	Findings
			Identifying the causes of nurses' stress: a survey of New Zealand nurses. Work & Stress. 1 (1): 15-24, 1987. Dewe PJ.	N = 2500 nurses working in 29 hospital boards in New Zealand. Response rate = 2032 with 1801 questionnaires being usable (78%). A semi-stratified sample of 2500 nurses with random sampling within wards.	None stated.	Author developed and tested.	Stage 1 – interviews. Stage 2 – development of a questionnaire. Descriptive. Principal Components Analysis.	5 potential sources of stress were identified: work overload, difficulties in relating to other staff, difficulties in nursing the critically ill, concerns over the treatment of patients and dealing with difficult or helplessly ill patients. The author concluded that the five stressful situations needed to be viewed as multidimensional and not independent of each other.
			The Nursing Stress Scale: Development of an instrument. Journal of Behavioral Assessment. 3 (1): 11-23, 1981. Gray-Toft P, Anderson JG.	N = 122 nurses working on 5 units (medicine, surgery, cardiovascular surgery, oncology, hospice) in a general hospital ? in the USA. The sample represented 90% of staff working on these units. Sampling method not stated.	Lazarus (1966) – definition of stress.	Author developed and tested.	Questionnaire. Cross Sectional Survey. Factor analysis	7 major sources of stress were identified. One factor related to the physical environment – Workload (workload, staffing, scheduling, inadequate time to complete nursing tasks and to support patients emotionally). Four factors arose from the psychological environment – Death and Dying; Inadequate Preparation to Deal with the Emotional Needs of Patients and their Families; lack of Staff Support; Uncertainty Concerning Treatment. Two factors came from the social environment: Conflict with Physicians and Conflict with other Nurses and Supervisors. The test-retest co-efficient for the total scale was 0.81. 4 measures of internal consistency indicated an acceptable consistency among items. 4 of the 7 subscales exceeded 0.70 for test-retest reliability co-efficients. Inadequate preparation (0.42), lack of support (0.65) and uncertainty concerning treatment (0.68) did not. Validity was determined by investigating the relationship of the scale with criteria to which stress is theoretically related and significant correlations were found. Validity was also assessed as an indicator of turnover. As stress increased, turnover increased.
			Stress among hospital nursing staff: its causes and effects. Social Science Medicine. 15A: 639-647, 1981. Gray-Toft P, Anderson JG.	See above.	See above.	Nursing Stress Scale (Gray-Toft & Anderson, 1981). IPAT Anxiety Scale (Krug et al, 1976). Job Description Index (Smith et al, 1969).	Questionnaire. Cross Sectional Survey. ANOVA. Multivariate path analysis.	The major sources of stress experienced by nurses were similar regardless of unit. Most frequently reported stressors were workload, dying patients and inadequate preparation to meet the emotional needs of patients and their families. The correlation between total stress score and job satisfaction was -0.15 (P < 0.06). A path analysis was performed to test whether stress is an important intervening variable between the determinants of stress and job satisfaction. High levels of stress appeared to result in a significant decrease in job satisfaction even when other variables were controlled. The higher the frequency of stress among nurses on a unit, the higher the turnover rate. 30% of nurses experiencing the most stress transferred to other units of left the hospital. In contrast there was no turnover among hospice nurses who reported the lowest frequency of stress.

Variable	Number of articles found	Number of articles meeting the inclusive criteria	Article title and author	Sample	Theoretical Framework	Measurement	Method	Findings
Job stress and burnout	33	1	Analysis of job satisfaction, burnout and intent of respiratory care practitioners to leave the field or the job. Respiratory Care. 37 (1): 46-60, 1992. Shelledy DC, Mikles SP, May DF, Youtsey JW.	See above.				

Variable	Number of articles found	Number of articles meeting the inclusive criteria	Article title and author	Sample	Theoretical Framework	Measurement	Method	Findings
Job stress and intent to leave	1	1	Analysis of job satisfaction, burnout and intent of respiratory care practitioners to leave the field or the job. Respiratory Care. 37 (1): 46-60, 1992. Shelledy DC, Mikles SP, May DF, Youtsey JW.	See above.				

Variable	Number of articles found	Number of articles meeting the inclusive criteria	Article title and author	Sample	Theoretical Framework	Measurement	Method	Findings
Job stress & intentions	4	0						

Variable	Number of articles found	Number of articles meeting the inclusive criteria	Article title and author	Sample	Theoretical Framework	Measurement	Method	Findings
Job stress and propensity	1	1	Lack of professional latitude and role problems as correlates of propensity to quit amongst nursing staff. Journal of Advanced Nursing. 17: 1455-1459, 1992. Dolan SL, Van Ameringen MR, Corbin S, Arsenault MD.	N = 1237 staff working in 40 general hospitals in Quebec, Canada. 74% of respondents were nurses, head nurses, and nurse aides. Convenience sampling.	Not stated.	14 job demands were measured by Likert scales. 5 were obtained from the literature and 8 constructed to reflect hospital of ward work environment. A validation study was conducted. Propensity to quit (Beehr & King, 1986).	Questionnaire. Cross Sectional Survey. Correlation. Stepwise multiple regression.	Lack of professional latitude (0.31) was the strongest correlate followed by role difficulties (0.28) with propensity to quit. Some job stressors were mildly intercorrelated but this multicollinearity was resolved by stepwise regression which removes, step by step, the influence of one variable upon another. The strongest predictor of propensity to quit was lack of professional latitude ($R^2 = 0.09$). The three other stressors also added to the mode: role difficulties ($R^2 = 0.04$), clinical demands ($R^2 = 0.02$), and workload problems ($R^2 = 0.01$). The individual components of lack of professional latitude include restricted autonomy, skill under utilization and lack of participation in decisions. Skill underutilisation seemed to be closely linked with restricted autonomy. In a clinical environment of budget cuts and large increases in patient throughput, nurses were expected to increase their responsibilities and heavier workload without accompanying authority. They were also expected to carry out further education and specialization without consequent recognition of their new status in terms of career advancement or pay. Non participation in decision making meant that nurses had little say in the development and management of patient care at either the individual, institutional or even professional levels.

Variable	Number of articles found	Number of articles meeting the inclusive criteria	Article title and author	Sample	Theoretical Framework	Measurement	Method	Findings
Burnout Nurse burnout	998 29	7	Hospital staffing, organization, and quality of care: cross national findings. Nursing Outlook. 50 (5): 187-94, 2002. Aiken LH, Clarke SP, Sloane DM.	See above.				
			Hospital nurse staffing and patient mortality, nurse burnout and job dissatisfaction. JAMA. 288 (16): 1987-93, 2002. Aiken LH, Clarke SP, Sloane DM, Sochalski J, Silber JH.	See above.				
			A new look at nurse burnout: the effects of environmental uncertainty and social climate. Journal of Nursing Administration. 31 (2): 91-6, 2001. Garrett DK, McDaniel AM.	N = 287 RNs working in an acute care USA hospital. Response rate = 29.5% (82). 6 were excluded due to missing data. Final response rate = 26.4%. Sampling method not stated.	Interaction between the persona and environment (Elliot & Eisdorfer, 1982).	Environmental uncertainty was an objective measure of daily summed total admissions, discharges, transfers, divided by the midnight census

Social Climate- relationship dimension of the Work Environment Scale (Moos, 1994).

Maslachs Burnout Inventory (Maslach, Jackson, & Leiter, 1996).

Perceived Environmental Uncertainty in Hospitals Scale (Salyer, 1996). | Questionnaire. Cross Sectional Survey. Multiple Regression. | The unit with the greatest variability in the number of admissions, discharges, and transfers had the greatest day to day uncertainty. 3 regression analyses were conducted: 1. emotional exhaustion 2. depersonalisation 3. personal accomplishment. Objective unit uncertainty was significant only when predicting emotional exhaustion and was negative i.e. the high variability in unit activity was associated with less emotional exhaustion. Personal characteristics were not significant. Perceived environmental uncertainty, unit objective uncertainty, feelings of lack of supervisor support, and low work involvement explained half the variability in emotional exhaustion. Depersonalisation was predicted by low involvement, perceived environmental uncertainty, lack of peer cohesion and feelings of lack of supervisor support. Personal accomplishment was predicted by work involvement and perceived environmental uncertainty. The author concluded that nurses' perceptions of environmental uncertainty may be shaped more by the wider health care context or organisation as opposed to what is happening in their daily work lives or their individual characteristics. |

Variable	Number of articles found	Number of articles meeting the inclusive criteria	Article title and author	Sample	Theoretical Framework	Measurement	Method	Findings
			Burnout: Results of an empirical study of New Zealand nurses. Contemporary Nurse. 11 (1): 71-83, 2001. Hall L.	N = 3000 New Zealand nurses who were members of NZNO. Response rate = 38% (1134). Sample randomisation.	Maslach & Jackson's 3 component concenptualisation of burnout. The Phase Model of Burnout (Golembiewski et al, 1996, 1998).	Maslach Burnout Inventory (1996). Phase Model of Burnout (Golembiewski et al, 1998).	Questionnaire. Cross Sectional Survey. Descriptive. Correlation.	Burnout has been considered an outcome of occupational stress. The study found an overall low to average degree of burnout using the MBI with a mean score of 3.1 for EE, 2.10 for DP and 3.16 for PA. The Phase Model of Burnout found that 32.9% of nurses were in the advanced stages of burnout (similar to other studies) and significantly lower than the 41.5% reported for North American workers and 51.3% for other workers worldwide. Strong correlations between burnout and only one personal characteristic, age group, were found. Over half of nurses in the 41-45 age group were in the advanced stage of burnout. Age groups 36-40 and 46-50 also have a disproportionate high number in them. Patterns of burnout did not vary across work settings or career levels. Explanations for the studies findings were discussed in terms of nurses leaving their jobs, presenteeism, coping (problem-focused and emotion-focused) and being too burned out to respond.
			Work-related and individual determinants of the three burnout dimensions. Work & Stress. 13 (1): 74-86, 1999. Janssen PPM, Schaufeli WB, Houkes I.	N = 175 nurses employed in a general hospital in the Netherlands. Response rate = 89% (156). Sampling method not stated.	The classification framework of work settings (Kompier & Marcelissen, 1990). Work motivation (Hackman & Oldman, 1980). Work related health and well-being (Kahn, 1981; Warr, 1994). Burnout (Maslach & Jackson, 1986). Job turnover (Porter & Steers, 1973).	Job content variables (Hackman & Oldman, 1980). Mental work overload (de Jonge et al, 1993). Social support (Bergers et al, 1986). Unmet career expectations (Buunk & Janssen, 1992). Intrinsic work motivation (war et al, 1979). Emotional exhaustion (Maslach & Jackson, 1986). Turnover intention – 1 item (are you planning to leave the organisation within 1 year?) with a 6 point response scale.	Questionnaire. Cross Sectional Survey. Correlation. Structural Equations Modelling.	Janssen et al hypothesised that 1. intrinsic work motivation is primarily determined by work content variables 2. burnout is primarily determined by workload and limited social support 3. propensity to leave is primarily determined by conditions of employment. Correlations between the variables showed that the hypothesised pattern of relationships largely held true. The significant relationship between quality of job content and turnover intention (-0.27), and between unmet career expectations and emotional exhaustion (0.14) were not predicted. The author concluded that if management wanted to improve intrinsic work motivation among nurses, then attention needed to be focused on work content (skill variety, autonomy, social contacts, and opportunities to learn). Emotional exhaustion can be reduced by reducing or prevented by modifying workload. Job turnover can be prevented by improving opportunities for growth and job security.

Variable	Number of articles found	Number of articles meeting the inclusive criteria	Article title and author	Sample	Theoretical Framework	Measurement	Method	Findings
			Factors related to nursing burnout: A review of empirical knowledge. Issues in Mental Health Nursing. 15 (4): 337-58, 1994. Duquette A, Kerouac S, Sandhu BK, Beaudet L.	36 studies met the inclusion criteria. 19 journal articles, 15 doctoral dissertations, 2 masters theses.	Not stated.	NA	Review of literature.	45 variables were identified of which 15 were thought to be relevant: 5 organisational; 7 socio-demographic; 3 buffering factors. Among organisational stressors role ambiguity and workload were identified as correlates of burnout. However direct time spent with patients was unrelated to burnout. Burnout was not related to specific types of nursing but appeared to be a result of contextual (role ambiguity and workload) and personal factors (age). Younger nurses were more susceptible to burnout. Hardy individuals had the potential to counterbalance stress through adaptive strategies including seeking social support and to face stress-causing events.
			Nurse burnout: work related and demographic factors as culprits. Research in Nursing & Health. 14 (3): 223-8, 1991. Robinson SE, Roth SL, Keim J, Levenson M, Flentje JR, Bashor K.	N = 392 nurses employed in a USA ospital. Response rate = 314. Sampling method not stated.	None stated.	Maslach Burnout Inventory (Maslach & Jackson, 1986). Work Environment Scale (Moos, 1986).	Questionnaire. Cross Sectional Survey. MANOVA Stepwise regression.	Involvement, supervisor support and work pressure accounted for 34% of the variance in emotional exhaustion (EE). Negative relationships were found between involvement, supervisor support and EE while work pressure was positively associated with EE. Involvement, task orientation, work pressure and age accounted for 19% of the variance in depersonalization (DP). DP was positively associated with work pressure and negatively associated with involvement, task orientation and age. These same variables were predictors of personal accomplishment (PA). Involvement and task orientation were positively associated to PA while work pressure and age were inversely related to PA. All 3 aspects of burnout were influenced by perceptions of high work pressure and low work involvement. Younger nurses experienced more depersonalization whereas older nurses reported less personal accomplishment.

Variable	Number of articles found	Number of articles meeting the inclusive criteria	Article title and author	Sample	Theoretical Framework	Measurement	Method	Findings
Burnout and intent to leave	1	1	Analysis of job satisfaction, burnout and intent of respiratory care practitioners to leave the field or the job. Respiratory Care. 37 (1): 46-60, 1992. Shelledy DC, Mikles SP, May DF, Youtsey JW.	See above.				

Variable	Number of articles found	Number of articles meeting the inclusive criteria	Article title and author	Sample	Theoretical Framework	Measurement	Method	Findings
Burnout and intentions	4	1	Specific determinants of intrinsic work motivation, burnout and turnover intentions: a study among nurses. Journal of Advanced Nursing. 29 (6): 1360-9, 1999. Janssen PPM, de Jonge J, Bakker AB.	As above.				
			A meta-analytic examination of the correlates of the three dimensions of job burnout. Journal of Applied Psychology. 81 (2): 123-133, 1996). Lee RT, Ashforth BE.	N = 61 research articles that used the MBI. The studies covered 33 correlates based on 56 independent samples. Sample siizes ranged from 34-906. 80% of the studies sampled human service providers.	The conversation of resources theory of stress (Hobfoll & Freedy, 1993).		Meta –analysis.	Burnout has been linked to job stress and is thought to represent a unique response to frequent and intense client-patient interactions. Using the resource theory, emotional exhaustion as a form of strain is directly affected by demand and resource predictors whereas depersonalization as a form of defensive coping and personal accomplishment as a form of self-evaluation are indirectly affected through emotional exhaustion. Demand correlations between EE and role conflict, role stress, stressful events, workload and work pressure were $\geq$ .50. Correlations between DP and role ambiguity, role conflict, role stress, stressful events and workload were $\geq$ .34. Correlates between PA and demand correlates were weak with the highest being .22. Resource correlations between EE and social support, supervisor support, community bond, innovation, participation, unmet expectations and noncontingent punishment were all $\geq$ .30. DP and community bond, team cohesion and skill utilisation were $\geq$ .34. PA and work friends, participation and team orientation were $\geq$ .30. EE was positively associated with turnover intentions (r=.44) and negatively associated with organizational commitment (r = -/43. DP was negatively associated with organizational commitment (r = -.42) and job satisfaction (r = -.44) and PA was positively associated with control coping (r = .52). Results are consistent with the resource theory and suggest that individuals may be more sensitive to demands placed on them than to the resources received. Work demands are generally perceived as losses because meeting them requires an investment of valued resources, viewed as gains. Strain occurs when workers feel they no longer have sufficient emotional resources to handle interpersonal stressors and adopt a defensive strategy of withdrawal through depersonalization. Depersonalization was strongly associated with role stress (r = .54) and stressful events (r = .50). The strongest resource correlates with PA were work friends (r = .49) and participation (r = .30). Participation leads to greater felt mastery and control (i.e. empowerment) over the work environment, self-efficacy and self-appraisal may also be enhanced. EE and DP were strongly associated with turnover intentions but were weakly associated with control coping whereas PA was strongly associated with control coping.

Variable	Number of articles found	Number of articles meeting the inclusive criteria	Article title and author	Sample	Theoretical Framework	Measurement	Method	Findings
Burnout and propensity	3	2	Specific determinants of intrinsic work motivation, burnout and turnover intentions: a study among nurses. Journal of Advanced Nursing. 29 (6): 1360-9, 1999. Janssen PPM, de Jonge J, Bakker AB.	See above.				
			Job satisfaction, propensity to leave and burnout in RNs and RNAs: a multivariate perspective. Canadian Journal of Nursing Administration. 7 (3): 43-64, 1994. Cameron SJ, Horsburgh ME, Armstrong-Stassen M.	See above.				

Dear Anne,

Your permission request is approved to use:

The scale was found in the following article
Mueller CW & McCloskey JC (1990). Nurses job satisfaction: A proposed
measure. Nursing Research Mar/Apr. Vol 39 No 2

For: Thesis on the relationship between job satisfaction, stress, burnout,
and intent to leave.

Best regards,

David O'Brien
Permissions Manager, LWW
351 W. Camden St.
Baltimore, MD 21201
+ 1 410.528.4016 PH
+ 1 410.528.8550 FX

-----Original Message-----
From: Anne Daniels [mailto:DanielsA@hwl.co.nz]
Sent: Monday, July 15, 2002 3:56 PM
To: dobrien@LWW.com
Subject: RE: McCloskey Mueller Satisfaction Scale

I am a Masters student at the Auckland University of Technology New Zealand.
I am doing a thesis on the relationship between job satisfaction, stress,
burnout, and intent to leave. I looked at most of the satisfaction tools
that are currently used in studies and decided that the MMSS was the most
widely used as far as different cultures/countries were concerned and had
remained valid and reliable. Hence my reason for choosing it.
Regards

Anne Daniels
Clinical Resource Nurse
Thames Hospital/Community Services
Phone: 078686550 Ext 8864
Fax 078686598
Thames Hospital
New Zealand

Dear Anne,

Can you tell me what the scale will be used for?

Regards,

Dave

David O'Brien
Permissions Manager, LWW
351 W. Camden St.
Baltimore, MD 21201
+ 1 410.528.4016 PH
+ 1 410.528.8550 FX

-----Original Message-----
From: Anne Daniels [mailto:DanielsA@hwl.co.nz]
Sent: Sunday, July 14, 2002 4:37 PM
To: dobrien@LWW.com
Subject: McCloskey Mueller Satisfaction Scale

Hi David thanks for your reply via phone. I have left a message in reply.
The above scale was discussed in an article in the journal 'Nursing
Research' which I understand your company publishes. I emailed the
permissions department in May and have not yet had a reply.
The scale was found in the following article
Mueller CW & McCloskey JC (1990). Nurses job satisfaction: A proposed
measure. Nursing Research Mar/Apr. Vol 39 No 2

I need to meet some dealines this week. I have missed two in the last two
months due to my lack of success in contacting LWW. I appreciate your
assistance in helping me to gain copies and permission to use this scale.
Regards

Anne Daniels
Clinical Resource Nurse
Thames Hospital/Community Services
Phone: 078686550 Ext 8864
Fax 078686598
Thames Hospital
New Zealand

5 June 2002

Anne Daniels
Thames Hospital
Box 707
Thames

Dear Anne Daniels

<h3 align="center">Test User Qualifications</h3>

Thank you for supplying a summary of your qualifications and experience in the use of educational and psychological tests.

You have been assessed as satisfying requirements for registration as a user of the **Maslach Burnout Inventory - 3rd Edition.**

The following condition also applies to your purchase and use of tests:

> *You must have knowledge and experience of the field in which the test is regarded as a useful aid.*

Your registration as a user and purchaser of restricted tests is granted on a personal basis, and is not transferable to any service or institution. We ask therefore, that you sign all orders for test material placed under your name. We will supply you on condition that professional and ethical standards for use of tests, as may be defined by the New Zealand Council for Educational Research, the New Zealand Psychological Society, the Psychologists Registration Board or the originating publisher, will be followed at all times.

The classification of commonly used educational and psychological tests are contained in our current *Test Price List.* We are happy to provide additional information on these or other published tests.

Please notify us of any additions to your qualifications, or changes of address.

Yours sincerely,

Jane Dugdale
Test Advisory Services

An invitation to participate in a survey on……

**Listening to New Zealand nurses:
A survey of intent to leave, job satisfaction,
job stress, and burnout .**

Nurses who are employed in the_____District Health Board
are invited to participate in this survey.

*Please take 5 minutes to read the information on
the next page and decide whether you would like to
air your views on……*
   a. what makes your job satisfying or dissatisfying
   b. whether you intend to stay or leave nursing

It is hoped that the study results can be used to
improve the recruitment and retention of nurses.
Your opinion is valuable!

There are 5 parts to the survey:
   1. Job satisfaction (McCloskey/Mueller Satisfaction Scale)
   2. Job stress (Nursing Situations Questionnaire)
   3. Burnout (Maslachs Burnout Inventory)
   4. Intention to leave (or stay) (Nurses Retention Index)
   5. Demographic sheet

If you decide to participate, please answer every
question, then…..place the completed survey in the
self addressed envelope provided and post in your
work areas internal mail box.

Your time and your opinion are both valuable.
Please take the opportunity to be heard!
Thank you.

Participant Information Sheet

Project Title: Listening to New Zealand nurses: A survey of job satisfaction, burnout and intent to leave.

My name is Anne Daniels. I am a Masters student at the Auckland University of Technology. I also work as a Clinical Resource Nurse in the Waikato District Health Board. I would like to invite you to participate in this survey of nurses who work in the ………. District Health Board. I am carrying out the study as part of my Masters programme of study.

- **What is the purpose of the study?**

The main purpose of the study is to explore your views of what makes your job satisfying or dissatisfying, and whether you intend to stay or leave the organisation. The survey tools in this study have been used extensively overseas but not in New Zealand. Therefore, the second purpose of this study is to pilot the survey tool to explore how well it represents New Zealand nurses' experiences of job satisfaction.

- **How was I chosen to participate in the study?**

The study is being conducted in the ………. District Health Board. You have been chosen to participate as a nurse working in the paid employment of the ………. District Health Board. All paid employees have been assigned a unique identifier code by Payroll Services. *The first four hundred identifying codes that matched a computer generated set of random numbers were chosen to participate in the study. These numbers have been recoded with a number between 1 and 400 to protect your privacy.* The General Managers secretary posted the surveys to the randomly chosen participants. In my role as researcher, I will not have access to your names at any time during the research.

- **What are the benefits?**

If you decide to participate, you will have an opportunity to air your views about facets of your job that make you satisfied or dissatisfied and whether or not you want to remain working as a nurse in the future. By completing the survey you can help to identify factors that contribute to job satisfaction or dissatisfaction and why nurses stay in or leave their jobs. **It is hoped that the study findings can be used by the organisation to improve the recruitment and retention of nurses in the ………… District Health Board.**

- **Costs of Participating**

The survey will take approximately 20 to 30 minutes to complete, and I would be grateful if you would take the time to participate. As a nurse myself, I understand that your time is valuable. Your decision to participate in this study will make a significant contribution to learning about the factors that support nurse job satisfaction from your experiences.

The survey is asking for your views and attitudes around job satisfaction, job stress, burnout, and intentions of leaving or staying in nursing. Thinking of dissatisfying or stressful situations may cause you some discomfort. The …………… District Health Board has an Employee Assistance Programme that can be accessed through your Charge Nurse/Clinical Nurse Leader/Head of Department if you would like to discuss these feelings.

- **Can I join the study?**

Yes you can join the study. If you choose to participate, please......
1. Complete all the questions in the survey then
2. Put the completed survey into the self addressed envelope and
3. Post it back to me (the researcher) by putting it in the …DHB internal mail on or before the **28th February, 2003.**
4. By completing the survey and sending it back to me, you will indicate your consent to participate

If you choose not to participate, please
1. Let me know what your reasons are for choosing not to participate by completing the section below and post it back to me in the self-addressed envelope provided. It is just as important that I am able to identify why people choose not to participate in the study and your comments will be valued.
2. Post your response to me in the ….DHB internal mail.

I have chosen not to participate because…………………………………………………………………………..

………..

………..

- **What happens in the study?**

    Survey forms will be sent out in the mail to a randomly selected sample of *400 nurses* working in the …DHB. If you are one of the randomly chosen participants you will have received this survey in the post. You are invited to complete the survey and return it to me using the envelope provided by *February 28th 2003*. You are under no obligation to participate but you will receive a follow up survey two weeks later to act as a reminder. Once the survey forms have been returned to me, they will be collated and analysed. The key findings will used in my thesis. This will take approximately 6 months. Six months after the survey forms have been collected the number of participants who have left the organisation voluntarily will be collated and analysed. Recommendations from the study will be made to the Director of Nursing and the General Manager where appropriate.

- **How is my privacy protected?**

    Your privacy is protected through the use of a coded number at the top of you survey sheet. No material that could personally identify you will be used in the study. The only people to have access to the survey, other than the researcher will be the research supervisor, and a statistical expert. The surveys will be stored in a locked file cabinet to which the researcher has the only access and a copy of the data on disc will be kept by AUT in the post graduate administration office. The anonymous data may be used for another future study for comparison purposes. The surveys will be stored securely for a minimum of six years as required by the AUT Ethics committee and then destroyed.

- **How will I find out about the study results?**

Once the writing is completed the study will be published and will be made available in the …DHB, AUT, and NZNO libraries. It is intended that the research will also be presented at the NZNO Research Conference. The study will also be submitted to peer reviewed nursing journals.

- **Opportunity to consider invitation**

    If you have any questions about the study or the survey, please contact me through a collect call to

Anne Daniels
Home phone 07 8689714
Work phone 078686550 Ext 8864
Work email DanielsA@waikatodhb.govt.nz
Home email annedaniels@actrix.co.nz

- **Participant Concerns**

    If you have any questions or concerns about your rights as a participant, you may want to contact your professional organisation for advice

Concerns regarding the conduct of the research should be notified to the Executive Secretary, AUTEC, Madeline Banda,
Phone 09 917 9999 Ext 8044.
Email madeline.banda@aut.ac.nz ,

Approved by the Auckland University of Technology Ethics Committee on 28.10.02. *AUTEC Reference number* 02/91.

Approved by the ………… Ethics Committee on 31.10.02. *………. Ethics Reference Number*: 02/10/074

Approved by the Chief Operating Officer ……………. for …………………… on 23.10.02.

MBI Human Services Survey

0	1	2	3	4	5	6
Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Every day

Please read each statement carefully and decide if you ever feel this way about your job.
If you have never had this feeling, write "0" (zero) before the statement.
If you have had this feeling, indicate *how often* you feel it by writing the number (from 1 to 6) that best describes how frequently you feel that way.

How often
0-6

1 _____ I feel emotionally drained from my work

2 _____ I feel used up at the end of the workday

3 _____ I feel fatigued when I get up in the morning and have to face another day on the job

4 _____ I can easily understand how my patients feel about things

5 _____ I feel I treat some patients as if they were impersonal objects

6 _____ Working with people all day is really a strain for me.

7 _____ I deal very effectively with the problems of my patients

8 _____ I feel burned out from my work

9 _____ I feel I'm positively influencing other people's lives through my work

10 _____ I've become more callous toward people since I took this job

11 _____ I worry that this job is hardening me emotionally

12 _____ I feel very energetic

13 _____ I feel very frustrated by my job

14 _____ I feel I'm working too hard on my job

15 _____ I don't really care what happens to some patients

16 _____ Working with people directly puts too much stress on me

17 _____ I can easily create a relaxed atmosphere with my patients

18 _____ I feel exhilarated after working closely with my patients

19 _____ I have accomplished many worth while things in this job

20 _____ I feel like I'm at the end of my rope

21 _____ In my work, I deal with emotional problems calmly

22 _____ I feel patients blame me for some of their problems

Nursing Situations Questionnaire

1	2	3	4
Almost never	Occasionally	Often	Very often

Situations that commonly occur in your workplace are listed in a set of statements below. For each statement rate <u>how *often*</u> you have found these situations to be stressful.

Rating 1 to 4

1 _____ Essential equipment/supplies not available or working

2 _____ Criticism by a doctor

3 _____ Performing procedures that patients experience as painful

4 _____ Feeling helpless in the case of a patient who fails to improve

5 _____ Conflict with the Clinical Nurse Leader/Charge Nurse/Head of Department

6 _____ Listening or talking to a patient about his or her approaching death

7 _____ Opportunity to talk openly with other unit personnel about problems on the unit

8 _____ The death of a patient

9 _____ Conflict with a doctor

10 _____ Fear of making a mistake in treating a patient

11 _____ Opportunity to share experiences and feelings with other personnel on the unit

12 _____ The death of a patient with whom you developed a close relationship

13 _____ Doctor not being present when a patient dies

14 _____ Disagreement concerning the treatment of a patient

15 _____ Feeling inadequately prepared to help with the emotional needs of a patient's family

16 _____ Lack of opportunity to express to other personnel on the unit my negative feelings towards patients

17 _____ Inadequate information from a doctor regarding the medical condition of a patient

18 _____ Being asked a question by a patient for which I do not have a satisfactory answer

19 _____ Making a decision concerning a patient when the doctor is unavailable

20 _____ Shifting to other units that are short staffed

21 _____ Watching a patient suffer

22 _____ Difficulty in working with a particular nurse (or nurses) outside the unit

23 _____ Feeling inadequately prepared to help with the emotional needs of a patient

24 _____ Criticism by the Clinical Nurse Leader/Charge Nurse/Head of Department

3

Nursing Situations Questionnaire

1	2	3	4
Almost never	Occasionally	Often	Very often

Situations that commonly occur in your workplace are listed in a set of statements below. For each statement rate how *often* you have found these situations to be stressful.

Rating 1 to 4

25 _____ Unpredictable staffing and rostering

26 _____ A doctor ordering what appears to be inappropriate treatment for a patient

27 _____ Too many nonnursing tasks required such as clerical work

28 _____ Not enough time to provide emotional support to a patient

29 _____ Difficulty in working with a particular nurse (or nurses) on the unit

30 _____ Not enough time to complete all of my nursing tasks and care

31 _____ A doctor not being present in a medical emergency

32 _____ Knowing what a patient or patient's family ought to be told about the patients medical condition and treatment

33 _____ Uncertainty regarding the operation and functioning of specialised equipment

34 _____ Not enough staff to adequately cover the unit

35 _____ Supervising casual staff

36 _____ Supervising agency staff

37 _____ Support staff not being available (e.g. social workers, physiotherapists, occupational therapists, orderlies, staff to sit with 'specials')

MEMORANDUM

Academic Registry - Academic Services

To: Carrie Sanders

From: **Madeline Banda**

Date: 28 October 2002

Subject: 02/91 Listening to New Zealand nurses: A survey of job satisfaction, burnout, and intent to leave

Dear Carrie

Your application for ethics approval was considered by AUTEC at their meeting on 18 October 2002.

Your application was approved for a period of two years until 18 October 2004.

Commencement of the research is subject to receipt of the REC letter of approval.

You are required to submit the following to AUTEC:

▪ A brief annual progress report indicating compliance with the ethical approval given.
▪ A brief statement on the status of the project at the end of the period of approval or on completion of the project, whichever comes sooner.
▪ A request for renewal of approval if the project has not been completed by the end of the period of approval.

Please note that the Committee grants ethical approval only. If management approval from an institution/organisation is required, it is your responsibility to obtain this.

The Committee wishes you well with your research.

Please include the application number and study title in all correspondence and telephone queries.

Yours sincerely

Madeline Banda
Executive Secretary
AUTEC

From the desk of … 9999	Private Bag 92006, Auckland 1020	Tel: 64 9 917	210
Madeline Banda	New Zealand	ext 8044	
Academic Services	E-mail: madeline.banda@aut.ac.nz	Fax: 64 9 917 9812	
Academic Registry			

Appendix G

Nursing Retention Index – Intent to Leave the Job Frequency Table (Non reversed scores)

Item	N	Missing	Not Applicable	% Definitely false	% False	% Mostly false	% More false than true	% More true than false	% Mostly true	% True	% Definitely true
I plan to leave my job within the next 6 months	274	1		39.1	20.4	5.1	10.6	9.9	3.3	3.3	8.4
I expect I will keep working as a nurse in this organisation	272	3		7.0	4.4	4.0	14.0	14.3	12.1	24.3	19.9
My plan is to stay in my nursing career as long as I am able	273	2		5.5	2.6	3.7	8.1	15.4	18.7	22.0	24.2
I would like to find other employment by leaving nursing	272	3		27.2	23.9	6.6	12.9	11.0	6.6	4.4	7.4

Nursing Retention Index – Intent to Leave the Job Table (Reversed score means)

Item	N	Missing	Mean Possible Range 1-8 Midpoint 4.5 (Non-standardised Mean)	Std Deviation	Skewness	Kurtosis
I plan to leave my job within the next 6 months	274	1	2.96	2.28	.984 SE .147	-.262 SE .293
I expect I will keep working as a nurse in this organisation	272	3	3.43	2.09	.966 SE .147	-.463 SE .294
My plan is to stay in my nursing career as long as I am able	273	2	3.09	1.94	.966 SE .147	.298 SE .294
I would like to find other employment by leaving nursing	272	3	3.30	2.22	.713 SE .148	-.671 SE .294
Total Intent to Leave	270	5	3.2 (12.71)	6.52	.525 SE .148	-.556 SE .295

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McCloskey Mueller Satisfaction Scale – Item Frequency Table

Items	N	Missing	Not Applicable	% Very dissatisfied	% Moderately dissatisfied	% Moderately satisfied	% Very satisfied	Mean	Std Deviation	Skewness	Kurtosis
Extrinsic Rewards Subscale Items											
Pay	274	1		19.7	33.9	41.6	4.7	2.31	.841	-.163 SE .147	-.845 SE .293
Annual leave	274	1		8.0	18.2	54.7	19.0	2.85	.820	-.593 SE .147	.061 SE .293
Sick leave	273	2		18.3	22.0	37.7	22.0	2.63	1.021	-.262 SE .147	-1.036 SE.294
Scheduling Subscale Items											
Hours that you work	272	2	1	3.7	9.6	44.9	41.9	3.25	.776	-.944 SE .148	.682 SE.294
Flexibility in rostering	263	1	11	10.3	20.2	36.9	32.7	2.92	.968	-.527 SE .150	-.710 SE .299
Opportunity to work day shifts	256	2	17	5.5	12.1	40.2	42.2	3.19	.853	-.912 SE .152	.235 SE.303
Weekends off per month	262	1	12	5.7	14.1	40.1	40.1	3.15	.868	-.817 SE .150	-.010 SE .300
Flexibility in rostering your weekends off	256		19	7.8	19.5	35.9	36.7	3.02	.937	-.608 SE .152	-.581 SE .303
Compensation for working weekends	252	2	21	13.5	30.6	39.7	16.3	2.59	.917	-.151 SE .153	-.779 SE .306
Family and Work Balance Subscale Items											
Opportunity for part time work	256	8	11	3.9	12.1	31.6	52.3	3.32	.836	-1.076 SE .152	.389 SE.303
Maternity leave	186	20	69	7.5	14.0	49.5	29.0	3.00	.857	-.728 SE .178	.092 SE .355
Child care facilities	184	24	67	23.9	23.4	34.8	17.9	2.47	1.045	-.072 SE .179	-1.187 SE .356
Co-workers Subscale Items											
Your nursing peers	273	2		0.4	6.6	45.1	48.0	3.41	.630	-.666 SE .147	-.079 SE .294
The doctors you work with	272	2	1	3.7	12.5	59.6	24.3	3.04	.717	-.669 SE.148	.814 SE .294

McCloskey Mueller Satisfaction Scale – Item Frequency Table (Continued)

Item	N	Missing	Not Applicable	% Very dissatisfied	% Moderately dissatisfied	% Moderately satisfied	% Very satisfied	Mean	Std Deviation	Skewness	Kurtosis
Interaction Opportunities Subscale Items											
The delivery care method used in your unit	274		1	1.8	13.1	56.9	28.1	3.11	.689	-.490 SE.147	.339 SE.293
Opportunities for social contact at work	273	2		6.2	21.2	51.6	20.9	2.87	.810	-.472 SE .142	-.114 SE.294
Opportunities for social contact after work	270	4	1	3.3	20.0	52.2	24.4	2.98	.761	-.421 SE .148	-.100 SE.295
Opportunities to interact professionally with other disciplines	273	2		5.5	26.4	50.2	17.9	2.81	.792	-.310 SE.147	-.269 SE.294
Professional Opportunities Subscale Items											
Opportunities for post graduate study	265	4	6	12.5	29.8	45.7	12.1	2.57	.859	-.248 SE.150	-.563 SE .298
Opportunities to actively belong to department and organisational committees	266	7	2	5.3	25.2	48.1	21.4	2.86	.812	-.330 SE .149	-.366 SE .298
Opportunities to participate in nursing research	259	9	7	12.4	31.3	42.5	13.9	2.56	.879	-.174 SE .151	-.649 SE .302
Opportunities to write and publish	245	17	13	13.9	24.9	47.8	13.5	2.61	.888	-.349 SE .156	-.589 SE .310
Praise and Recognition Subscale Items											
Your immediate supervisor	272	3		7.4	11.8	48.2	32.7	3.06	.859	-.825 SE .148	.234 SE .294
Recognition from your supervisors	274	1		16.1	29.6	40.1	14.2	2.53	.926	-.145 SE .147	-.825 SE .293
Recognition from your peers	273	2		1.8	12.5	59.3	26.4	3.10	.673	-.489 SE .147	.537 SE .294
Amount of encouragement and positive feedback	274	1		12.0	34.7	36.5	16.8	2.58	.907	-.048 SE .147	-.787 SE .293

Appendix G

McCloskey Mueller Satisfaction Scale – Item Frequency Table (Continued)

Item	N	Missing	Not Applicable	% Very dissatisfied	% Moderately dissatisfied	% Moderately satisfied	% Very satisfied	Mean	Std Deviation	Skewness	Kurtosis
Control and Responsibility Subscale Items											
Control over what goes on in your work setting	273	2		15.4	36.3	38.1	10.3	2.43	.872	-.025 SE .147	-.696 SE .294
Opportunities for career advancement	268	4	3	14.6	31.7	40.3	13.4	2.53	.901	-.125 SE .149	-.749 SE .297
Your amount of responsibility	273	2		5.5	10.6	50.2	33.7	3.12	.807	-.858 SE .147	.554 SE .294
Your control over conditions	273	2		17.9	40.7	31.9	9.5	2.33	.879	.154 SE .147	-.680 SE .294
Your participation in organisational decision making	273	2		28.9	34.1	27.8	9.2	2.17	.953	.292 SE .147	-.917 SE .294

McCloskey Mueller Satisfaction Scale – Subscale Means Table

Subscale	N	Missing	Mean Possible Range 1-4 Midpoint 2.5 (Non-Standardised Mean)	Std Deviation	% Under neutral point (Dissatisfied)	% Over neutral point (Satisfied)	Skewness	Kurtosis
Extrinsic rewards	273	2	2.5 (7.79. Range 3-12)	1.96	38.1	61.9	-.141 SE .147	-.393 SE .294
Scheduling	238	37	3.0 (18.04. Range 6-24)	4.13	24.4	85.6	-.502 SE .158	-.496 SE .314
Family and work balance	171	104	2.9 (8.83. Range 3-12)	1.98	25.0	75.0	-.312 SE .186	-.375 SE .369
Co-workers	270	5	3.4 (6.45. Range 2-8)	1.14	16.7	83.3	-.457 SE .148	-.146 SE .295
Interaction opportunities	267	8	2.9 (11.78. Range 4-16)	2.21	30.0	70.0	-.220 SE .149	-.208 SE .297
Professional opportunities	238	37	2.6 (10.46. Range 4-16)	2.64	48.7	51.3	-.156 SE .158	-.098 SE .314
Praise and recognition	270	5	2.8 (11.25. Range 4-16)	2.65	39.6	60.4	-.148 SE .148	-.216 SE .295
Control and responsibility	267	8	2.4 (12.48. Range 5-20)	3.37	51.3	48.7	.068 SE .149	-.302 SE .297
Total job satisfaction	153	122	2.7 (85.82. Range 31-124)	13.60	25.5	74.5	-.358 SE .196	.151 SE.390

Appendix G

Nursing Situations Questionnaire – Item Frequency Table

Item	N	Missing	Not applicable	% Almost never	% Occasionally	% Often	% Very often	Mean	Std Deviation	Skewness	Kurtosis
Death and Dying Subscale Items											
Performing painful procedures that patients experience as painful	274		1	14.2	56.6	20.4	8.8	2.24	.802	.575 SE .147	.068 SE .293
Feeling helpless in the case of a patient who fails to improve	271		4	14.0	64.2	17.3	4.4	2.12	.691	.649 SE .148	.908 SE .295
Listening or talking to a patient about his or her approaching death	262	3	10	40.8	43.1	11.1	5.0	1.80	.825	.920 SE .150	.416 SE .300
The death of a patient	263	3	9	29.7	51	12.9	6.5	1.96	.828	.762 SE .150	.285 SE .299
The death of a patient with whom you developed a close relationship	259	5	11	39.8	43.6	10.8	5.8	1.83	.843	.926 SE .151	.397 SE .302
Doctor not being present when a patient dies	252	5	18	63.5	20.2	7.9	8.3	1.61	.949	1.441 SE .153	.903 SE .306
Watching a patient suffer	268	5	2	18.3	50.0	21.3	10.4	2.24	.871	.474 SE .149	-.347 SE .297
Conflict with Doctors Subscale Items											
Criticism by a doctor	274		1	48.5	43.4	6.6	1.5	1.61	.677	.950 SE .147	.865 SE .293
Conflict with a doctor	274		1	46.7	39.4	8.8	5.1	1.72	.827	1.103 SE .147	.769 SE .293
Fear of making a mistake in treating a patient	274	1		19.7	54.4	19.3	6.6	2.13	.800	.545 SE .147	.075 SE .293
Disagreement concerning treatment of a patient	274		1	24.1	56.6	16.8	2.6	1.98	.716	.455 SE .147	.213 SE .293
Making a decision concerning a patient when the doctor is unavailable	273	1	1	26.4	50.5	18.7	4.4	2.01	.793	.516 SE .147	-.067 SE .294
Inadequate Preparation Subscale Items											
Feeling inadequately prepared to help with the emotional needs of a patient's family	271	2	2	30.3	55.0	12.9	1.8	1.86	.699	.521 SE .148	.268 SE .295
Being asked a question by a patient for which I do not have a satisfactory answer	271	4		23.6	63.8	10.3	2.2	1.91	.649	.578 SE .148	1.174 SE .295
Feeling inadequately prepared to help the emotional needs of a patient	273	2		42.5	50.9	5.9	0.7	1.65	.625	.606 SE .147	.346 SE .284

Nursing Situations Questionnaire – Item Frequency Table (Continued)

Item	N	Missing	Not applicable	% Almost never	% Occasionally	% Often	% Very often	Mean	Std Deviation	Skewness	Kurtosis
Lack of Support Subscale Items											
Opportunity to talk openly with other unit personnel about problems on the unit	275			23.3	45.5	23.3	8.0	2.16	.873	.412 SE .147	-.468 SE .293
Opportunity to share experiences and feelings with other personnel on the unit	272	3		27.9	39.0	26.5	6.6	2.12	.893	.330 SE .148	-.733 SE .294
Lack of opportunity to express to other personnel on the unit my negative feelings towards patients	273	2		50.9	38.8	7.7	2.6	1.62	.739	1.128 SE .147	1.058 SE .294
Conflict with other Nurses Subscale Items											
Conflict with the clinical nurse leader/charge nurse/head of department	273	1	1	55.3	32.2	8.1	4.4	1.62	.815	1.307 SE .147	1.164 SE .294
Shifting to other units that are short staffed	249	9	17	48.2	25.3	13.7	12.9	1.91	1.063	.828 SE .154	-.642 SE .307
Difficulty in working with a particular nurse (or nurses) outside the unit	272	1	2	38.2	46.3	9.9	5.5	1.83	.821	.933 SE .148	.564 SE .294
Criticism by the clinical nurse leader/charge nurse/head of department	272	2	1	58.1	29.0	9.6	3.3	1.58	.797	1.296 SE .148	1.022 SE .294
Difficulty in working with a particular nurse (or nurses) on the unit	268	2	5	54.5	31.7	9.7	4.1	1.63	.821	1.217 SE .149	.837 SE .297
Workload Subscale Items											
Essential equipment/supplies not available	275			9.8	51.3	22.5	16.4	2.45	.880	.431 SE .147	-.613 .293
Unpredictable staffing or rostering	267	1	7	16.5	28.1	31.8	23.6	2.63	1.020	-.140 SE .148	-1.095 SE .297
Too many non nursing tasks required such as clerical work	275			15.3	33.5	26.9	24.4	2.60	1.018	-.022 SE .147	-1.133 SE .293
Not enough time to provide emotional support to a patient	274		1	10.2	36.9	38.0	15.0	2.58	.866	-.017 SE .147	-.688 SE .293
Not enough time to complete all of my nursing tasks and care	275			14.5	39.6	30.5	15.3	2.47	.921	.130 SE .147	-.807 SE .293
Not enough staff to adequately cover the unit	267	3	5	10.9	35.2	31.5	22.5	2.66	.947	-.039 SE .149	-.962 SE .297
Supervising casual staff	256	5	14	36.7	38.7	19.9	4.7	1.93	.867	.581 SE .152	-.482 SE.303
Supervising agency staff	237	9	29	42.6	34.6	18.6	4.2	1.84	.871	.696 SE .158	-.431 SE .315
Support staff not being available e.g. social workers etc	263	5	7	26.2	40.7	21.7	11.4	2.18	.952	.431 SE .150	-.711 SE .299

Appendix G

Nursing Situations Questionnaire – Item Frequency Table (Continued)

Item	N	Missing	Not applicable	% Almost never	% Occasionally	% Often	% Very often	Mean	Std Deviation	Skewness	Kurtosis
Uncertainty Concerning Treatment Subscale Items											
Inadequate information from a doctor regarding the medical condition of a patient	271	2	2	37.6	37.6	19.2	5.5	1.93	.887	.626 SE .148	-.457 SE .295
A doctor ordering what appears to be inappropriate treatment for a patient	271		4	25.8	60.1	9.2	4.8	1.93	.735	.845 SE .148	1.180 SE .295
A doctor not being present in a medical emergency	261	3	11	50.6	33.7	9.2	6.5	1.72	.884	1.161 SE .151	.598 SE .300
Knowing what a patient or patient's family ought to be told about the patients medical condition and treatment	269	2	4	28.3	50.2	15.2	6.3	2.00	.831	.676 SE .149	093 SE .296
Uncertainty regarding the operation and functioning of specialised equipment	270	2	3	30.0	55.2	10.7	4.1	1.89	.748	.774 SE .148	.762 SE .295

Nursing Situations Questionnaire – Subscale Means Table

Subscale	N	Missing	Mean Possible Range 1-4 Midpoint 2.5 (Non-Standardised Mean)	Std Deviation	% Under midpoint point (stress situations occur almost never or occasionally)	% Over midpoint (stress situations occur often or very often)	Skewness	Kurtosis
Death and dying	247	28	1.9 (13.83. Range 7-28)	3.48	86.6	13.4	.797 SE .155	.849 SE .309
Conflict with physicians	269	6	1.8 (9.44. Range 5-20)	2.38	89.6	10.4	.696 SE .149	.526 SE .296
Inadequate preparation	271	4	1.7 (5.21. Range 3-12)	1.62	92.3	0.7	.620 SE .148	.601 SE .295
Lack of support	271	4	1.9 (5.90. Range 3-12)	1.71	81.2	18.8	.132 SE .148	-.560 SE .295
Conflict with other nurses	245	30	1.7 (8.62. Range 5-20)	2.91	88.2	11.8	1.072 SE .156	1.072 SE .310
Workload	229	46	2.4 (21.66. Range 9-36)	5.44	52.8	47.2	.230 SE .161	-.588 SE .320
Uncertainty concerning treatment	252	23	1.9 (9.51. Range 5-20)	2.66	88.5	11.5	1.038 SE .153	1.890 SE .306
Total job stress	205	70	2.0 (74.85. Range 37-148)	13.74	90.7	9.3	.614 SE .170	.279 .338

Appendix G

Maslachs Burnout Inventory – Item Frequency Table

Items	N	Missing	% Never	% A few times a year or less	% Once a month or less	% A few times a month	% Once a week	% A few times a week	% Every day	Mean	Std Deviation	Skewness	Kurtosis
Emotional Exhaustion Subscale													
I feel emotionally drained from my work	274	1	2.6	23.4	13.9	22.3	14.6	19.7	3.6	2.97	1.604	.065 SE .147	-1.141 SE .293
I feel used up at the end of the workday	273	2	2.6	13.6	11.7	22.3	12.5	24.5	12.8	3.53	1.695	-.227 SE .147	-1.030 SE .294
I feel fatigued when I get up in the morning and have to face another day on the job	274	1	9.1	17.5	15.0	17.2	12.0	23.0	6.2	2.99	1.812	-.052 SE .147	-1.209 SE .293
Working with people all day is really a strain for me	273	2	38.1	30.4	14.7	9.2	4.0	3.3	0.4	1.22	1.354	1.196 SE .147	.893 .294
I feel burned out from my work	273	2	12.8	30.4	18.7	15.8	7.3	10.6	4.4	2.24	1.697	.627 SE .147	-.600 SE .294
I feel very frustrated by my job	274	1	5.1	24.1	18.2	17.9	14.2	14.6	5.8	2.79	1.681	.248 SE .147	-1.025 SE .293
I feel I'm working too hard on my job	274	1	9.1	19.0	13.5	19.3	11.3	17.9	9.9	2.98	1.855	.050 SE .147	-1.169 SE .293
Working with people directly puts too much stress on me	274	1	43.4	34.7	11.7	5.5	2.6	2.2	0.0	.96	1.163	1.534 SE .147	2.291 .293
I feel like I'm at the end of my rope	274	1	32.8	33.2	12.4	8.8	5.1	4.4	3.3	1.46	1.606	1.248 SE .147	.807 .293
Depersonalisation Subscale													
I feel I treat some patients as if they were impersonal objects	274	1	45.6	25.2	10.6	7.7	5.1	4.7	1.1	1.20	1.526	1.320 SE .147	.866 .293
I've become more callous toward people since I took this job	274	1	43.8	24.1	10.9	8.8	6.6	3.6	2.2	1.30	1.594	1.229 SE .147	.631 SE .293
I worry that this job is hardening me emotionally	273	2	40.3	27.1	11.4	7.7	4.4	3.7	5.5	1.42	1.737	1.329 SE .147	.840 .294
I don't really care what happens to some patients	274	1	64.6	23.0	4.7	4.4	1.8	0.7	0.7	.61	1.088	2.406 SE .147	6.474 SE .293
I feel patients blame me some of their problems	274	1	37.6	32.8	13.1	7.3	4.0	2.9	2.2	1.25	1.470	-1.181 SE .147	.574 SE .293

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Maslachs Burnout Inventory – Item Frequency Table (Continued)

Items	N	Missing	% Never	% A few times a year or less	% Once a month or less	% A few times a month	% Once a week	% A few times a week	% Every day	Mean	Std Deviation	Skewness	Kurtosis
Personal Accomplishment Subscale													
I can easily understand how my patients feel about things	271	4	3.7	5.2	3.7	10.0	9.2	24.4	43.9	4.65	1.702	-1.283 SE .148	.680 SE .295
I deal very effectively with the problems of my patients	272	3	0.7	1.8	0.7	4.4	7.0	27.2	58.1	5.29	1.137	-2.260 SE .148	5.828 SE .294
I feel I'm positively influencing other people's lives through my work	274	1	2.9	3.3	6.2	12.0	11.7	27.7	36.1	4.54	1.604	-1.107 SE .147	.456 SE .293
I feel very energetic	271	4	6.3	6.6	10.7	14.4	16.2	34.3	11.4	3.76	1.711	-.700 SE .148	-.497 SE .295
I can easily create a relaxed atmosphere with my patients	269	6	1.5	0.7	3.3	5.2	6.7	34.6	48.0	5.10	1.242	-1.967 SE .149	4.197 SE .296
I fee exhilarated after working closely with my patients	272	3	2.9	4.8	9.9	18.0	14.0	36.0	14.3	4.01	1.556	-.723 SE .148	-.249 SE .294
I have accomplished many worth while things in this job	273	2	1.1	5.9	5.5	13.9	15.8	31.1	26.7	4.38	1.520	-.885 SE .147	.010 SE .294
In my work I deal with emotional problems calmly	274	1	0.7	3.6	5.8	9.1	12.4	25.5	42.7	4.76	1.456	1.453 SE .147	1.731 SE .293

Appendix G

Maslachs Burnout Inventory - Subscale Means Table

Subscale	N	Missing	Mean	Std Deviation	% Low	Possible Range	% Average	Possible Range	% High	Possible Range	Skewness	Kurtosis
Emotional Exhaustion	272	3	19.91	10.03	41.2 (n = 112)	0-16	31.6 (n = 86)	17-26	27.2 (n =74)	27-54	.295 SE .148	-.749 SE.294
Depersonalisation	273	2	5.78	5.19	66.3 (n = 181)	≤ 6	22.7 (n = 62)	7-12	11.0 (n = 30)	≥ 13	1.151 SE .147	.825 SE .294
Personal Accomplishment	264	11	36.43	7.02	46.2 (n = 122)	≥ 39	31.1 (n = 82)	38-32	22.7 (n = 60)	≤ 31	-.630 SE.150	.253 SE .299