Retention of Graduates of Critical Care Nursing Courses undertaken in Victorian Regional Centres between 1995 and 1997

Submitted by

TANIA ELDERKIN, RN, CCRN,
BAppSc AdvN (PIT), GradDipCCN (VUT)

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DEPARTMENT of NURSING
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ABSTRACT

Nursing recruitment and turnover is a significant issue for the health care system, as high turnover rates can contribute significantly to negative outcomes in terms of cost and quality of care. Both critical care and regional nursing have been highlighted as areas of specific concern in the literature (Department of Human Services, 2001), but no studies have focussed on the retention of regional, critical care nurses.

This research is an exploratory, descriptive study to investigate the outcomes of tertiary critical care nursing courses based in Victorian regional hospitals in terms of employment and retention of graduates and the factors which influence this.

The research was undertaken in two parts. The preliminary part was a focus group interview with a small group of regional critical care nurses to identify ideas to incorporate into the main research component, a questionnaire survey. The focus group discussion revealed that factors affecting attraction and retention of nurses in regional critical care units are multi-faceted. These factors include the nature of critical care work, opportunities for gaining knowledge and skills, personal factors, teamwork aspects, and employment opportunities.

The second part of the research was a postal survey of 97 graduates of critical care nursing courses undertaken in eight regional Victorian hospitals between 1995 and 1997. The questionnaire response rate was just over 80% with a relatively high proportion of males in the group. The most important factors identified in retention of the graduates in this sample were the nature of critical care work and personal factors. The results of this study also showed good graduate retention rates when compared to published retention figures. The majority of the respondents in this study were still working in regional critical care units, although a significant number only work part-time.

Chapter 1: INTRODUCTION

Regional critical care units provide an important service to those Victorians living in regional communities, allowing critically ill patients to receive timely and appropriate health care. A recent report into planning for Victorian intensive care services suggests that aggressive recruitment and retention of critical care nursing staff is vital to the continued provision of that regional service (MA International, 2001, p.127). Integral to the staffing issues in regional critical care is the need to recruit and retain appropriately qualified nurses to maintain optimal patient care. To this end, a large number of regional hospitals have become collaborators in the provision of tertiary critical care nursing education, in the hope that the students will continue to work in their critical care units following completion of their courses.

This research study investigates the retention of graduates of critical care nursing courses undertaken in Victorian regional centres between 1995 and 1997. This chapter will describe the background to the study, the aims of the research and provide definitions of important terms used in this thesis.

Background

Nursing recruitment and turnover are pressing issues for the health system and the nursing profession, as highlighted by several recent reports (Department of Human Services, 2001; Department of Health and Aged Care, 2001; Buchanan & Considine, 2002; Ferguson & Ogle, 1996). High turnover levels are significant issues in terms of cost and quality of care. Duffy (1993) reported that the cost of replacing one Registered Nurse (RN) was approximately $10,000 in the United

States at that time and it seems fair to suggest that this cost would be significantly more when replacing a qualified critical care RN in 2002. Several authors have also suggested that poor job satisfaction and high nursing turnover will contribute to a decrease in the quality of patient care and poorer patient outcomes (Crockford, 1989; Leveck & Jones 1996; Blegen, Goode & Reed, 1998; Darvas & Hawkins, 2002). Strategies to improve the recruitment and retention of experienced, qualified, specialist nurses are therefore crucial to maintaining a quality health service.

Ferguson & Ogle stated that the recruitment of nurses into post-graduate courses in Victoria was not a specific concern in the critical care area (1996, p.72). More recently, however, the increased requirement for nurses to pay significant postgraduate course fees has become a disincentive for course application and will contribute to problems in recruitment. The retention of appropriately qualified nurses in critical care units has already been an issue of concern for around two decades, with attrition rates in the 1980s and 1990s reported at 30-39% (Ferguson & Ogle, 1996, p.7). Poor retention rates have been shown to contribute to difficulties in maintaining critical care services in the metropolitan area (Crockford, 1989), but there has been little data collected specifically in relation to the regional areas outside of the Melbourne metropolitan area.

Regional critical care units in Victoria have specific problems in maintaining the optimal level of *qualified* critical care nurses due to difficulties in accessing education programs (MA International, 2001; Chaboyer, Theobald, Pocock, Friel, 1997). Prior to the 1990's critical care units in regional hospitals relied on attracting nurses who had undertaken critical care nursing courses in metropolitan centres, or on 'skilling up' their own staff with inservice education to maintain their staffing levels. In the late 1980s and early 1990s some regional centres were able to obtain funding and approval to run 'non-metropolitan' critical care nursing courses to improve their staffing skill-mix. Subsequent to this, in the mid 1990s tertiary-based

critical care nursing courses were made available to several regional centres by universities keen to increase their student numbers.

The Nurses Board of Victoria (NBV) recommends regional nurses be provided with access to post-graduate education in critical care nursing within their local area (NBV, 1998, p.30). One strategy to achieve this is affiliation between a regional hospital and a university. This type of affiliation offers many advantages to regional centres that would not have been able to justify running courses for small numbers of students. It also requires, however, a significant commitment of resources; for example, funding for Clinical Nurse Educators (CNEs) to supervise students and funding for students' wages when they are not engaged in patient care activities. Although there is a perception that these courses are beneficial to the students and to the regional centres involved there has been no published research on their outcomes.

The benefits of nurses undertaking critical care nursing courses are generally described in relation to allowing these nurses to provide competent, specialist care to patients within designated critical care areas. It is often assumed that nurses who gain post-graduate qualifications and who are not working in the specific practice area related to the qualification are 'wasted'. Pitacco, Silvestro, Drigo and Spada (2001), however, state that "even the ordinary ward where a patient for whatever reason may be found in a life-threatening or unstable situation, is a critical care area" (p.26). This may be particularly pertinent in rural and remote areas where nurses are often expected to take on expanded roles and deal with whatever situations present themselves (Hegney & McCarthy, 2000). It seems reasonable to suggest that critical care nursing graduates, therefore, are able to utilise their critical care skills in other areas, leading to enhanced nursing practice and improved patient care.

Critical care nursing courses should also enhance the nurses' abilities in patient advocacy, communication skills, problem solving, and mentoring (Confederation of Australian Critical Care Nurses, 1996). These are skills that may be utilised not only in clinical practice but also in management or educational roles. Again, this indicates that graduates of critical care nursing courses may be able to utilise their skills and knowledge outside the critical care arena, but this has not been addressed in published research.

Purpose of the Research

This research will identify:

- the factors that are most important to nurses in attracting them to undertake regional critical care nursing courses;
- the current attrition rate of graduates of regional critical care courses;
- the factors that affect retention and attrition of these graduates.

This information will be useful in the planning of regional critical care nursing courses, in recruitment and selection of students and in facilitating retention of qualified critical care nurses.

The research will also identify some outcomes related to graduates who are <u>not</u> retained in regional critical care units in relation to their current employment and use of critical care nursing skills.

Research Objectives

The aim of this research is to investigate the outcomes of tertiary critical care nursing courses based in regional hospitals, in relation to the subsequent employment of graduates and the retention of these graduates within regional critical care units. The objectives of the research are:

1. To examine the factors that attract registered nurses to undertake regional, tertiary-based critical care nursing courses.

2. To identify what forms of employment graduates of regional, tertiary-based critical care nursing courses obtain subsequent to their graduation.

3. To investigate the current retention rate of nurses who graduated from regional, tertiary-based critical care nursing courses between 1995-1997 in regional critical care units, in the hospitals in which they undertook their courses and in the critical care nursing field in general.

4. To identify the factors that contribute to the attrition of graduates from critical care units.

5. To investigate whether graduates who have left the regional critical care unit in which they undertook their course still believe that they are utilising the skills and knowledge that they gained from the course.

6. To identify in what types of clinical areas, other than regional critical care units, that graduates utilise the skills and knowledge gained from their critical care course.

Definition of Terms

Critical Care Unit:	Designated area of the hospital dedicated to the care of patients who are acutely ill with a (potentially) life threatening condition. This may include Intensive Care Units, Coronary Care Units, Cardiothoracic Intensive Care Units, High Dependency Units, and Emergency Departments.
Intensive Care Unit (ICU)	A separate, specially staffed and equipped hospital unit dedicated to the care and treatment of patients with life-threatening illnesses, injuries or complications from which recovery is generally possible. It has the capacity for a one to one nurse to patient ratio (Department of Human Services, 1997).
Level 1 ICU	Adult intensive care unit capable of providing basic, multi-system support, usually for less than 24 hours (Department of Human Services, 1997).
Level 2 ICU	Adult intensive care unit capable of providing complex, multi-system life support, for a period of at least several days (Department of Human Services, 1997).
Level 3 ICU	Adult intensive care unit capable of providing complex, multi-system life support, for an indefinite period. It is a tertiary referral centre (Department of Human Services, 1997).

Coronary Care Unit (CCU)	A separate, specially staffed and equipped hospital unit dedicated to the care and treatment of patients with (potentially) life-threatening illnesses or complications related to cardiac disease.
Emergency Department (ED)	A separate, specially staffed and equipped hospital area dedicated to the assessment and initial care of patients presenting with illness or injury.
High Dependency Unit (HDU)	A separate hospital unit which provides an intermediate level of nurse staffing between ICU and ward care (Department of Human Services, 1997).
Critical Care Nursing Course:	Course of study, of at least one academic year, leading to the award of Graduate Certificate or Graduate Diploma related specifically to critical care nursing.
Graduate:	A Registered Nurse (Division 1) who has successfully completed a Critical Care Nursing Course as defined above.
Regional Hospitals:	Victorian hospitals based in regional centres outside the metropolitan area of Melbourne.
Attrition rate	Percentage of nurses employed in a specific area who leave their jobs during a specified time period (usually one year).

The following chapter presents a comprehensive literature review of the research topic focussed on the factors that affect nursing turnover in general and specific factors that affect turnover in regional areas and in critical care nursing. Subsequent chapters will describe the research methods used and the results obtained, both in relation to a preliminary focus group interview and a questionnaire survey. The relationship of the research findings to the previous literature and the implications of the research for management and education will also be discussed. Limitations of this research and possible directions for further research will be presented in the concluding chapter.

Chapter 2: LITERATURE REVIEW

Retention of nurses within the profession and within particular specialty nursing areas, such as critical care, paediatrics or aged care, has been discussed at length in the nursing literature, particularly in the United States (US). Many authors have identified retention as an issue that needs to be addressed by both administrators and the profession, indicating that retention of nurses is a problem in many areas of practice (Blegen, 1993; Boyle, Bott, Hansen, Woods & Taunton, 1999; Bratt, Broome, Kelber, & Loscosto, 2000; Busby & Banik, 1991; Choi, Jameson, Brekke, Anderson & Podratz, 1989; Clare & van Loon, 2001; Crockford, 1989; Darvas & Hawkins, 2002; Duffy, 1993; Ferguson & Ogle, 1996; Harvey & McMurray, 1997; Hegney, McCarthy, Rogers-Clark & Gorman, 2002; Huntley, 1994; Irvine & Evans, 1995; Leveck & Jones, 1996; Muncey 1998; Muus, Stratton, Dunkin, & Juhl, 1993; Robertson, Herth, Cummings, 1994; Schader, Broome, Broome, West & Nash, 2001; Williams, Ogle & Leslie, 2001; Woods, 1994).

Despite this plethora of literature, few studies quote specific retention rates, nor does there seem to be an 'ideal' figure for retention of nurses in specific work settings. The majority of literature (Blegen, 1993; Bratt et al., 2000; Busby & Banik, 1991; Choi et al., 1989; Duffy, 1993; Irvine & Evans 1995; Muus et al., 1993; Oermann, 1995; Schader et al., 2001) has focussed on identifying factors that affect job satisfaction and subsequently may affect retention in the workplace.

The research literature can be divided into three main areas of relevance to this research project: factors affecting the retention of nurses in general, the retention of nurses in non-metropolitan health care institutions and the retention of critical care nurses. No studies were found that looked specifically at the retention of regional critical care nurses.

Despite the lack of research specific to the topic, the related literature does provide a framework, within which to base this current research project. This chapter will provide a review of the current literature related to nursing retention and discuss the theoretical framework elicited from this literature review.

Nursing Retention in General

Research focussing on the retention of nurses in general is relevant to this project because it identifies the multiple factors that affect a nurse's job satisfaction. It also identifies the relationship of job satisfaction to turnover behaviours such as seeking alternative work. Blegen (1993) conducted a meta-analysis of variables related to job satisfaction. She identified over 250 quantitative studies related to this area, of which she included 48 correlational studies in her analysis. The total sample for analysis was 15,048 subjects from the US and Canada. All subjects were Registered Nurses (RNs) engaged in patient care and 79% of them worked in hospitals. The data analysis revealed 13 variables that had been used in several studies: age, education, locus of control, years of experience, autonomy, commitment, communication - peers, communication - supervisor, fairness, professionalism, recognition, routinisation, and stress.

From her analysis Blegen (1993) found that commitment had the strongest positive relationship with job satisfaction and stress had the strongest negative relationship. Age, years of experience, education and professionalism were found to have only small correlations with job satisfaction. Although useful in summarising the data from these 48 studies, many other studies of nurses' job satisfaction were not included in Blegen's work. Only studies that provided correlations between job satisfaction and other variables and an overall measure of job satisfaction were analysed. It is also a study based on North American nurses only, and does not attempt to address the issues in specialist nursing areas.

In 1995 Irvine and Evans also published a meta-analysis related to job satisfaction and turnover. Their analyses of the literature supports the widely held view that as job satisfaction decreases, turnover behaviour increases. Their analysis also suggests that the effect of job satisfaction on nursing turnover is mediated by the effect of behavioural intentions (i.e., the decision-making process). The intention to leave or seek work elsewhere was shown to have a stronger correlation to actual turnover than job satisfaction itself. This finding supports the view that even nurses with poor job satisfaction may stay in a particular job because of economic restraints or a paucity of other employment opportunities. Irvine and Evans (1995) also analysed the correlation between various economic, sociological and psychological variables and turnover behaviour in the studies. In contrast to Blegen's (1993) work, they found that work content and environment had the most significant effect on turnover. Although this was a complex meta-analysis, the authors failed to clearly identify the sample groups, the settings or the number of studies included. It is difficult, therefore, to confirm the relevance of these research findings to the Australian critical care context. Their study does, however, illustrate the important relationship of management, leadership and support to job satisfaction by its finding related to work environment.

Choi et al. (1989) studied the effects of work schedules on job satisfaction and turnover by focussing on the discrepancies between nurses' expectations and the actual experiences of their work schedules. Their sample included all nurses in a large tertiary care hospital and the survey response rate was 98%. Their findings showed that four types of discrepancies were strongly related to job satisfaction. These discrepancies were related to expectations of work schedules that: created

an ideal environment for nursing, were predictable, allowed social activities outside the hospital and fostered relationships outside of work. Similar to Irvine and Evans (1995), Choi et al's (1989) results also showed that job satisfaction had a direct and powerfully negative effect on a nurse's intention to leave their job. Actual turnover rates, however, were not studied. Another interesting finding was that having dependents at home appeared to provide a significant deterrent to intention to leave, perhaps due to financial constraints (Choi et al., 1989, p.101). This study illustrates that retention of nurses is influenced not only by work factors but also by their personal lives.

Several other authors have focussed on the effects of management on nursing retention. In her study, Duffy (1993) showed that caring behaviours of nurse managers were positively correlated to nurse's job satisfaction, but there was not a direct effect on nursing turnover. The turnover rate for the nurses in her study was reported at 10.6% over a three-month period. This short time span, however, may have not allowed identification of an accurate picture of turnover.

Another study of job satisfaction and the effects of management, by Kramer and Schmalenberg (1991), compared nurses working in hospitals that successfully attract and retain staff, to a random sample drawn from the subscriber list of a nursing journal. Kramer and Schmalenberg surveyed 1750 respondents in relation to five aspects of job satisfaction: organisational structure, professional practice, management style, quality of leadership and professional development. Other issues investigated related to staffing levels, the nurses' image of the nurse compared to the hospitals' image of the nurse and the value of nursing. The authors reported that the organisational structure was most important to the nurses' job

satisfaction. Their results also showed that job satisfaction had a strong correlation with congruence between the nurses' and the hospitals' images of nursing and also with nurses' perceptions of good staffing.

The effect of management style on nursing retention was also included in Leveck and Jones' (1996) survey of 358 RNs from 50 acute care units in metropolitan hospitals in the US. They reported a mean, one-year retention rate for these units of 67%, ranging from 23-100%, but did not provide separate data for the critical care areas. Interestingly, the intensive care unit (ICU) nurses in their study reported significantly lower job stress levels than the medical-surgical nurses. Overall, Leveck and Jones (1996) found that two main factors positively linked to nursing retention were experience on the unit and professional job satisfaction. This result suggests that a stable staff group is more likely to remain stable. Professional job satisfiers were identified in this study as: the perception of quality care, enjoyment, and time to do one's job. Extrinsic satisfiers such as pay and status were not found to be directly associated with increased staff retention.

In a more recent study, Schader et al. (2001) studied the relationships between job satisfaction, stress, age, cohesion, work schedules, and anticipated turnover in a US university hospital. This was a cross-sectional survey of 240 nurses working in 12 different units in the hospital. Their findings support the work of other authors (Blegen, 1993; Irvine & Evans, 1995; Leveck & Jones, 1996) in that job stress and job satisfaction were important predictors of anticipated turnover. This study also found that group cohesion and weekend overtime were also important. The finding in relation to overtime perhaps supports Choi et al's (1989) view that it is the discrepancy between the nurse's expectation of the schedule (i.e., his/her normal

roster) and the actual experience (i.e., having to do the overtime) that affects retention.

Most of the British literature identified was in the form of opinion articles or descriptions of interventions to improve retention rates amongst nurses. In the one research paper found, Muncey (1998) took a qualitative approach to retention issues. She investigated nurses' construction of reality and the ambiguities within nursing such as the expectations of rational decision-making compared to altruistic values. In this complex study she identified that it may be the nurse's psychological profile and his/her inability to deal with these ambiguities that significantly contributes to attrition rates.

In the Australian context, literature relating to the general retention of nurses has mainly been found in government reports. The latest of these, the final report of the Nurse Recruitment and Retention Committee commissioned by the Department of Human Services (DHS) stated that there was "strong evidence of uncertainty of the supply of nurses in the workforce" (DHS, 2001, p.37). This finding emphasises the need to maximise nursing retention, however the committee was unable to identify any industry benchmarks for acceptable retention rates. The issues contributing to nursing attrition in Victoria were identified as: workload issues, unsafe working environments, availability of equipment, career structure, support for nurses, cost of and access to education, and management issues. This large study utilised data from quantitative surveys, open consultation forums, focus group consultations and submissions to reach its findings.

Other Australian research has focussed on the recruitment of student nurses and their subsequent attrition. Harvey and McMurray (1997) studied nursing students and examined the effect of their perceptions of nursing prior to enrolment on their subsequent attrition. This was a cross-sectional study of 168 students in a rural tertiary institution, comparing those who had left the nursing program with those who were continuing. The major findings indicated that those who left the program had differing expectations to those who continued in respect to the scientific nature of their studies. This finding stresses the importance of prospective students having adequate information about their program prior to commencement. Another interesting finding, of specific relevance to the rural sector, was that 60% of those studied reported major problems with travelling to their clinical placements. This illustrates the difficulties that rural nurses may encounter when undertaking educational programs and the importance of providing programs in rural settings. Harvey and McMurray's (1997) study was limited by its low response rate of around 50% in both groups and by its cross-sectional design. Respondents who had left the program were asked to reflect back on their experiences and their responses may have been affected by their experiences subsequent to leaving.

In another Australian study, Clare and van Loon (2001) interviewed graduate nurses' about their reasons for entering nursing, reasons for considering leaving the profession and aspects of their transition year. This was only a brief, preliminary report and therefore difficult to interpret, but it identified several factors important to the attrition of nurses from the profession. These were cited as shift work, stress and tiredness, and lack of appreciation and support from management, peers and the community.

Nursing Retention in Non-Metropolitan Areas

Several papers have been published relating to non-metropolitan retention of nurses, although again the majority of these are based in the US.

Stratton, Dunkin, Juhl, Ludtke, and Geller (1991) studied managements' views of recruitment and retention issues in rural hospitals in the US. Stratton et al. surveyed 195 Directors of Nursing (DONs) who reported an average estimated nursing turnover rate of 13.61% and average nurse tenure of 7.89 years. Although comparisons to metropolitan hospitals were not cited, Stratton et al. (1991, p.33) stated that: "rural hospitals have traditionally maintained nursing staff that exhibit lower turnover and lengthier tenure than urban facilities", indicating that these figures were demonstrative of good retention rates. The DONs also reported more difficulty in recruiting staff than in retaining them, supporting the view that once nurses are living in the rural area, they become integrated into the community and are more likely to stay. It may also reflect a lack of alternative employment opportunities in rural areas.

Another American paper reports a survey of over 2400 RNs working in rural hospitals (Muus et al., 1993). These nurses were surveyed in regards to their intent to stay in their current position, and their current job dissatisfaction in relation to organisational climate, task requirements, status and salary. The results were then split into two groups: those who intended to stay for less than one year (short-term nurses) and those who intended to remain for 5 years or more (long-term nurses). According to their results, short-term nurses were more likely to be unmarried, in the under 30-year age group, and raised in communities of more than 50,000 people.

Proportionally more males were in this short-term group also. The job dissatisfaction results from both groups generally supported the work by Blegen (1993) and others that job satisfaction is dependent on a number of factors related to organisational climate, extrinsic rewards and support from others. These factors included pay rates, rewards for advanced training and education, respect from medical colleagues and management's involvement in problem solving. Five other factors, however, were reported to be significant only in the short-term nurses group. These were earning potential and opportunity for advancement, control over work hours and schedules and extent that management consults staff. These results seem to suggest that nurses are less likely to stay in rural hospitals if they are interested in career advancement. The limitations of this study relate to the poor response rate of 37.6% and the small numbers in the short-term group (145 nurses compared with 1298 nurses in the long-term group).

Another older study by Busby and Banik (1991) surveyed 100 RNs working in eight small rural hospitals in South Dakota. These nurses completed a survey related to work satisfaction, ranking the importance of six work-related factors, and their feelings about their current work situation. In contrast to Leveck and Jones' (1996) findings, the nurses in this study ranked pay and status as the most important factors followed by interactions with physicians and autonomy. Ranked as least important were organisational policies and task requirements. The findings related to pay might have limited relevance in Australia where pay scales are fairly similar in metropolitan and non-metropolitan settings. Other interesting findings in this study were that working on three or more units (i.e., 'floating') and working evening and night shifts were both associated with a higher level of work satisfaction. These results contradict widely held views that nurses prefer to work on one unit and to work 'normal hours'.

In the Australian context, Huntley (1994) studied recruitment and retention issues in six small, rural hospitals in New South Wales. This study involved interviewing 52 RNs and then using the interview data to construct a questionnaire to survey all 158 RNs working in these institutions. One of the main findings was that the nurses' lifestyle preferences and family circumstances were important influences on recruitment and retention. Her demographic results showed that over 83% of the respondents and their partners had lived in a country town for more than six months prior to coming to their current town. Ninety-one percent of the respondents also cited personal reasons for staying in their employment, such as the attraction of the country lifestyle. On the negative side, over 50% cited 'education of their children' as a reason that they would consider leaving their employment. Other important factors in retention were professional education, relationships with colleagues and adequate staffing. It was important to these nurses that employers understood their education needs and that continuing education was accessible in order to maintain their skills and allow networking with others.

Both Huntley's study and Busby and Banik's (1991) have limited application to the larger regional institutions where critical care programs are undertaken as they are both focussed on small, rural services of 50 beds or less.

In a more recent paper, Hegney et al. (2002) reported the results of their study into the factors that influence nurses to leave their jobs in rural Queensland. Their respondents were 146 RNs who had resigned from rural positions over an 18 month period. In their analysis Hegney et al. (2002, p.34) reported five factors as being most influential to these nurses leaving: management practices, emotional demands of work, family responsibilities, workplace communication, and management

recognition for their work. These results again support the work of other authors that it is not only job stress (Schader et al., 2001; Leveck & Jones, 1996) and management factors (Duffy, 1993; Irvine & Evans, 1995), but also personal issues (Huntley, 1994; Choi et al., 1989) that affect retention amongst nurses. Hegney et al. (2002, p.33) quote a nursing turnover rate of 20.2% for Queensland overall, with rates of up to 50% in some areas. This paper was limited by a low survey response rate of 40% and its focus on those who had left the Queensland Health Service (QHS). Other nurses who had left rural nursing, but who were still employed by the QHS, or who had left private rural services, were not included.

The Victorian Nurse Recruitment and Retention (DHS, 2001) report identified some specific issues for the rural sector and supported Huntley's (1994) assertion that access to education is important to rural nurses. Other issues cited were a perceived lack of full-time work to attract experienced nurses to rural areas and the high cost of housing in some tourist areas.

Critical Care Nursing Retention

Retention of nurses in critical care areas has been avidly discussed in the literature, again particularly in the US. In reviewing the American literature it is important to recognise the important differences between the American and Australian contexts. Education of critical care nurses is more formalised in Australia where post-graduate qualifications at Certificate or Diploma level are seen as the gold standard, whereas accreditation via the critical care nurse's professional group, the American Association of Critical-Care Nurses (AACN), is the standard level in the US. The task requirements of critical care work are also quite different because of the use of

Respiratory Therapists to manage mechanical ventilation in the US. Despite these differences however, the American literature can provide some insight into specific issues for nurses working with critically ill patients.

The acute nature of critical care work and the subsequent stress elicited in the nurse is noted by many authors in their discussions of retention. In reviewing the literature it appears that the negative effects of job stress and its contribution to critical care nursing turnover is widely accepted, both here and overseas (Bratt et al., 2000; Boyle et al., 1999; Ferguson & Ogle, 1996; Woods, 1994; DHS, 2001). At the local level, Ferguson & Ogle (1996) report that it is both the "practice demands" within the working environment and also the "highly political" nature of working in critical care that contribute to stress. In their investigation of the attrition of critical care nurses Ferguson and Ogle (1996, p.53) interviewed over 90 RNs and reported that these nurses felt that:

> " ...changes occurring in critical care areas were less than desirable and they (nurses) had little control or say over what was going on and decisions that were being made relative to budget cuts and closure of hospital beds which promoted less than desirable nursing practice."

This finding indicates that it is not just the actual work tasks and the emotional stress of working with critically ill patients, but also the political and budgetary environment that creates stress and dissatisfaction in critical care nurses.

Ferguson and Ogle's (1996) study was a large, qualitative investigation of the Victorian critical care nurse workforce. They collected data from many sources including critical care nursing students, applications for entry to critical care

programs, critical care RNs, and key informants such as DONs, nursing unit managers and human resources personnel. Overall, Ferguson and Ogle (1996) reported that, other than job stress, the main factors increasing the attrition of nurses were often personal in nature. Examples given were: leaving to raise a family, 'have a life', work more constant hours, or travel. This is compounded by the high proportion of night duty work required in critical care units (DHS, 2001).

On the positive side, Ferguson and Ogle reported that the main factors attracting nurses to critical care were the perceived autonomy, teamwork aspects, the acute, 'non-boring' nature of the work, attaining a high level of knowledge and skills, job security, and the possibility of job opportunities outside of the critical care arena. The attraction of possible job opportunities was also supported by their findings in the group of nurses who had left critical care. A large majority of the 91 respondents in this group indicated that their critical care qualification was advantageous either in securing their position or in helping them to practice at a higher level (Ferguson & Ogle, 1996, p. 55).

Overall, this report was a very comprehensive study, reflective of the local context, but did not specifically address the issues of regional critical care.

As in the general nursing retention literature, job satisfaction in critical care nurses has been of great interest to researchers. Bratt et al. (2000) studied a large group of paediatric ICU RNs to determine the main influences on their job satisfaction. Their sample group of 1973 nurses in the US and Canada was surveyed in relation to the nurses' attributes, perceptions of the work environment, and professional and organisational job satisfaction. Unit characteristics were also identified for each of the ICUs participating in the study. The findings revealed that job stress and nursing leadership were the major influences on job satisfaction, supporting research done

in general, adult settings (Blegen, 1993; Duffy, 1993). Retention rates for the ICUs in this study were reported as a mean of 80.46% (range 57-100%).

In another American study focussing on job satisfaction, Oermann (1995) studied 42 nurses who had undertaken an undergraduate course in critical care nursing. Of this group, 33 nurses (78.6%) entered critical care immediately after graduation and 32 remained in either a critical care or stepdown unit at the time of the study, which was an average of 3 years post- graduation. Oermann reported no significant differences in job satisfaction between the study group nurses working in critical care and those working in other areas. These results were then compared to a group of 59 critical care nurses who had not undertaken undergraduate critical care education. There was also no significant difference in job satisfaction between these two groups. Despite a good response rate of 89.4% this is a small study and the situation is somewhat different to the Australian context where it is not common practice for nurses to obtain positions in critical care immediately upon graduation. This study does, however, highlight the efficacy of education programs as a recruitment strategy and perhaps as a retention tool, as 76% of the initial group were still practicing in critical care.

Factors affecting job satisfaction were also the focus of a local study by Darvas and Hawkins (2002). They surveyed 32 ICU RNs from a large metropolitan hospital in Sydney, to determine what factors led to a high level of job satisfaction in these nurses. The respondents rated the importance of 32 factors within seven categories: type of patients in the unit, medical staff, role of the nurse, rostering practices, education, working relationships, and unit nursing management. Darvas and Hawkins (2002) results showed that the categories most important to these

nurses were the unit management, and their relationships with and confidence in the medical staff. Other factors that rated highly were self-rostering, having an active role in patient care issues, and teamwork factors. These results were congruent with findings by many other authors (Duffy, 1993; Choi et al., 1989; Kramer & Schmalenberg, 1991; Muus et al., 1993; Busby & Banik, 1991; Bratt et al., 2000) and help to confirm the relevance of overseas literature to the local context. Although Darvas and Hawkins state that the ICU in this study had stable staffing (2002, p.77) they fail to identify any actual retention rates. The small number of respondents also limits this paper.

Crockford (1989) studied the outcomes of Victorian post-graduate critical care education in relation to nursing attrition. In his survey of nearly 1000 critical care nursing course graduates he reported an overall retention rate of 61.38% at the time of the study. This, however, is difficult to interpret as there were varying periods of time between course completion and the study, from 12 months to over 12 years. Crockford's findings on the aspects of critical care nursing that attract and retain nurses were similar to Ferguson and Ogle (1996), in that self esteem (related to personal satisfaction, challenge, and autonomy of practice), and the interesting nature of the work itself were cited by a majority of participants. Other important factors were education related (e.g., the ability to extend skills and knowledge) and staff relationships/teamwork (Crockford, 1989, p.49).

In regards to staff relationships, Woods (1994), reported on the effects of the culture of the individual critical care unit on nursing retention. She studied two critical care units in one institution with differing retention rates and identified some important differences between the unit cultures. The culture in the 'high-retention' unit was

'patient-centred' rather than task-centred and the staff valued the knowledge and skills gained from education and nursing experience. Woods (1994, p.260) reported that the culture within this unit was homogenous and teamwork based. The culture in the 'low-retention' unit was reported as heterogenous with two major groups of staff, the 'old guard' and the 'newcomers'. This culture was based mainly on control, where the old guard was focussed on maintaining their belief system and newcomers were judged by these values. The old guard mainly valued knowledge and experience gained in that unit rather than education or experience gained elsewhere. Woods concluded that the dominant culture in a critical care unit significantly affected retention and that newcomers who accepted the beliefs, values and norms of the dominant culture in a unit are more likely to be retained (1994, p.265-266). Wood's study supports the view that it is not only organisational structure and nursing leadership that affects retention of nurses but also staff interactions in the workplace.

Issues related to nursing leadership and its effects on critical care retention have also been studied. Boyle et al. (1999) investigated the effects of critical care nurse managers' characteristics of power, influence and leadership style on nurses' intent to stay. These authors surveyed over 400 ICU RNs from four large US hospitals in relation to their managers' characteristics, organisational and work characteristics, job satisfaction, job stress, commitment, opportunity for work elsewhere, and their intent to stay in their current job. Their findings showed that the managers' characteristics had a direct effect on the nurses' intent to stay, supporting work by others (Duffy, 1993; Kramer & Schmalenberg, 1991). Other variables in this study with direct effects on intent to stay were promotion or work opportunities elsewhere, and job satisfaction (which was mediated by stress).

Theoretical framework

Overall the literature shows that retention of nurses is a complex, multifactorial issue. Few papers quote either actual or 'ideal' retention rates, but there is general agreement that retention needs to be improved. To this end, most research has been directed at determining what variables are important in affecting recruitment and retention of nurses.

The literature clearly shows that job satisfaction affects nursing retention. The multiple factors that contribute to job satisfaction can be classified under four main headings: economic, job characteristics, structural/work environment, and individual factors. Issues specifically related to rural settings or to critical care nursing appear to also impact on these four factors.

In relation to economic factors, *salary* has not generally been found to be well correlated to job satisfaction (Irvine & Evans, 1995, Leveck & Jones, 1996). Clare and van Loon (2001) however, cited low salary rates compared to other professions as a disincentive in attracting nurses to the profession in Australia and as a compounding factor in job dissatisfaction. In rural settings research suggests that *salary and earning potential* may be more strongly correlated to job satisfaction than in non-rural settings (Muus et al., 1993, Busby & Banik, 1991). Economic factors were not cited as specifically important to job satisfaction in the critical care retention literature.

Job characteristics identified as positively correlated to job satisfaction include *autonomy* and *feedback or recognition* (Blegen, 1993; Busby & Banik, 1991; Irvine & Evans, 1995; Kramer & Schmalenberg, 1991; Schader et al., 2001; Clare & van Loon, 2001; Hegney et al., 2002). Negative correlates include *routinization of tasks* (Irvine & Evans, 1995; Schader et al., 2001), and *role ambiguity and conflict* (Irvine & Evans, 1995; Muncey, 1998). *High nursing workloads* were also found to be a significant negative factor in Victoria (DHS, 2001) and this is supported by Schader et al's (2001) work despite the contrasting finding by Irvine and Evans (1995) in their meta-analysis.

The structure of the work environment has been shown to be important in job satisfaction (Kramer & Schmalenberg, 1991; Schader et al., 2001). Factors with a positive effect include *leadership* (Blegen, 1993; Irvine & Evans, 1995; Duffy, 1993; Leveck & Jones, 1996; DHS, 2001; Muus et al., 1993; Darvas & Hawkins, 2002), *interpersonal relationships* (Irvine & Evans, 1995; Kramer & Schmalenberg, 1991; Leveck & Jones, 1996; Woods, 1994; Hegney et al., 2002; Darvas & Hawkins, 2002) and *opportunity for advancement* (Irvine & Evans, 1995; DHS, 2001; Muus et al., 1993). Another important factor is related to the *schedules* that nurses are required to work (Choi et al., 1989, Schader et al., 2001; Darvas & Hawkins, 2002) particularly in critical care areas where high levels of night duty staffing are required (DHS, 2001). *Job stress* has been reported as an important factor in general retention by many authors (Irvine & Evans, 1995; Blegen, 1993; Schader et al., 2001; Leveck & Jones, 1996) but is seen to be specifically high in critical care nurses (Ferguson & Ogle, 1996; Bratt et al., 2000; DHS, 2001) despite the contrary finding by Leveck and Jones (1996).

Access to and support for education has specifically been shown to be an important issue for rural nurses (Huntley, 1994; DHS, 2001).

Individual factors may correlate strongly with job satisfaction. These include *commitment* (Blegen, 1993), and the nurses *expectations* of the job (Muncey, 1998; Harvey & McMurray, 1997). *Experience or length of tenure* was shown to be negatively related to job satisfaction by Choi et al. (1989) but others have found it to be a positive factor (Schader et al., 2001).

The work by Irvine and Evans (1996) showed that the effect of job satisfaction on nursing turnover is mediated by the behavioural intentions of the nurse. This is supported by other authors who found that personal factors can directly affect the nurse's intent to stay (Choi et al., 1989; Schader et al., 2001). These effects were found to be particularly important in the rural sector where personal factors such as age and marital status, family responsibilities, familiarity with rural communities, and preference for a rural lifestyle have been specifically linked to retention (Muus et al., 1993; Hegney et al., 2002; Huntley, 1994).

Issues specific to critical care nursing that may affect the nurses' behavioural intentions have been cited as the physical demands of the work and the opportunities for career advancement outside of the critical care arena (Ferguson & Ogle, 1996, p.53-55).

In rural settings, economic factors such as the cost of commuting to another institution or a lack of alternative employment opportunities may also have significant effects (Harvey & McMurray, 1997; Huntley, 1994).

In conclusion, the literature reviewed provides a framework within which to base this exploratory research into the retention of regional critical care nursing graduates. The literature identifies key variables affecting the recruitment and subsequent retention of nurses that are investigated in the current study. The framework illustrated in Figure 2.1 below may be utilised as a basis for understanding the variables involved.

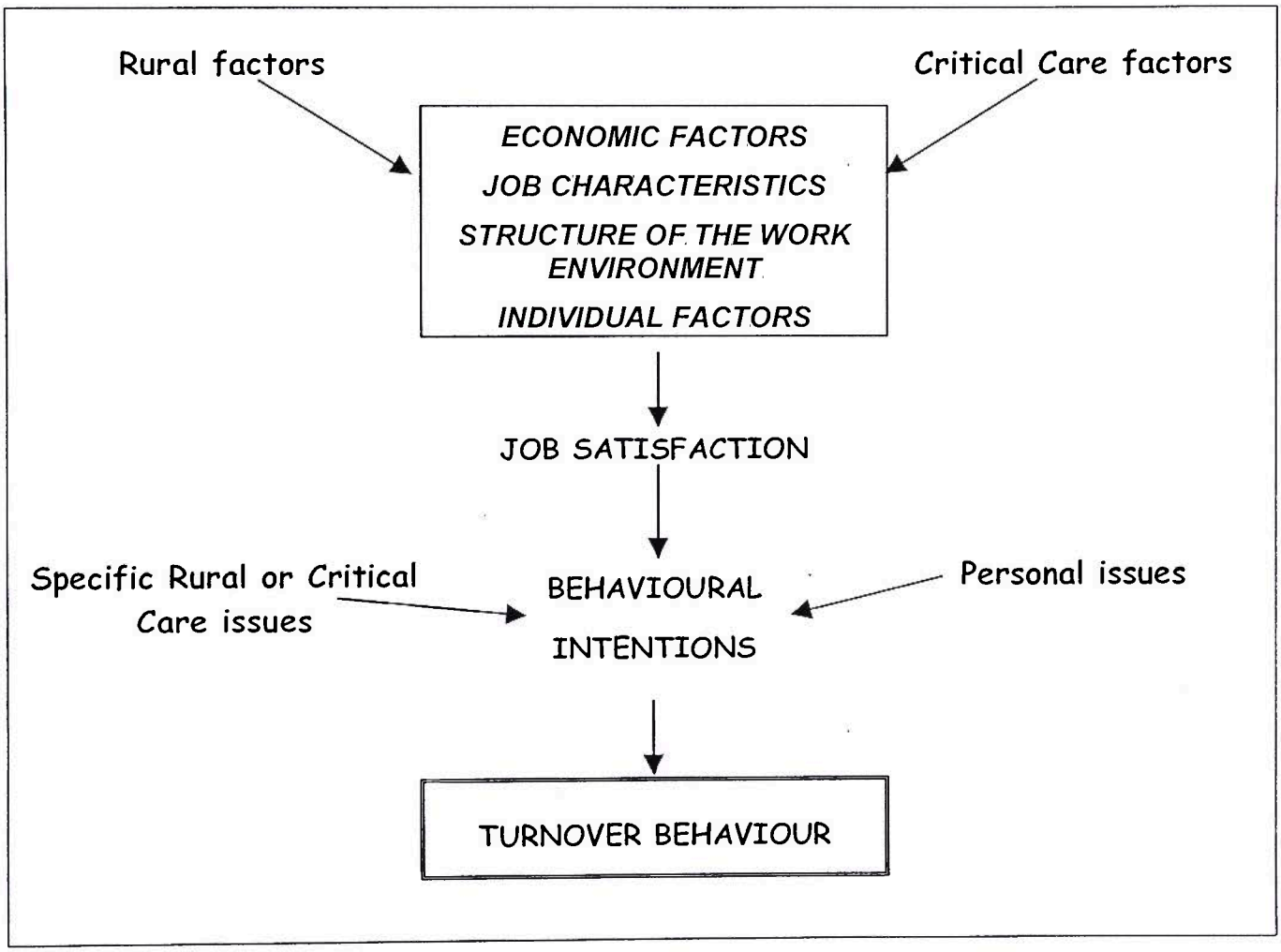

Figure 2.1: The relationships between job satisfaction, behavioural intentions and turnover behaviour.

Chapter 3: METHOD - FOCUS GROUP INTERVIEW

This study used a exploratory, descriptive design to identify and describe the outcomes from regional critical care nursing courses in terms of subsequent employment and retention and of course graduates, and the factors that impact on this. An exploratory design was seen as appropriate because there had been little previous research in this specific area (LoBiondo-Wood & Haber, 1998, p.197).

The initial, exploratory part of the study was undertaken via interview of a small focus group of regional critical care nursing graduates. The aim of this focus group interview was to identify the graduates' perceptions of course outcomes and to identify the factors that they perceived as affecting retention rates. These ideas were then incorporated into a broader quantitative survey utilising a questionnaire.

This chapter will discuss the design utilised for this initial phase of the study, including its methodological basis. The setting, sample and the procedure used in the focus group interview will be described and the rationale for their use discussed. The issues of validity and ethics will also be examined.

Methological basis

A focus group normally consists of a small group of people with common experiences or characteristics, who are interviewed by the researcher to elicit ideas and perceptions about the issue being researched. A focussed interview uses the broad topic to guide the interview. An interview guide is developed without using *fixed* wording or order of questions; allowing the participants to direct the conversation (Minichiello, Aroni, Timewell, & Alexander, 1995, p.65-66). The members of the group are encouraged to interact and debate the issue thus

stimulating ideas based on their shared perceptions This is therefore a flexible form of inquiry where social interaction of the group encourages the vocalisation of important concepts (McMillan, 1989, p.7). In this case the focus group interview was used as a precursor to the quantitative component of the study, highlighting important aspects to investigate in the questionnaire survey (Corner, 1991, p.722).

The interaction in a focus group also helps to generate ideas and questions that the researcher may not have previously identified (Holloway & Wheeler, 1996, p.144-147) and it is therefore very useful for exploratory research. Although the researcher had generated ideas for the questionnaire from literature review and from her own experiences as a critical care nursing graduate, this was limited by the lack of published research on regional issues, and also by the fact that the researcher had undertaken her critical care course in a *metropolitan* hospital. It was felt that discussion amongst a group of regional critical care graduates would elicit issues and ideas more specific to the regional areas, and it was also helpful in validating the ideas drawn from the literature and the researcher's experience. Focus group interviews are also seen as an efficient method of data collection because they allow the researcher to gather data from a number of participants at one time and also provide a form of 'validity' check in that the participants provide feedback on each other's views during their discussion (Patton, 1990, p.335-336).

Choosing the sample group for a focus group interview is an important step in facilitating the interaction and ensuring that appropriate, relevant data is obtained. According to Morse (cited in Holloway & Wheeler, 1996, p.75) good participants must be "willing and able to critically examine the experience..... must be willing to share the experience...". Good participants must also be willing to allow others to share their experiences so it is important that the group is not dominated by one individual nor inhibited by the presence of one individual of higher status or educational level than the others (Holloway & Wheeler, 1996, p.151). In order to

minimise these effects purposive sampling was used in this study. Homogeneous, purposive sampling is a technique used in many focus group interviews, whereby certain criteria are applied and the participants chosen accordingly. This type of sampling ensures that the sample group has knowledge of the area to be discussed and also helps to ensure homogeneity of the group, thus facilitating the group's interaction (Patton, 1990, p.169-173).

Sample

The focus group in this study consisted of five graduates of a regional critical care nursing course. These graduates would not be eligible to participate in the second part of the study, the questionnaire survey of graduates of regional critical care nursing courses between 1995 - 1997.

The focus group was recruited from one regional health care institution by personal invitation to participate. Purposive sampling was used to identify nine potential participants, four of whom were not currently working in the critical care area. Criteria for the purposive sampling were: between 30 and 45 years of age, graduated from a critical care nursing course at the regional hospital prior to 1995, current nursing position either Registered Nurse (RN) or Clinical Nurse Specialist (CNS), and educational background of Graduate Certificate or Graduate Diploma. These criteria were chosen to ensure some homogeneity of the group. Nurses who had graduated prior to 1995 were chosen because it was felt that they had personal experience of the area of interest, and would also have gained further insight through their years of experience. A letter was sent to each potential participant outlining the research study and the focus group interview process. Five nurses indicated that they would participate and a further letter was sent to these nurses with a consent

form and a brief demographics form. The letters and demographic forms are presented in Appendices A, B and C.

The demographic data presented in Table 2.1 illustrates that the group was fairly homogenous. Despite the need for some homogeneity it was important to obtain views from the different critical care areas and from outside critical care. Of the five final participants, two were working in the Intensive Care Unit, one in the Cardiac Care Unit, one in the Emergency Department and one outside of the critical care area in the Pre-operative Clinic.

Table 2.1: Focus group participants:

Participant No.	*Gender*	*Age (years)*	*Social situation*	*Current position*	*Education level*
1	Female	34	Married, children at home	Clinical Nurse Specialist, Emergency Department	Graduate Diploma
2	Female	33	Married, children at home	Clinical Nurse Specialist, Coronary Care Unit	Graduate Diploma
3	Female	42	Married, children at home	Clinical Nurse Specialist, Perioperative Service	Graduate Diploma
4	Female	32	Married, no children	Registered Nurse, Intensive Care Unit	Graduate Certificate
5	Female	37	Married, children at home	Clinical Nurse Specialist, Intensive Care Unit	Graduate Certificate

Having all female participants from one institution may have created bias in the data but it was felt that the benefit of some homogeneity of the group, in allowing free discussion and sharing of ideas, outweighed this potential. To assist in overcoming any bias in the final results the survey questions generated from this data were worded to allow participants in the main study group to add other themes or ideas if required. For example; in the questionnaire possible factors that attracted nurses to critical care nursing were listed for the participants to rank in order of importance, but there was also the option for any participant to add other factors that may have been specifically important to them.

Setting and procedure

The focus group interview took place in a private home. This venue was chosen partly due to its convenient location close to the proposed participants' homes. Holding the interview away from the workplace also assisted the participants to feel that they could communicate freely without concerns about repercussions from their employer. Furthermore the researcher was able to ensure a quiet, comfortable environment was provided for the interview, thus allowing uninterrupted discussion.

The researcher used a brief outline to guide the focus group interview but also allowed the participants to direct the discussion. The researcher asked open-ended questions about the following topics:

What attracts people to undertake critical care nursing courses?

What are the specific attractions of *regional* courses?

Why do people stay working in critical care/regional areas?

Why do they leave critical care nursing?

If they leave, are their critical care skills used elsewhere?

These topics were based on the aims of the research study. All the participants contributed to the ensuing discussion, often agreeing with other's points of view. The interview lasted approximately one hour and a quarter and was tape-recorded for later transcription. The researcher wrote interview notes immediately following the interview and incorporated that information when transcribing the interview tape.

Data Analysis

The transcript of the focus group interview was analysed using simple content analysis. In this method of analysis the researcher listens to the tape and reads the transcript several times to identify the essence of the ideas expressed by the participants (Holloway & Wheeler, 1996, p149-150). During the analysis four main areas of discussion were identified; factors that attract nurses to critical care, factors that attract nurses to regional critical care nursing courses, factors that help to retain nurses in regional critical care and factors that contribute to attrition from this area. Specific ideas were identified in each area to be utilised in formulating the questionnaire for the main part of the study.

Validity

The validity of the data obtained in the focus group interview was established by peer review. The interview transcript was reviewed and the researcher's analysis was validated by the researcher's supervisor and two other experts in the critical care nursing field. The participants in the focus group also provided validity checks during the discussion, by agreeing or disagreeing with each other's contributions.

The use of the focus group findings in the questionnaire survey provided the opportunity to further validate the focus group data. The results of the questionnaire study were congruent with the results obtained in the focus group interview.

Ethical Considerations

The Human Research Ethics Committee, Faculty of Human Development, Victoria University, granted approval for this research project prior to commencement of the focus group interview (see Appendix D for approval documentation).

The Director of Nursing of the regional hospital where the participants were working also granted verbal permission for the researcher to approach potential participants.

Informed consent was obtained from the participants in the focus group interview. Potential participants were given an information sheet regarding the study (see Appendix B) and were informed that they could withdraw from the study at any time during the process without prejudice. They were also informed of the steps that would be taken by the researcher to ensure confidentiality of the data during and following analysis. Consent to participate in the focus group interview was documented on the consent form shown in Appendix E.

The researcher maximised confidentiality of the research data. The tape of the focus group interview, the transcription of the tape and the researcher's notes do not identify the participants by name or inference. Names were deleted from the interview tape and pseudonyms were used in the transcript and in the study report. The interview tape, transcript and researcher's notes were kept in a key-locked cupboard in the researcher's home during data analysis and were only accessed by the researcher and her supervisor. Following completion of the thesis the research data will be securely stored by the School of Nursing, Faculty of Human

Development, Victoria University. The researcher has therefore ensured confidentiality of the data that was collected but the participants themselves could breach confidentiality. To minimise this the researcher stressed the importance of confidentiality in the introduction to the interview.

Completion of this phase of the research allowed the researcher to identify appropriate themes and ideas for compilation of the questionnaire for the main component of the study, the quantitative survey.

Chapter 4: RESEARCH FINDINGS - FOCUS GROUP INTERVIEW

As previously discussed, a focus group interview was used in this research project as an initial, exploratory component. The ideas generated from the interview were then used in the broader, quantitative survey.

A focus group interview is used by researchers to explore ideas and perceptions about an issue with a small group of participants from common backgrounds (Minichiello et al, 1995, p.65-66). The sample in this study consisted of five, female graduates of a regional critical care nursing course, aged between 34 and 42 years. The participants had all been nursing, as RNs (Division 1), for at least 7 years at the time of the interview. As previously noted, the researcher was aiming for homogeneity in the group, in order to facilitate open discussion (Patton, 1990, p.169-173). The participants were recruited by personal invitation from the researcher and informed consent was obtained from each participant prior to the interview.

The interview took place in a private home and lasted approximately one hour and a quarter. The researcher used a broad outline of open-ended questions to guide the focus group interview, based on the aims of the research study.

The interview was tape-recorded and later transcribed for analysis. The transcription was analysed using simple content analysis to identify the essence of the ideas expressed by the participants (Holloway & Wheeler, 1996, p.149-150). Four main areas of discussion were identified;

- Factors attracting nurses to critical care
- Factors attracting nurses specifically to *regional* critical care courses
- Factors helping to retain nurses in regional critical care
- Factors contributing to attrition of nurses from regional critical care.

This chapter presents the issues identified by the participants in each of the broad topic areas discussed during the interview.

Attraction to Critical Care Nursing

A number of major areas were discussed in relation to what initially attracted the participants to critical care nursing. These included the nature of the work itself, the rewards of working in the area, (both intrinsic and extrinsic) and the 'reputation' of critical care nurses.

The nature of critical care nursing was seen as more acute than other areas, but there was also the attraction of higher nurse:patient ratios, allowing the nurses more time to provide a higher standard of care. As two of the participants indicated:

> *...the way the wards were going - short-staffed, not able to give proper care and ...I had a few friends already working in intensive care...saying how good it was....*
>
> *One on one nursing ... rather than having to cope with five probably reasonably unwell people.*

For others the acuity of the work in critical care was the main attraction:

> *...I liked the drama, I liked the acute things rather than the long-term, mundane things.... I just didn't enjoy the wards, it wasn't that rewarding.*

The perceived rewards of working in the area were seen as a significant factor in leading the participants to apply for entry into a critical care nursing course. Some rewards were mainly intrinsic, for example the gaining of knowledge and expertise in the area. The participants saw these as important in terms of improving the standard of care for their patients, but also as rewards in themselves:

> *I knew there was knowledge that I didn't have.....that when you did the critical care course there were lots of things that you didn't get to learn in your general training and I just wanted that.*

Other rewards identified by the participants were more extrinsic, related to employment opportunities and job security. One participant applied for entry to the critical care course specifically because she was moving to the regional area for family reasons and needed to obtain work. A critical care qualification was seen as an advantage for those who wanted to travel whilst working or who wanted to work in remote areas. Critical care was also seen as an area where there was more opportunity for part-time, flexible work:

> *...that's probably one of the attractions, why I did do the course. I was getting older and thought ..... then my chances of getting part-time work were better when I did have kids, to have a course instead of just being on the wards.*

One other factor raised as an attraction to critical care nursing was the 'reputation' of the nurses. Critical care nurses were seen as having special knowledge and skills:

> *....you went there and everyone else knew all this special secret information.*

> *....you'd go in there and it used to be sort of 'awe'. You'd think gee, I wish I could look after all these people.*

Two of the participants were attracted to the area specifically because they were offered the opportunity of a six month position in the Intensive Care Unit. Incorporated into this position were a one-week study block and an orientation program. This program gave them some initial exposure to critical care nursing and encouraged them to go on to obtain formal qualifications in the area:

> *we did a short bridging course to work in ICU....and I think it was just enjoying working in the area, and the next step was to follow on and do the critical care course.*

In summary, the main factors identified by the focus group participants as attracting nurses to critical care areas were:

Opportunity to gain experience and knowledge

Enjoyment of the work

More rewarding work

The acute nature of the work

Increased opportunity to provide good care for their patients

Employment opportunities/qualification

Opportunity to join an 'elite' group.

Attraction to a Regional Critical Care Nursing Course

The participants also discussed specific reasons that might attract nurses to undertake courses in regional hospitals in comparison to metropolitan centres. The major factors identified were personal reasons for wanting to live in the regional area, perceptions of good nursing standards, course standards and support structures in the regional hospital, and familiarity with the regional hospital.

The discussion identified that several factors might contribute to the nurses' personal reasons for wanting to undertake a course in a regional centre. Several of the participants had grown up in the regional area and had family ties. It was also felt that the lifestyle in a regional area might be attractive to some:

> *....because I was married and settled down here I thought, well, I just didn't want to travel up to Melbourne.*

> *We had a girl come from Melbourne .... hers was just a single person's 'lets go and visit somewhere else' and beach and lifestyle stuff for a little while.*

Having some familiarity with the regional hospital was discussed as the majority of the participants had completed their general nursing program at the regional hospital. Some participants felt that the regional hospital provided a better standard of patient care and administrative support than elsewhere and it was, therefore, a good place to work and undertake a course. As one of the participants indicated:

> *I'd worked in a couple of metropolitan hospitals and just thought I had to get out because my skills were getting really bad. ....I just felt that the standard of nursing care in the hospitals I had worked at was really poor .....Yeah [the regional hospital had] a much better standard, also a much better structure as well, a much better administrative structure and support system.*

The standard of the critical care course run by the regional centre was also thought to be an attracting factor. The participants felt that their regional program was longer and more intensive than many of its metropolitan counterparts at the time. There have been significant changes to the structure of critical care courses since then, with the move to University-based courses, so it is difficult to know whether this would still be a factor in attracting nurses to regional hospitals.

Another factor identified was the fact that many nurses in smaller regional centres may not have had access to a critical care course at their own institution. They may have chosen to apply to the larger regional centres in preference to metropolitan courses. It was implied that, in general, people who live in regional areas prefer not to move to metropolitan areas. Again, the change to University-based courses and the provision of distance education has altered this situation, with many smaller regional centres now being able to support a critical care program.

In summary, the main factors identified by the focus group participants as attracting nurses to regional critical care courses were:

Personal and family reasons for living in a regional area (and not wishing to move to a metropolitan area)

Perceptions of good standards of patient care and administrative support in the regional centre

Perceptions of a good standard of critical care program run by the regional centre.

Retention Factors

There was much discussion amongst the group about the factors that keep nurses working in critical care areas and a number of major areas were identified. These included enjoyment of the work and its constant stimulation, the teamwork aspect, and employment factors such as flexibility and job security.

There was general agreement from the group that the enjoyment of the work itself was a major factor in keeping them working in the area. As two participants indicated:

> *I think I enjoy it ..... I like patient contact.*
>
> *Ten years [in ICU]. I loved the variety, I loved the work.*

Integral to this enjoyment was the constant learning and stimulation of working with critically ill patients:

> *I'm still learning new things all the time. I get to the stage where I think I've seen and done everything now, and then something new comes up that I haven't done.*

Teamwork aspects were mentioned by several of the participants, in terms of support provided by their nursing colleagues and respect given to them by other members of the critical care team. There was general agreement that more support was provided in critical care areas, as three participants stated:

> *...the group of people that you work with [is important] as well. Like you're not afraid of anything you haven't done for a long time ...everyone does pitch in and help each other. No one's afraid to say look [I don't know] or pretend that they know - they're quite willing to ask for help.*

Yeah, ...and there's more support, lots of support really.

....you really appreciate that you have this protected area where you always have the right numbers of staff looking after sick people. You always, well nearly always, get the attention you demand.

There was a lot of discussion about how difficult it is in the general ward situation to know what is going on with the patients that you are looking after. The participants felt that this made it difficult to communicate effectively with the other members of the health care team. Several other comments indicated that the participants felt that their place in the team was important, that they needed respect and the scope to practice with some autonomy. In critical care areas the participants felt that:

... you have more input in what's happening with your patient.

They [medical staff] have more respect for you too.

... in a way you have a certain autonomy and I think I enjoy that.

Employment aspects were also seen by the participants as important factors in retaining nurses in critical care areas. Flexibility in being able to obtain the rosters and hours of work that were suitable for family life and personal goals was important. Critical care nursing seemed to offer the participants both ends of the spectrum; part-time work with a flexible roster system, as well as the opportunity to work extra hours if required. Two of the participants felt that they would be unable to work in Intensive Care (ICU) at all if part-time work was not available. As one described:

I couldn't work full-time in ICU, I couldn't. ...I wouldn't last long at all. I think it's nice to do your two days together or three days together or whatever and then you've got a nice big break and then I think you're more enthusiastic to go to work as well. ...and I think you're also more keen to learn as well, because if you're not there that often, if you get something new then you really make an effort to learn ....

Job security was generally seen as important by this group of participants. One participant described how she had been offered a temporary position in ICU but had turned it down in preference of a permanent position elsewhere:

I was married and wanting a family in the nearer future and there just wasn't any job security offered to us and I just needed to have job security.

This might be seen as a negative factor in retention of critical care nurses, however the participants felt that in the current climate of critical care nursing shortages job security was readily available, as was the opportunity to do as much extra work as they needed:

I enjoy the work and [have] always been able to get the rosters I like and there's so much demand. You can get as much work as you want.

Enjoyment of the work, teamwork aspects and employment factors were the issues that the participants felt most positively affected retention of critical care nurses. They also identified that nurses working in regional critical care units may stay in a particular unit because of limited opportunities to go elsewhere. Many regional towns have only one major hospital with critical care facilities. If the nurse enjoys critical care work, therefore, there may be no other options for obtaining this type of work within the regional area.

Attrition Factors

Finally the focus group was asked to discuss the factors that cause graduates to leave critical care nursing. The major areas that they identified were related to the workload levels and responsibilities that came with becoming a senior member of a critical care unit's staff.

Workload levels were identified as issues in two ways, one related to a shortage of appropriate staff to do the work and the other related to the extra expectations placed on critical care nurses when they achieved Clinical Nurse Specialist (CNS) status.

Staff shortages made nurses consider leaving the area, as one participant stated:

> *...I toyed with giving it up .....Just because our workload was too great and I was scared that somebody was going to lose their registration, because there were just too many sick people and not enough people [in the Emergency Department] to look after them.*

The extra responsibilities of becoming a CNS such as being in charge of shifts, taking on an education role, completing administrative tasks such as rosters and contributing to various committees in the critical care unit were identified as very daunting to some critical care nurses. The participants suggested that this led to some competent critical care nurses leaving the area because they were overwhelmed by the workload once they became a CNS or because they were being pressured to apply for CNS classification.

Other factors that were discussed by the participants as possibly contributing to attrition were the 'culture' of the critical care unit, the futility of the work at times and personal reasons such as family and promotion.

Two of the participants in particular felt that there could be a certain culture that you had to fit in to in order to feel comfortable working in a particular unit:

> *I feel that there are particular people that are drawn to certain areas and I wasn't your typical ICU girl - I wasn't neat, tidy and I wasn't ...obsessive enough.*
>
> *....I don't know that I really wanted to work there [ICU] anyway, it was so cliquey. There were a few people that made it very uncomfortable for me.*

To others in the group the depressing nature of the work was considered a factor that could contribute to attrition:

> *I think for ten days I had a death every single day, on every shift I was in charge of and ...it's so depressing. You're sort of dealing with death and dying every single day and you feel there's got to be something better than that.*

Personal reasons for leaving critical care were also discussed, such as family commitments or travel, and the opportunities for promotion that might occur outside the critical care area. Some participants felt that their male counterparts were more likely to move outside the area for this reason:

> *I think with the guys, they see beyond [critical care]. They see what they can achieve beyond it by having [critical care].*

In summary, the main factors identified by the focus group participants as leading to attrition of nurses from critical care areas were:

Workload levels, including levels of responsibility and staff shortages

The culture of the unit related to co-workers personalities

Nursing patients with poor outcomes

Personal reasons such as family commitments and travel

Promotion opportunities outside of the critical care areas.

Conclusion

Overall, the focus group interview identified many issues related to the recruitment of nurses into regional critical care courses and the subsequent retention of staff. Recruitment issues were specifically discussed because it was felt that these issues are often interrelated with retention issues (Ferguson & Ogle, 1996, p.74). The individual factors that attract a nurse to critical care in a regional setting may have effects on the subsequent retention of that nurse in the area.

The ideas generated from the results of this focus group interview were then incorporated into the questionnaire to be sent to graduates of regional critical care courses throughout Victoria.

Chapter 5: METHOD - QUESTIONNAIRE SURVEY

The research study was undertaken in two parts, the preliminary part using the focus group interview to identify the aspects to be investigated, and the main part seeking understanding of the situation through the use of a questionnaire survey.

Following completion of the preliminary component of this study, a questionnaire was formulated to survey graduates of regional critical care nursing courses. This chapter will discuss the design utilised for this survey, including its methodological basis. The setting, sample and the instruments used in the survey will be described and the rationale for their use discussed. The issues of validity, reliability and ethics will also be examined.

Methodological Basis

The main part of this study involved a written questionnaire distributed to graduates of regional critical care nursing courses who undertook their courses between 1995 and 1997. This time period was chosen for the following reasons:

1) Regional critical care courses were becoming quite well established at this time. In the late 1980's only two regional hospitals were conducting Victorian Nursing Council approved courses (Crockford, 1989, p.24), with a total of approximately 16 graduates per year. By 1996 at least four universities were offering critical care courses in collaboration with a number of regional hospitals and the number of regional critical care nursing graduates had increased to at least 35 nurses per year.

2) A minimum of three years had elapsed since the participants graduated, allowing time for the participants to have established their career in critical care or to have moved to another area of practice. These participants would therefore be able to provide data relevant to the study objectives in regards to the factors that influence retention and attrition of critical care nurses.

3) Using three years for the study period would allow an adequate sample size, as most of the regional hospitals had only small numbers of graduates each year. Student intakes varied between two and ten per year in the regional hospitals involved in the study.

The use of questionnaires to perform a quantitative survey allows the researcher to collect a very structured data set from a large sample of participants. Survey research allows the efficient collection of a large amount of information and, with a well-designed tool, provides results that are very representative of the defined population (LoBiondo-Wood & Haber, 1996, p.198; de Vaus, 1995, p.3). Survey research was chosen as it was deemed appropriate for an exploratory study. A postal questionnaire was utilised due to the large geographical spread of the sample population limiting the researcher's direct access to the participants.

The researcher also collected some background data in relation to the critical care courses undertaken and the institutions and critical care units in which they were run. This information was obtained from the relevant Clinical Nurse Educators and included the following:

1) Type and bed number of the critical care unit the course was undertaken in (e.g., six bed ICU, eight bed CCU),
2) Institution administering the theoretical component of the course,
3) Type of qualification gained by the graduates.

This data was collected for analysis purposes in case there were significant differences between the particular groups of graduates.

Sample

This study was conducted through regional hospitals in Victoria that were conducting critical care courses in the years 1994, 1995, 1996 and 1997. The researcher identified nine regional hospitals that were either conducting a hospital-based critical care course or were affiliated with a university-based course during this time period. The year 1994 was included, as participants may not have completed their course until 1995 and therefore were eligible for the study.

The sample population was identified through contact with these regional hospitals. After gaining consent from the Director of Nursing of each hospital and ethics committee approval where required, assistance was sought from the Critical Care Clinical Nurse Educator (or equivalent). Appendices G and H outline the letter and information sheet sent to the Directors of Nursing requesting permission. The Clinical Nurse Educator (CNE) was asked to identify the eligible graduates for the study from their course records.

Eight regional hospitals were involved in the study. One hospital was unable to be included due to problems encountered identifying course graduates. Each of the eight hospitals identified between 5 and 28 graduates eligible for the study, with a total population of 100. Between July and November 2001, questionnaires were sent to a total of 97 graduates, the residual three being uncontactable. The return rate was just over 80% with the final sample for analysis being 78 questionnaires.

Procedure

As previously stated, assistance was sought from each hospital's CNE via a letter sent to the Director of Nursing or their equivalent (see Appendix F). Many of the graduates eligible for the study were still employed in the institutions where they undertook their courses or were known by the CNE, so current mailing addresses were able to be identified for 97% of the eligible graduates. Each graduate was assigned a code number, which was written on the questionnaire. The questionnaires were mailed to the graduates by the CNE, with a stamped, return envelope and a letter explaining the significance of the study (see Appendices G & H). Return of the questionnaire was recorded by the researcher according to its code number. If the questionnaire was not returned within the stated time period, a follow up letter was sent by the CNE to ensure an adequate response rate was achieved. Data collection was completed by early December, 2001.

Instrument

The questionnaire utilised in this study was constructed by the researcher after reference to the relevant literature, analysis of the data from the focus group interview and discussion with experts in the field: the research supervisor, two critical care nurse educators, one university-based critical care course coordinator and a critical care unit manager.

The questionnaire utilised mainly closed-ended questions and numerical scales to elicit quantitative data, although it also provided the opportunity for each participant to add extra information if they wished to. The questionnaire was divided into three sections, with each participant being asked to complete two sections.

The first section was to be completed by all participants and included demographic data and nursing background prior to commencing the critical care course, questions related to the participant's motivation for undertaking the course and employment subsequent to completing the course.

The second section was to be completed by those graduates who were still currently working in the critical care area and included questions about their employment history and their reasons for staying in the area.

The third section was to be completed by those graduates who were not currently employed in the critical care area. This section included questions relating to the participant's reasons for leaving the critical care area, their employment history subsequent to the course and their current utilisation of knowledge and skills gained in the critical care course.

The questionnaire is presented in Appendix I and took approximately 15 minutes to complete. The data obtained from the questionnaire survey was analysed utilising the statistical computer package SPSS Version 10.0.

Validity and Reliability

Face validity of the questionnaire was established by a pilot study of six nurses who had undertaken regional critical care courses during years other than 1995-1997. These nurses were therefore not eligible for the main study and had also not participated in the focus group. It was also reviewed and validated by the researcher's supervisor and two other experts in the critical care nursing field, a clinical nurse educator and a university lecturer.

The constructive comments made by the pilot group and critical care experts were considered by the researcher and subsequent changes made. These changes mainly related to the wording and order of specific questions to enhance the clarity.

The reliability of the questionnaire has not been formally established but the researcher used the pilot study to test the wording of the questions. Following the completion of the questionnaire by the pilot group, each participant was interviewed to ascertain the meanings they attached to the wording of the questionnaire. This assisted the researcher to avoid ambiguous and leading questions. According to de Vaus (1995, p.54-55) careful question wording is important in increasing reliability.

Another factor increasing the reliability of the tool is the fact that only one person, the researcher, coded and analysed the data obtained from the questionnaire, thus avoiding the issue of inter-rater reliability.

Ethical Considerations

As previously stated, approval for this research project was granted by the Human Research Ethics Committee, Faculty of Human Development, Victoria University prior to commencement. Permission was also granted by the Directors of Nursing (or equivalent) of the eight regional hospitals involved. Two of the hospitals also required approval by their own Research/Ethics committees which was duly granted prior to distribution of questionnaires to those hospitals' graduates (see Appendix J for approval documents).

The CNEs from each of the hospitals involved identified the potential participants from their critical care course records and allocated them a code number. The CNEs then distributed the numbered questionnaires and accompanying material to the potential participants. The accompanying material included an information sheet regarding the study (see Appendix G) which clearly stated that participation in the questionnaire survey was voluntary. The potential participants were also informed of the steps that would be taken by the researcher to ensure confidentiality of the data during and following analysis.

Consent to participate in this part of the study was assumed from the participant's completion and return of the questionnaire. The completed questionnaires were returned directly to the researcher identified only by the code number. This procedure ensured that confidential information (i.e., names and addresses of participants) and questionnaire data were kept completely separate. The code numbers were used on the questionnaires to enable the identification of variations related to specific regional areas or course years, but did not allow the researcher to access the names, addresses or other contact details of the participants.

By checking the code numbers, the researcher was then able to inform the relevant CNE which questionnaire numbers had not been returned to enable a reminder letter to be sent to the graduates by the CNE. Following completion of data collection by the researcher, the CNEs destroyed their lists of code numbers and contact details.

Confidentiality of data relating to specific hospitals involved in the study was also ensured as the hospitals were only identified by code number on the questionnaires

and in the data analysis. No participating individual or hospital is identified in the study report by name or by inference.

In order to ensure confidentiality of the questionnaire data, the completed questionnaires and the computer data disk were kept in a key-locked cupboard in the researcher's home during data analysis and were only accessed by the researcher and her supervisor. Following completion of the thesis these items will be securely stored by the School of Nursing, Faculty of Human Development, Victoria University for five years.

The data obtained from this questionnaire survey, when assessed along with the research literature and data from the focus group interview, will be able to be utilised to inform decision-makers regarding strategies to improve recruitment and retention of critical care course graduates.

Chapter 6: RESEARCH FINDINGS - QUESTIONNAIRE SURVEY

A three-part questionnaire was distributed by mail to 97 graduates of critical care courses from eight regional hospitals in Victoria. These graduates were identified from 1995, 1996 and 1997 course records by the hospitals' CNEs. Section one of the questionnaire asked for data relating to nurses' demographics, factors that attracted the nurses to regional critical care nursing courses, and employment obtained immediately following completion of the course. Section two was completed by those respondents who considered themselves to still be working in critical care nursing. Information sought was related to their current employment, factors that retained them in critical care nursing, and their future plans. Section three was completed by those respondents who considered themselves not to be working in critical care nursing. Information sought related to their current employment, factors that made them leave and whether they had considered returning to critical care nursing.

This questionnaire survey yielded a good response for data analysis. Of the 97 questionnaires distributed, 78 were returned, achieving an overall response rate of 80.4%. The response rates from each of the eight hospitals involved in the survey ranged between 46.2% and 100% with five hospitals yielding response rates greater than 80% (see Table 6.1).

The questionnaire data was coded by the researcher and entered into a computerised statistical package, SPSS, to facilitate analysis. Data obtained from the CNEs in regards to qualifications gained by the graduates and critical care unit profiles was also included for analysis. The main type of data analysis was the calculation of response frequencies for each questionnaire item. Measures of

central tendency, such as the median or mean, were computed where appropriate. Mann-Whitney testing was utilised to compare different groups of respondents in their ranking of particular items. The Mann-Whitney test allows evaluation of differences between two sample groups when the individual scores in the samples are rank-ordered (Gravetter & Wallnau, 1992, p.565).

Hospital	Eligible graduates	Questionnaires sent	Questionnaires returned	Response rate
1	28	27	24	88.9%
2	8	8	8	100%
3	4	4	4	100%
4	14	13	6	46.2%
5	7	6	4	66.7%
6	15	15	13	86.7%
7	7	7	5	71.4%
8	17	17	14.	82.4%
Total	**100**	**97**	**78**	**80.4%**

Table 6.1: Questionnaire returns according to hospital where course undertaken

This chapter will describe the results obtained from the questionnaire survey, focussed on the aims of the research project.

Demographics

The majority, 59 of the respondents were female (75.6%) compared to only 19 males (24.4%). All respondents were aged between 22 and 49 years, with the majority (65%) in the 30-39 year age group (see Figure 6.1). Sixty-two (79.5%) of the respondents were married or in a defacto relationship and 54 (69.2%) were parents at the time of the survey.

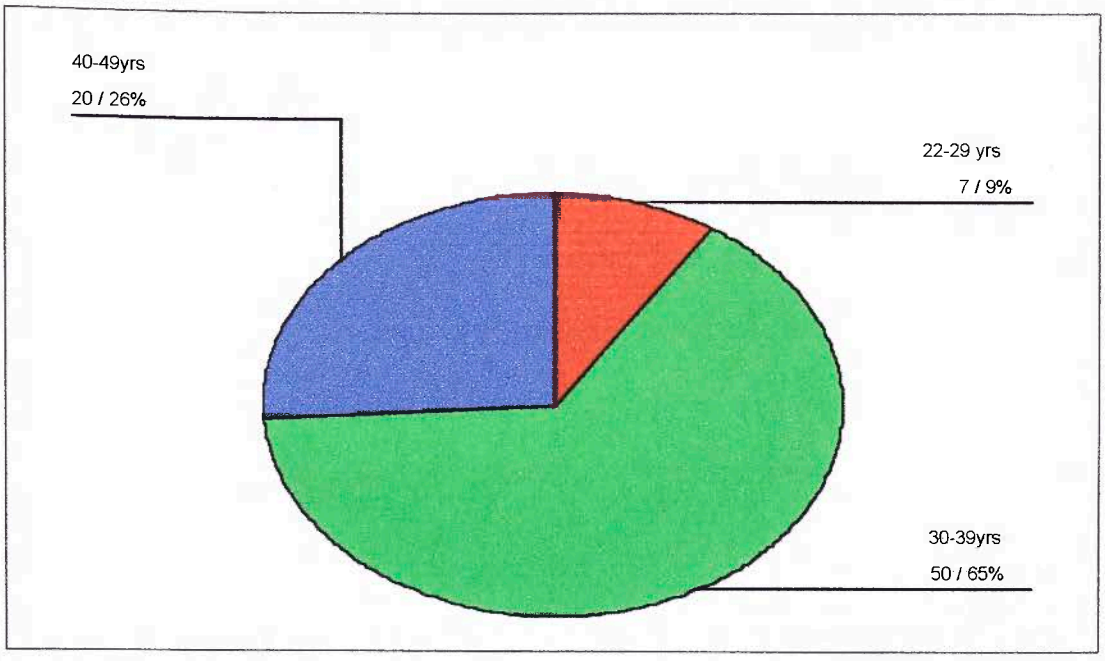

Figure 6.1: Age Groups of respondents (n = 77)

Pre-course Experience

The respondents' experience as Division 1 RNs ranged between 2 and 22 years prior to undertaking the course, with a median of 5 years experience (see Figure 6.2).

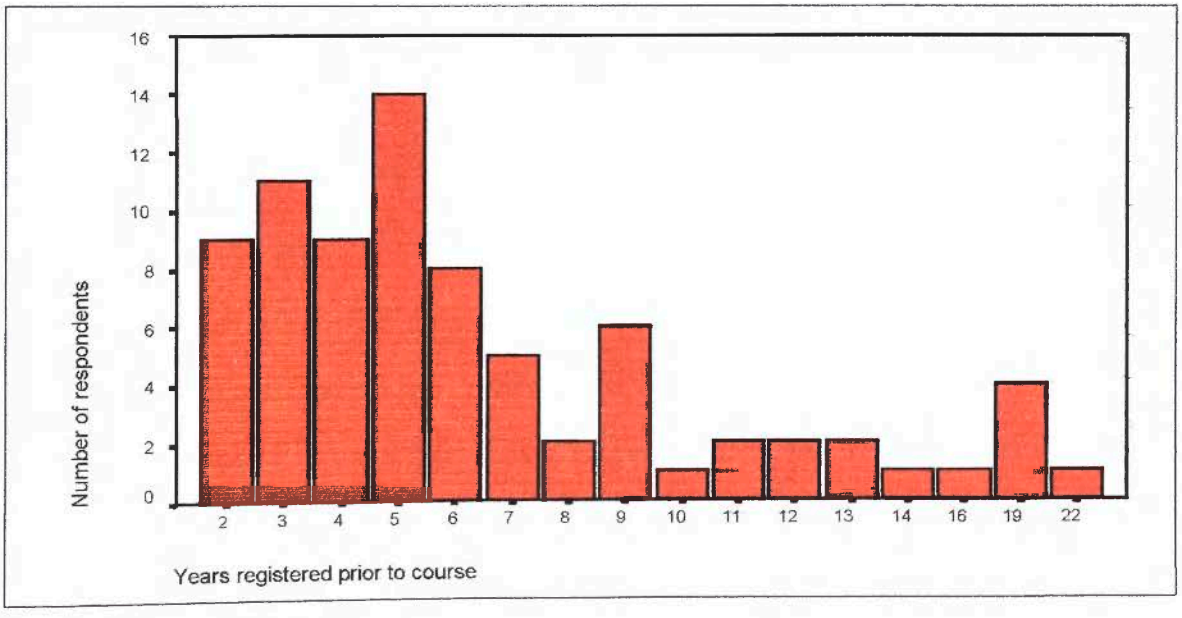

Figure 6.2: Respondents' experience as a RN Division 1 prior to critical care course (n = 78)

The majority, 60 of the respondents (76.9%) had experience working in the regional hospital prior to undertaking the critical care course, ranging between 4 months and 22 years, with a median of 2 years.

Sixty-nine respondents (88.5%) also reported having some critical care experience prior to undertaking the critical care course, either as an undergraduate or as a RN. Just over 60% of the group (n =47) reported having more than six months experience in critical care prior to undertaking their course.

From these results it can be seen that a large proportion of the group were experienced RNs, somewhat familiar with critical care nursing and/or with the regional hospital.

Critical Care Course Data

In relation to the type of critical care nursing course, 36 respondents (46.2%) had undertaken a Hospital certificate, 27 (34.6%) a Graduate Diploma, and 15 (19.2%) a Graduate certificate. All courses were of at least one academic year in duration.

The questionnaire was aimed at graduates who had completed their studies in 1995, 1996 and 1997, however a small group (n= 5) reported completing their courses in 1998. They were included in data analysis because they had all commenced their programs early in 1997 and had completed the course at least 3 years before participating in the study. A large group of 36 respondents (46.2%) had completed their courses in 1996. This was because two hospitals were running hospital-based courses in 1995, which did not complete until 1996, but then switched to university-based courses, which were deemed to have completed in the same year. These two hospitals, therefore, had two groups of students completing in the same year, one group in February and one at the end of the academic year in November.

Only 14 (17.9%) of the respondents completed their courses in 1995 compared with 23 (29.5%) completing in 1997. This reflects the changing basis of critical care courses in 1996/1997, when several universities were expanding into regional areas and hospitals that had been unable to run courses themselves were able to join a university program.

The majority of hospitals involved reported having a combined Critical Care Unit with both Intensive Care and Coronary Care/High Dependency patients, although 24 (30.4%) of the respondents had undertaken their course in a hospital with separate Intensive Care and Coronary Care Units (see Table 6.2). The majority of the Critical Care units were classified as level 2 ICUs, capable of providing multi-system life support for several days (DHS, 1997).

Hospital No.	No. of respondents (% of total)	Type of Critical Care Unit	ICU Level	No. of Critical Care Beds
1	24 (30.8%)	Separate ICU and CCU	3	12
2	8 (10.3%)	Combined Critical Care	1	5
3	4 (5.1%)	Combined Critical Care	2	6
4	6 (7.7%)	Combined Critical Care	2	5
5	4 (5.1%)	Combined Critical Care	2	10
6	13 (16.7%)	Combined Critical Care	3	11
7	5 (6.4%)	Combined Critical Care	2	6
8	14 (17.9%)	Combined Critical Care	2	12

Table 6.2:
Type of Critical Care Unit where critical care nursing course undertaken.

Factors attracting respondents to undertake critical care nursing courses.

The respondents ranked seven factors by level of importance in attracting them to apply to undertake a critical care nursing course. These seven factors were: the acute nature of critical care nursing, opportunity to deliver a high standard of patient care, joining an 'elite' group of nurses, having enjoyed working in the area, improving employment opportunities, gaining knowledge/expertise, and more rewarding work. The results of their rankings are presented in Table 6.3.

Ranking	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**N/A**
FACTOR	**Number of respondents (% of total)**							
Gaining knowledge /expertise	36 (46.2)	30 (38.5)	5 (6.4)	5 (6.4)	1 (1.3)	0	0	1 (1.3)
Opportunity to deliver a high standard of patient care	15 (19.2)	13 (16.7)	21 (26.9)	12 (15.4)	9 (11.5)	4 (5.1)	3 (3.8)	1 (1.3)
Acute nature of critical care nursing	10 (12.8)	18 (23.1)	15 (19.2)	15 (19.2)	10 (12.8)	8 (10.3)	1 (1.3)	1 (1.3)
Had enjoyed working in the area	9 (11.5)	5 (6.4)	11 (14.1)	18 (23.1)	15 (19.2)	9 (11.5)	3 (3.8)	8 (10.3)
Improving employ-ment opportunities	8 (10.3)	6 (7.7)	9 (11.5)	7 (9.0)	14 (17.9)	26 (33.3)	5 (6.4)	3 (3.8)
More rewarding work	7 (9.0)	6 (7.7)	13 (16.7)	16 (20.5)	21 (26.9)	12 (15.4)	1 (1.3)	2 (2.6)
Joining an elite group of nurses	2 (2.6)	0	1 (1.3)	2 (2.6)	2 (2.6)	13 (16.7)	49 (62.8)	9 (10.3)

Table 6.3: Respondents' rankings of factors attracting them to apply to undertake a critical care nursing course (n = 78)

1 = most important, 7 = least important, N/A = Not applicable or not ranked

As can be seen from Table 6.3, gaining knowledge and expertise was ranked as the most important factor by a large group of 36 respondents (46.2%) and another 30

respondents (38.5%) ranked it second most important. The opportunity to deliver a high standard of patient care and the acute nature of critical care nursing were also ranked highly by significant numbers of the respondents with 28 (35.9%) ranking them '1' or '2'. Joining an elite group of nurses was only ranked most important by two respondents (2.6%) with a large percentage (62.8%) ranking it least important.

In order to determine if there were any differences in rankings of these factors by different genders or age groups the data was split and re-analysed. The data was collapsed by combining the frequencies of ranks '1' and '2' for each of the factors, in order to facilitate the comparison. The results of these analyses are presented in Tables 6.4 and 6.5

	FEMALE (n=59)		MALE (n=19)		Mann-Whitney U Significance (2 tailed)
FACTOR	Ranked 1 or 2	% of females	Ranked 1 or 2	% of males	
Gaining knowledge/expertise	51	86.4%	15	78.9%	0.713
Opportunity to deliver a high standard of patient care	22	37.3%	6	31.6%	0.847
Acute nature of critical care nursing	20	33.9%	8	42.1%	0.838
Had enjoyed working in the area	13	22%	1	5.3%	0.095
Improving employment opportunities	7	11.9%	7	36.8%	**0.038**
More rewarding work	10	16.9%	3	15.8%	0.389
Joining an elite group of nurses	2	3.4%	0	0%	0.685

Table 6.4: Comparison of factors attracting females and males to undertake a critical care nursing course (n = 78).

The statistical significance of any differences between the rankings of males and females was able to be tested using a Mann-Whitney U test. As can be seen from Table 6.4, the only factor with a statistically significant ($p<0.05$) difference in ranking is that of improving employment opportunities, which tended to be ranked higher by males than females. Enjoying working in the area appears to have been ranked as more important by females but this was not statistically significant.

When analysing the age group data presented in Table 6.5 it appears that gaining knowledge and expertise was ranked as more important by the older age groups and that the acute nature of critical care nursing was more important to the 22-29 year olds. These differences were unable to be statistically tested due to the numbers in the groups, particularly the small number in the 22-29 year age group.

	AGE GROUP					
	22-29yrs (n=7)		30-39yrs (n=50)		40-49yrs (n=20)	
FACTOR	Ranked 1 or 2	%	Ranked 1 or 2	%	Ranked 1 or 2	%
Gaining knowledge/expertise	5	71.4%	41	82%	19	95%
Opportunity to deliver a high standard of patient care	2	28.6%	19	38%	7	35%
Acute nature of critical care nursing	5	71.4%	15	30.6%	8	40%
Had enjoyed working in the area	2	28.6%	10	20%	2	10%
Improving employment opportunities	0	0	9	18%	4	20%
More rewarding work	0	0	11	22%	2	10%
Joining an elite group of nurses	0	0	2	4%	0	0

Table 6.5: Comparison of factors attracting different age groups to undertake a critical care nursing course (n = 77)

Factors attracting respondents to undertake a regional critical care nursing course.

The respondents also ranked seven factors by level of importance in attracting them to apply to undertake their critical care nursing course in a regional hospital. These seven factors were: family reasons for living in the regional area, high standards of nursing care in the regional hospital, regional critical care course seen to be of a high standard, lifestyle opportunities in the regional area, good support structures in the regional hospital, not wanting to move to a metropolitan area, and familiarity with the regional hospital (ie. worked there prior to the course). The results of their rankings are presented in Table 6.6.

Ranking	1	2	3	4	5	6	7	N/A
FACTOR	Number of respondents (% of total)							
Family reasons for living in the regional area	39 (50)	10 (12.8)	6 (7.7)	3 (3.8)	5 (6.4)	1 (1.3)	5 (6.4)	9 (11.6)
Did not want to move to metropolitan area	21 (26.9)	20 (25.6)	7 (9.0)	5 (6.4)	8 (10.3)	1 (1.3)	11 (14.1)	5 (6.4)
Regional critical care course seen to be of a high standard	10 (12.8)	11 (14.1)	13 (16.7)	14 (17.9)	11 (14.1)	8 (10.3)	4 (5.1)	7 (9.0)
Lifestyle opportunities in the regional area	5 (6.4)	9 (11.5)	9 (11.5)	9 (11.5)	5 (6.4)	16 (20.5)	15 (19.2)	10 (12.8)
Familiarity with the regional hospital	4 (5.1)	10 (12.8)	11 (14.1)	9 (11.5)	3 (3.8)	11 (14.1)	6 (7.7)	24 (30.8)
Good support structures in the regional hospital	3 (3.8)	8 (10.3)	11 (14.1)	13 (16.7)	15 (19.2)	13 (16.7	9 (11.5)	6 (7.7)
High standards of nursing care in the regional hospital	3 (3.8)	6 (7.7)	17 (21.8)	15 (19.2)	17 (21.8)	9 (11.5)	4 (5.1)	7 (9.0)

Table 6.6: Respondents' rankings of factors attracting them to undertake a REGIONAL critical care nursing course (n = 78)

1 = most important, 7 = least important, N/A = Not applicable or not ranked

The results of this section of the survey show that the nurses' personal lives were very important in their choice of undertaking a critical care nursing course in a regional hospital. The two most highly rated factors were family reasons for living in the area; with 39 respondents (50%) ranking this '1'; and not wanting to move to a metropolitan area, with 41 respondents (52.5%) ranking this '1' or '2'. This is further supported by the fact that only 14 of the respondents (17.9%) applied to undertake a critical care nursing course in a metropolitan hospital as well as the regional hospital. Of those 14, 10 respondents stated that they did not take up a place in a metropolitan course because they preferred to live in the regional area.

In order to determine if there were any differences in rankings of factors attracting these nurses to regional critical care courses by different genders or age groups the data was again split and re-analysed. The data was collapsed by combining the frequencies of ranks '1' and '2' for each of the factors. The results of these analyses are presented in Tables 6.7 and 6.8

	FEMALE (n=59)		MALE (n=19)		Mann-Whitney U Significance (2 tailed)
FACTOR	Ranked 1 or 2	% of females	Ranked 1 or 2	% of males	
Family reasons for living in the regional area	37	62.7%	12	63.2%	0.859
Did not want to move to metropolitan area	33	55.9%	8	42.1%	0.180
Regional critical care course seen to be of a high standard	16	27.2%	5	26.3%	0.881
Lifestyle opportunities in the regional area	8	13.6%	6	31.6%	**0.024**
Familiarity with the regional hospital	11	18.7%	3	15.8%	0.718
Good support structures in the regional hospital	9	15.3%	2	10.5%	0.924
High standards of nursing care in the regional hospital	8	13.6%	1	5.3%	0.801

Table 6.7: Comparison of factors attracting females and males to undertake a REGIONAL critical care nursing course (n = 78).

As can be seen from Table 6.7, the only factor with a statistically significant difference in ranking is that of lifestyle opportunities in the regional area, which tended to be ranked higher by males than females.

When analysing the data grouped by age in Table 6.8 it appears that the high standard of the regional critical care course was more important to the younger age group. Fifty-seven percent of the 22-29 year olds ranked this factor '1' or '2' compared to only 28.6% and 15% in the other age groups. Family reasons for living in the regional area appear to be less important to the 30-39 year olds with only 53.1% ranking this '1' or '2' compared to over 80% in both the other groups. Again, none of these results could be statistically tested for significance due to the size of the groups.

	AGE GROUP					
	22-29yrs (n=7)		30-39yrs (n=50)		40-49yrs (n=20)	
FACTOR	Ranked 1 or 2	%	Ranked 1 or 2	%	Ranked 1 or 2	%
Family reasons for living in the regional area	6	85.7%	26	53.1%	16	80%
Did not want to move to metropolitan area	3	42.9%	25	50%	12	60%
Regional critical care course seen to be of a high standard	4	57.1%	14	28.6%	3	15%
Lifestyle opportunities in the regional area	0	0	13	26%	1	5%
Familiarity with the regional hospital	0	0	13	26%	1	5%
Good support structures in the regional hospital	0	0	7	14%	4	20%
High standards of nursing care in the regional hospital	1	14.3%	7	14.3%	1	5%

Table 6.8: Comparison of factors attracting different age groups to undertake a REGIONAL critical care nursing course (n = 77).

Employment gained by graduates following completion of the course

A large majority of the respondents gained employment in the regional critical care unit where they undertook their course (course unit) after they had completed the program. Table 6.9 shows that 59 respondents (75.7%) gained full-time or part-time work in their course unit, and a small number (n=4; 5.1%) gained casual work in their course unit. For further analysis the data was split into those who had pre-course experience in the regional hospital and those who had not. Not surprisingly, Table 6.9 also shows that the respondents were more likely to gain full-time or part-time employment in their course unit if they had previously worked in the regional hospital (88.2% compared to 38.9%). In interpreting this data it must be noted that no differentiation was made between those who sought such employment and those who did not.

TYPE of EMPLOYMENT gained in critical care unit where course undertaken.	**OVERALL**	**EXPERIENCE in REGIONAL HOSPITAL PRIOR to UNDERTAKING COURSE**	
		Yes (n = 59)	**No (n=18)**
Full time employment	34 (43.6%)	28 (47.5%)	6 (33.3%)
Part-time employment	25 (32.1%)	24 (40.7%)	1 (5.6%)
Casual employment	4 (5.1%)	3 (5.1%)	1 (5.6%)
Not employed or employed elsewhere	14 (17.9%)	4 (6.7%)	10 (55.6%)

Table 6.9: Respondents' Post-course Employment (n = 77)

Retention of Regional Critical Care Course Graduates

Retention of the regional critical care course graduates was investigated in this study by calculating the yearly attrition rates for the respondents, which are presented in Table 6.10. In assessing this data it is important to note that all respondents (n=78) were at least three years post course completion at the time of the study, but only 66 respondents were more than four years post-course and 45 were more than five years post-course. The figures were able to be calculated yearly for attrition from the critical care unit where the course was undertaken, from regional critical care and from critical care overall. There were a few respondents who had left an area and then returned at a later time, which made calculation of attrition rates difficult. In order to minimise this problem; these respondents were deemed to have been retained in an area for the overall length of time that they had worked there, eg. if they had worked in critical care for two years, left for a year and then returned for another year they were deemed to have been retained for three years in total. Where identified, periods of maternity leave were not included in the time the person was deemed to have worked in an area.

Time post course	Course Critical Care Unit Attrition	Regional Critical Care Attrition	Critical Care Attrition
	n (% of valid group)	n (% of valid group)	n (% of valid group)
1 year (n = 78)	20 (25.6%)	10 (12.8%)	6 (7.7%)
2 years (n = 78)	5 (6.4%)	3 (3.8%)	2 (2.5%)
3 years (n = 78)	6 (7.6%)	5 (6.4%)	4 (5.1%)
4 years (n = 66)	5 (7.5%)	6 (9.1%)	4 (6.1%)
5 years (n = 45)	7 (15.5%)	10 (22.2%)	8 (17.7%)
Total attrition at time of study (n = 78)	43	34	24
AVERAGE YEARLY ATTRITION RATE	12.5%	8.2%	7.8%

Table 6.10: Yearly Attrition Rates

The average yearly attrition rate was calculated by adding the individual yearly rates and dividing by the total number of years.

From the data in Table 6.10, it can be seen that at twelve months post course completion there was high attrition of graduates from the critical care unit where they undertook the course, with lower attrition rates from regional critical care and overall critical care at this time. Also, the course institution attrition figures in the two to four year time span range between 6.4% and 7.6% compared with a range of 2.5% to 6.1% for overall critical care attrition. This reflects that some nurses may leave the institution where they undertake their course but still be retained in critical care nursing; for instance, 43 nurses (55% of the total) had left their course unit at the time of the study, but only 24 (31%) had left critical care nursing. The data also shows a significant increase in the attrition figures in all groups at the five-year period.

As well as looking at the retention of graduates in their course units it is important to consider that some nurses, who are not retained in the critical care area, may be still working in that regional hospital and therefore still contributing their skills and knowledge to the hospital outcomes. Seven of the respondents (9%) in this study indicated that they were currently working in the regional hospital in which they undertook their critical care course, in an area other than critical care.

In order to identify gender differences in relation to attrition rates the data was split and re-analysed. The results of this analysis are presented in Table 6.11. These data show much higher attrition rates for males than females during the first year following their course. In the subsequent years there is much less difference between the two groups. These patterns in the data may be affected by the small number of males in the group.

Time post course	Course Critical Care Unit Attrition		Regional Critical Care Attrition		Critical Care Attrition	
	Male	Female	Male	Female	Male	Female
1 year (n = 19 males, 59 females)	10 (52.6%)	10 (16.9%)	5 (26.3%)	5 (8.5%)	4 (21%)	2 (3.4%)
2 years (n = 19 males, 59 females)	1 (5.2%)	4 (6.7%)	1 (5.2%)	2 (3.4%)	1 (5.2%)	1 (1.7%)
3 years (n = 19 males, 59 females)	0	6 (10.2%)	0	5 (8.5%)	0	4 (6.8%)
4 years (n = 15 males, 51 females)	0	5 (9.8%)	1 (6.7%)	5 (9.8%)	0	4 (7.8%)
5 years (n = 9 males, 36 females)	1 (11%)	6 (16.7%)	3 (33.3%)	7 (19.4%)	2 (22.2%)	6 (16.7%)
Total attrition at time of study (n – 78)	12	31	10	24	7	17
AVERAGE YEARLY ATTRITION RATE	13.8%	12.1%	14.3%	9.9%	9.7%	7.3%

Table 6.11: Comparison of Males' and Females' Yearly Attrition Rates

Analysing attrition rates in relation to age groups did not reveal any significant differences between the 30-39 year group and the 40-49 year group. Attrition appeared to be higher in the 22-29 year group, but with only 7 respondents in this group it could not be deemed significant.

In assessing the retention of graduates in this study it is also important to recognise the inherent bias that may be present due to differences between respondents and non-respondents. This study achieved a response rate of 80.4% which is considered adequate to overcome major bias by some authors (Irvine & Evans, 1995), however if the residual non-respondents all left critical care nursing immediately following their course, this data would not be representative of the population. In order to identify possible bias the researcher obtained some data from the CNEs in relation to the non-respondents. This was simple data in relation

to the current employment of the non-respondents; no personal details were elicited. This data is presented in Table 6.12, which allows comparison to the study respondents.

	CURRENT EMPLOYMENT		
	Respondents (n = 78)	**Non-respondents (n = 22)**	**Total Sample Group (n = 100)**
Critical Care (CC) Nursing	**58 (74.4%)**	**10 (45.5%)**	**67 (67%)**
Course CC Unit	39 (50%)	4 (18.9%)	43 (43%)
Other Regional CC Unit	12 (15.4%)	1 (4.5%)	13 (13%)
Metropolitan CC Unit	3 (3.8%)	4 (18.9%)	7 (7%)
Other CC	4 (5.1%)	1 (4.5%)	5 (5%)
Not in Critical Care Nursing	**20 (25.6%)**	**6 (27.3%)**	**27 (27%)**
Course Institution	7 (9%)	1 (4.5%)	8 (8%)
Other Regional Hospital	7 (9%)	0	7 (7%)
Metropolitan Hospital	1 (1.3%)	1 (4.5%)	2 (2%)
Other	3 (3.8%)	4 (18.9%)	7 (7%)
Not employed	2 (2.6%)	0	2 (2%)
Unknown	**0**	**6 (27.3%)**	**6 (6%)**
Total	78 (100%)	22 (100%)	100 (100%)

Table 6.12: Current Employment of Sample Population (n = 100)

Factors contributing to the retention of graduates in critical care nursing

At the time of the survey 58 respondents were still currently working in critical care nursing and completed section two of the survey. The majority, 44 of this group (75.8%) reported currently working in an ICU, combined ICU/CCU or combined ICU/Cardiothoracic unit, as seen in Table 6.13. Thirty-six respondents (62.1%) reported working part-time, ranging from 8 to 36 hours per week, with a mean of 25.8 hours per week. Only 19 respondents (32.8%) were full-time workers, with the remaining three (5.1%) undertaking casual or agency work.

Type of Critical Care Unit	Number of respondents	% of total
Intensive Care Unit (ICU)	3	5.2
Combined ICU/CCU	31	53.4
Combined ICU/Cardiothoracic	10	17.2
Cardiac Care Unit (CCU)	6	10.3
Emergency Department (ED)	4	6.9
High Dependency Unit	1	1.7
Various (ie. Working in more than one type of unit)	3	5.2
Total	**58**	**100**

Table 6.13: Current employment by type of Critical Care unit (n = 58)

This group was asked to rank seven factors in order of importance in retaining them in the critical care area. These factors were: enjoying the work, flexibility in working hours, constant learning/stimulation, job security, teamwork aspects, limited alternatives due to living in a regional area, and support from co-workers. The results of these rankings are presented in Table 6.14.

Ranking	1	2	3	4	5	6	7	N/A
FACTOR	Frequency of ranking (% of respondents)							
Enjoy the work	34 (58.6)	8 (13.8)	8 (13.8)	3 (5.2)	1 (1.7)	2 (3.4)	1 (1.7)	1 (1.7)
Constant learning / stimulation	10 (17.2)	20 (34.5)	6 (10.3)	6 (10.3)	7 (12.1)	3 (5.2)	4 (6.9)	2 (3.4)
Flexibility in working hours	7 (12.1)	9 (15.5)	6 (10.3)	4 (6.9)	6 (10.3)	13 (22.4)	9 (15.5)	4 (6.9)
Job security	4 (6.9)	8 (13.8)	11 (19)	8 (13.8)	7 (12.1)	14 (24.1)	3 (5.2)	3 (5.2)
Limited alternatives due to living in regional area	6 (10.3)	3 (5.2)	5 (8.6)	3 (5.2)	2 (3.4)	6 (10.3)	28 (48.3)	5 (8.6)
Teamwork aspects	1 (1.7)	5 (8.6)	17 (29.3)	15 (25.9)	15 (25.9)	3 (5.2)	1 (1.7)	1 (1.7)
Support from co-workers	1 (1.7)	4 (6.9)	5 (8.6)	16 (27.6)	17 (29.3)	11 (19)	2 (3.4)	2 (3.4)

Table 6.14: Respondents' rankings of factors that retain them in critical care nursing, (n = 58)

1 = most important, 7 = least important, N/A = Not applicable or not ranked

The nature of critical care work appears to be a very important factor in retaining nurses in the area as 34 respondents (58.6%) ranked enjoyment of the work as most important and 30 (51.7%) ranked constant learning/stimulation as '1' or '2'.

The limitations of wanting to live and work in a regional area did not appear to be a significant factor in retaining the nurses in critical care, with 28 respondents (48.3%) ranking this factor as least important. Surprisingly, teamwork aspects and support from co-workers were not ranked highly either, indicating that the nature of the work was more important than the other workers in critical care.

The data was again split and reanalysed to determine any differences in gender or age groups. The results of these analyses are presented in Table 6.15 and 6.16. Mann-Whitney U testing in the gender analysis shows a significant difference ($p<0.05$) in ranking in only one factor, limited alternatives due to living in a regional area, with males ranking this proportionately higher than females. Males also ranked job security higher than females, but this was not significant at $p < 0.05$.

	FEMALE (n= 45)		**MALE (n=13)**		**Mann-Whitney U Significance (2 tailed)**
FACTOR	**Ranked 1 or 2**	**% of females**	**Ranked 1 or 2**	**% of males**	
Enjoy the work	34	75.6%	8	61.5%	0.336
Constant learning / stimulation	24	63.3%	6	46.2%	0.311
Flexibility in working hours	12	26.7%	4	30.8%	0.828
Job security	8	17.7%	4	30.8%	0.084
Limited alternatives due to living in a regional area	6	13.3%	3	23.1%	**0.018**
Teamwork aspects	5	11.1%	5	31.5%	0.597
Support from co-workers	5	11.1%	0	0	0.388

Table 6.15: Comparison of factors retaining females and males in critical care nnrsing (n = 58).

Analysis of the age group data in Table 6.16 shows some apparent differences, with the 30-39 year age group ranking flexibility in working hours higher than the other groups. This was further investigated to determine whether this was associated with parental status but there were no significant differences in rankings between those respondents in this age group with children at home and those without.

	AGE GROUP					
	22-29yrs (n=4)		30-39yrs (n=36)		40-49yrs (n=17)	
FACTOR	Ranked 1 or 2	%	Ranked 1 or 2	%	Ranked 1 or 2	%
Enjoy the work	3	75%	25	69.4%	14	82.4%
Constant learning / stimulation	2	50%	17	47.3%	11	64.7%
Flexibility in working hours	0	0	16	44.4%	0	0
Job security	2	50%	6	16.6%	3	17.6%
Limited alternatives due to living in a regional area	0	0	6	16.7%	2	11.8%
Teamwork aspects	1	25%	4	11.1%	1	5.9%
Support from co-workers	0	0	2	5.6%	3	17.6%

Table 6.16: Comparison of factors retaining different age groups in critical care nursing (n = 57)

Factors contributing to the attrition of graduates from critical care nursing

At the time of the survey 20 respondents reported that they were not currently working in critical care nursing and completed section three of the survey. As previously noted seven of this group (35%) were still working in the regional hospital where they undertook their course and another seven (35%) were working in other regional hospitals. Their specific areas of work are shown in Table 6.17. It is relevant to note that no respondents reported working in general medical/surgical nursing. This perhaps supports the view that a critical care nursing qualification may be associated with career advancement or entry to other specialties.

AREA OF WORK	No. of Respondents	Use critical care 'frequently'	Use critical care 'sometimes'
Administration/Management	4 (20%)	3 (15%)	1 (5%)
Nursing Education	3 (15%)	3 (15%)	
Community Health	2 (10%)	1 (5%)	
Cardiology related	2 (10%)	2 (10%)	
Renal Dialysis	2 (10%)	2 (10%)	
Emergency Department	2 (10%)		
High Dependency Unit	1 (5%)	1 (5%)	
Ambulance Service	1 (5%)	1 (5%)	
Not currently employed	3 (15%)		
TOTAL	**20 (100%)**	**13 (65%)**	**1 (5%)**

Table 6.17: Current employment by type of area outside critical care (n = 20).

It is also relevant to note that three respondents reported themselves as 'not working in critical care', but indicated that they worked in areas commonly defined as critical care, such as High Dependency and Emergency nursing. Perhaps this was due to their current workplace not meeting their perception of critical care nursing.

This group was also asked to indicate what type of critical care area they were working in when they decided to leave critical care nursing. Thirteen respondents (65%) indicated that they had been working in an ICU, combined ICU/CCU or combined ICU/Cardiothoracic unit, four (20%) were working in an ED, two (10%) were working in a CCU and one did not specify the type of unit. The number who had left ED was proportionately higher than the number of respondents who were currently working in ED (only 6.9% of the group who completed section two of the questionnaire) but the significance of this is difficult to determine given the small number of respondents completing section three.

This group of 20 respondents was asked to score the importance of eight factors in making them leave critical care nursing. These factors were: family reasons, personal reasons, staff shortages, lack of adequate support, shiftwork or roster issues, co-workers' personalities, nursing patients with poor outcomes, and promotion opportunity outside critical care. The scores applied for data analysis were: not applicable = 0, not important = 1, important = 2, and very important = 3. The frequencies of the responses and the mean scores for each factor are presented in Table 6.18.

Attrition factors	**Very important** n (%)	**Important** n (%)	**Not important** n (%)	**Not applicable** n (%)	**Mean Score**
Personal reasons	8 (40%)	4 (20%)	5 (25%)	3 (15%)	1.85
Shiftwork or Roster issues	3 (15%)	11 (55%)	3 (15%)	3 (15%)	1.70
Promotion opportunity	5 (25%)	5 (25%)	5 (25%)	5 (25%)	1.50
Family reasons	7 (35%)	2 (10%)	4 (20%)	7 (35%)	1.45
Lack of adequate support	2 (10%)	6 (30%)	6 (30%)	6 (30%)	1.26
Staff shortages	3 (15%)	5 (25%)	6 (30%)	6 (30%)	1.25
Nursing patients with poor outcomes	0	3 (15%)	14 (70%)	3 (15%)	1.00
Co-workers' personalities	2 (10%)	2 (10%)	8 (40%)	8 (40%)	0.90

Table 6.18: Respondents' ratings of factors contributing to their attrition from critical care nursing (n = 20)

As can be seen from Table 6.18, personal reasons and shiftwork or roster issues were important factors for the majority of the group. Twelve of the respondents (60%) rated personal reasons as important or very important and 14 (70%) rated shiftwork or roster issues as important or very important. Administrative issues such

as staff shortages and lack of adequate support were rated as not important or not applicable by 12 (60%) of the group. This indicates that personal factors were more important than workplace factors in making these nurses leave critical care nursing. Promotional opportunities outside of critical care nursing were also important to half of the group, again suggesting an association between critical care qualifications and career advancement.

This data was not split for analysis of gender or age groups because of the small number of respondents.

Use of critical care knowledge and skills outside the critical care area.

Despite having left critical care nursing, 14 (70%) of the group who completed section three of the questionnaire indicated that they *frequently* or *sometimes* used the skills and knowledge that they gained from their critical care nursing course in their current jobs. Only two respondents (10%) reported not using this knowledge and skill at all, and four (20%) reported occasional use.

Of the group who reported frequent use of their critical care skills & knowledge, three were employed in Nursing education roles, three in Administration/ Management, and the remaining seven used these skills in a variety of clinical practice areas (see Table 6.17). It is also important to note that six of the seven respondents still working in the hospital where they undertook their course, and four of the seven working in other regional hospitals reported *frequent* use of their critical care skills. These results support the view that regional hospitals still benefit from the increased knowledge and skills of critical care nurses even when those nurses no longer work in critical care areas.

Respondents' future plans

The respondents who were still working in the critical care area (n=58) were asked to indicated whether they planned to leave critical care. A large majority of forty four respondents (75.9%) indicated that they were not planning to leave critical care nursing for at least two more years, six respondents (10.3%) indicated they would leave within 12 months, and four (6.9%) indicated they would leave within two years. The remaining four respondents were unsure when they would leave, making comments such as:

- Critical care is my second job, not sure if I will leave or return to it full-time,
- Will leave as soon as my own business venture allows,
- I am quite happy, but I would leave if a suitable position arose,
- Currently moving into an administration position but will continue to work in ICU part-time.

The respondents who were not currently working in critical care nursing (n=20) were asked whether they had considered returning to critical care. Fifteen respondents (75%) answered yes, giving reasons such as:

- Enjoy the work (four respondents)
- Shiftwork will suit me better once I have children
- I miss the work and my colleagues
- Want to maintain my skills/knowledge
- If NUM (Nurse Unit Manager) role available.

The remaining five respondents (25%) in this group reported that they had not considered returning to critical care nursing, giving reasons such as:

- Loss of [critical care] skills,
- Lack of promotion opportunity, less financial reward, stress, shiftwork,

- Ambulance work provides good pay, conditions and recognition,
- I hate shift work,
- Heavy workload, abusive, non-compliant patients.

Conclusion

The results of this questionnaire show that the great majority of regional critical care graduates in this group have been retained for significant periods in the regional hospitals where they undertook their critical care course. Many of those who were not retained in their course institutions have been working in other regional or metropolitan critical care units.

The results also showed that some of the most important factors in attracting and retaining nurses in regional critical care appear to be personal in nature, with many indicating that they do not want to move away from the regional area.

Critical care skills and knowledge were used frequently by many of the respondents who had left critical care nursing, indicating continuing benefit to the nurses and to the institutions employing them, which in many cases were regional hospitals.

These results overall support the benefits of providing educational programs in regional hospitals to allow the local nurses to gain skills and knowledge that will improve patient care within these hospitals.

Chapter 7: DISCUSSION

Retention of qualified critical care nurses within regional settings is an important factor in the provision of appropriate health care for regional Victorians (MA International, 2001, p.127). This study investigated the retention of nurses who have undertaken critical care nursing courses within regional centres between 1995 and 1997. Overall, the results of the study show that a significant number of these nurses are still working within regional critical care areas up to six years after completing their courses and it highlighted a number of important factors related to turnover and current employment of the respondents.

This chapter will explore the findings of this study using the study aims and the theoretical framework elicited from the literature review to guide the discussion.

Demographics of the study group

Demographically, this group had a larger proportion of males compared with published workforce data. The Australian Institute of Health and Welfare (AIHW) reported that males comprised only 11.5% of the *intensive care* nursing workforce and 9.5% of the *rural* nursing workforce in 1996 (AIHW, 1999, p.60) compared to 24.4% males in this study group. Crockford (1989, p.34) also reported only 11.2% of his study group were males. The larger proportion of males in this group of regional critical care nurses may be a sample bias or it may indicate that males working in regional centres are specifically attracted to critical care nursing, perhaps due to a paucity of other opportunities for advancement.

This study group was also older overall when compared to the AIHW (1999), Huntley's (1994) and Crockford's (1989) data. AIHW (1999, p.60) reported 78% of *rural* nurses and 69% of *intensive care* nurses were over the age of 30 years in 1996, and Huntley (1994, p.16) quoted a similar percentage of her sample of rural

nurses being that age. Only 34% of Crockford's (1989, p.32) group were over 30 years of age compared to over 90% of nurses in this current study. The differences between Crockford's results and the other data may simply reflect the ageing of the nursing workforce that has occurred over the last two decades (Petty, Twigg & Young, 2002). The older population in this current study may also indicate that regional nurses tend to gain more experience prior to undertaking a critical care course than their metropolitan counterparts, although there is no published data in relation to this.

Factors attracting nurses to undertake regional critical care nursing courses:

The factors ranked most important by the questionnaire respondents in this study in attracting them to undertake a critical care nursing course were 'gaining knowledge/expertise', the 'opportunity to deliver a high standard of patient care', and 'the acute nature of critical care nursing'. These results are supported by the data from the focus group and by other researchers (Ferguson & Ogle, 1996; Crockford, 1989). The ability to extend skills and knowledge was considered a major attractive aspect of critical care nursing by 57% of Crockford's study group (1989, p.48) and this theme was also identified from three separate areas of data collection in Ferguson & Ogle's work (1996, p.26, 38, 46). The nature of critical care work was considered a major attraction by 65% of Crockford's group, and this included both acuity and the ability to give expert care (1989, p.48). Ferguson & Ogle's respondents were attracted by the challenge and excitement of critical care nursing practice and by wanting to provide excellent nursing care to their patients (1996, p.38-39). It appears from the results in this current study that regional critical care nursing holds the same attractions for nurses as metropolitan critical care, despite the majority of regional critical care units being lower acuity, Level two units (DHS, 1997).

Respondents in this questionnaire survey also identified some *other* factors that were important in attracting them to apply to undertake a critical care nursing course. One factor identified was that the workload in critical care was seen as less than that in the general wards. This factor has also been identified in other studies (Ferguson & Ogle, 1996; Crockford, 1989) and appears to be related to the higher nurse: patient ratios in critical care and perceived lesser physical demands of looking after one or two patients.

Another attraction factor identified by this research group is that of gaining autonomy/ authority. As stated by one respondent:

> *[attracted by] belief that I would have a higher level of involvement in patient care and treatment and a certain level of autonomy not allowed in general ward area.*

The attraction of a higher level of autonomy is again supported by the literature in Crockford's (1989), Ferguson & Ogle's (1996), and Blegen's (1993) studies. The focus group participants also cited autonomy as an attraction and two of the respondents who were still currently working in critical care cited it as an important factor in retaining them in the area. This is also supported by the results from Darvas & Hawkins' (2002) more recent study, where working relationships between nursing and medical staff were rated as extremely important in providing nurses with a good working environment. Medical staff having respect for nurses' abilities is essential in facilitating the nurse's autonomy in decision-making. Many studies have also noted the importance of good nursing leadership to recruitment and retention, which would facilitate autonomous decision-making by the staff (Duffy, 1993; Irvine & Evans, 1995; Leveck & Jones, 1996).

'Joining an elite group of nurses' in critical care was identified by the focus group in this study and also by Ferguson & Ogle (1996, p.24) as a possible attraction factor. The questionnaire survey results and Crockford's (1989) study, however, fail to support this as a major attraction factor. This is perhaps affected by the fact that this factor would not be seen as an altruistic or worthwhile reason, compared to the other reasons ranked more highly by the nurses, such as improving patient care.

The results in this study show that personal issues, such as family responsibilities, were most important in attracting nurses to regional critical care courses. This result is widely supported in the literature (Huntley, 1994; Muus et al 1993; Hegney et al, 2002). The regional critical care course being seen to be of a high standard was also rated as an important factor in attracting nurses to these courses. In support of this, when asked if there were *other* factors that were important to them in attracting them to apply to undertake a critical care nursing course in a regional hospital, several respondents cited the regional course structure as a factor. The type of course structure attractive to the respondents was variable. Undertaking a course that was very specialised (eg. focussed on CCU) was cited as an attraction, as was undertaking a course that was more generic, offering experience in several areas. A couple of respondents indicated that a hospital-based course was more attractive to them than a university-based one. These results indicate that, although personal issues are very important in attracting nurses to undertake courses in regional hospitals, the courses themselves must also be of a high standard and meet the perceived needs of the prospective students.

In considering factors attracting nurses to undertake regional critical care courses it is important to also consider the effect of having an opportunity to work in an area prior to committing to undertake a course. Over 60% of the respondents in this questionnaire survey had gained at least six months critical care experience prior to

undertaking their course, allowing them to experience the environment and the nature of the work. Some of the focus group participants also commented on being offered work in the critical care area that then lead them to undertake the critical care course. Ferguson & Ogle (1996, p.41) also noted that a number of their respondents had enjoyed working in the area and wished to gain knowledge and skills to enhance their critical care practice. Oermann's (1995) results also highlighted the recruitment benefits of offering experience in critical care areas at an undergraduate level. Over 75% of the respondents had worked in the regional hospital prior to their application to undertake the critical care course at the hospital. Familiarity with the regional hospital may have therefore played a part in attracting them to the course, although only 5% of the group rated this as the *most* important factor. Courtney, Edwards, Smith and Finlayson (2002) showed a positive effect of undergraduate experience in rural areas on the potential recruitment of qualified staff. It seems evident then, that offering supported experiences in the regional critical care environment will encourage nurses to identify the attractions of regional critical care practice and the importance of appropriate education.

Employment gained by graduates of regional critical care nursing courses:

The large majority of the respondents in this study gained full or part-time work in the unit where they undertook their course on completion of the program. This was more likely to occur if they had been employed by the regional hospital prior to undertaking the course. Although not previously reported in the literature, this result is supported anecdotally by discussion with critical care CNEs both in metropolitan and regional areas.

When analysing *current* employment in this study the results show that the majority of respondents working in critical care do not work full-time. Rates of full-time work

versus part-time work are not frequently reported in the research literature, but the results in this study are significantly different from Crockford's (1989) study. His results showed that 69% of the group who were still in critical care nursing worked full-time compared to only 32.8% in this current study. Published workforce data indicates decreasing levels of full-time work over recent years. The AIHW (1999, p.60) reported that 55.9% of ICU nurses worked full-time in 1996 and the recent national workforce survey of ICUs reported that full-time workers were no longer the majority in Victorian ICUs in 1999 (Williams, Ogle & Leslie, 2001, p.51). The low rate of full-time workers in this study may reflect that even more nurses were choosing to work part-time in 2001 than in previous years (Petty, Twigg & Young, 2002, p.7), or it may reflect a regional difference. This result has significance for those planning for workforce needs in the future.

Retention of regional critical care course graduates

As previously noted, it is difficult to identify benchmark rates for retention or attrition of nurses in particular specialty areas. The results in this study indicate an average yearly attrition rate of 12.5% per year from the critical care unit where the respondents undertook their critical care course. The average yearly attrition rate from critical care nursing overall was only 7.8% in these respondents. These results appear to compare favourably with the general, rural and critical care literature (Williams et al., 2001; Hegney et al., 2002; Stratton et al., 1991; Duffy, 1993; Bratt et al. 2000) where attrition rates between 12% and 28% are quoted. The stability of the labour force provided by these respondents is also supported by the fact that over 75% of those still working in critical care nursing intend to remain for at least another 2 years. The results in this study therefore support the retention benefits of providing education programs in regional areas.

Comparative gender and age group analysis of attrition showed higher rates of attrition in males and in the younger age group in this study. Although the small sample numbers preclude significance testing, this trend is congruent with findings in Muus et al's (1993) study where nurses who were not planning to stay in rural areas were proportionately more likely to be male and under 30 years of age.

Factors contributing to retention and attrition of critical care nursing graduates

In this study the factors ranked as most important in retaining the respondents in critical care nursing were 'enjoying the work' and 'constant learning /stimulation' indicating that it again is the nature of the work that is most attractive. This result is congruent with the literature (Ferguson & Ogle, 1996; Crockford, 1989; Boyle et al., 1999) and supported by the data from the focus group interview and by comments made even by those respondents who had left critical care nursing. As one respondent wrote:

> *The decision [to leave] was very difficult as I was an ACN (Associate Charge Nurse) and really enjoyed my work. The only reason that I left was for the promotion/ experience.*

The finding in relation to the importance of 'constant learning /stimulation' highlights the importance of ongoing education opportunities for regional critical care nurses, which is also well supported by the literature (Huntley, 1994; DHS, 2001; Ferguson & Ogle, 1996; Crockford, 1989).

Retention factors related to limited alternative employment opportunities in regional areas did not rate highly amongst this group of respondents. Interestingly, 48% of respondents who remained in critical care nursing rated 'limited alternatives due to

living in a regional area' as *least important* in retaining them in the area. Comparative gender analysis showed, however, that males rated this factor and also 'job security' proportionately higher than females. Half of the respondents who had left critical care nursing rated 'promotion opportunity' as *important* or *very important* in making them leave, indicating that some alternative opportunities were available. The literature in this area is limited, but Boyle et al. (1999) found that 'opportunity elsewhere' was negatively correlated to critical care nurses' intention to stay in their job and this was supported by Irvine and Evans' (1995) meta analysis. The literature on rural retention does not focus on this area although there tends to be the assumption that recruitment into rural areas is more of a problem than retention (Huntley, 1994; Stratton et al., 1991). Hegney and McCarthy (2000) note that "In many cases nurses who wish to continue nursing [in rural areas] must remain in employment no matter how dissatisfied they are..." (p.348). Overall, this suggests that regional nurses may stay in their jobs, despite decreasing job satisfaction, because of a lack of attractive alternatives, but in the current study the respondents did not report this as a major factor. Perhaps this is related to the fact that critical care units tend to be located in larger regional centres where there are more likely to be other job opportunities compared to smaller, more remote centres.

Choi et al. (1989), Schader et al. (2001), Darvas & Hawkins (2002) and Ferguson & Ogle (1996) all found that rostering practices and flexibility in working hours could have a significant effect on job satisfaction and subsequent turnover. The results in this study support the literature, as 'flexibility in working hours' was ranked moderately highly as a retention factor by the nurses who remained working in critical care and 'shiftwork or roster issues' was rated as an important attrition factor by the majority of the nurses who had left critical care nursing. These results highlight the importance of flexible rostering practices that allow nurses to maintain control over their personal lives. This is exemplified by one respondent's comment:

I hate night shift and evening to day rosters. I'm now working Monday – Thursday 9 to 5, also no weekends – I can be with my 3 kids (important at this stage of my life).

Personal issues were found in this study to be very important factors in the attrition of nurses from critical care. Sixty percent of the nurses who had left critical care rated 'personal reasons' and 45% rated 'family reasons' as *important* or *very important* in making them leave. These findings were supported by the data from the focus group interview and by the literature (Huntley, 1994; Hegney et al., 2002; Muus et al., 1993). Personal factors cited by the respondents in this study were: leaving to raise children, moving overseas, or moving to a more remote area where critical care work was not available.

Despite other authors' findings that aspects of teamwork and interpersonal relationships are important in nursing retention (Darvas & Hawkins, 2002; Woods, 1994; Blegen, 1993; Bratt et al., 2000), the respondents in this study did not rank these aspects highly. Only one respondent who remained in critical care nursing ranked 'teamwork aspects' as the *most important* retention factor and only one ranked 'support from co-workers' as the *most important.* Perhaps this is related to a phenomena noted by Bratt et al. (2000, p.315) that as nurses gained experience in an area, their sense of group cohesiveness decreased. These respondents had all worked in critical care nursing for at least four years, so perhaps they focussed on other aspects of their work environment when responding to the survey questions.

Use of critical care knowledge and skills

The results of this study indicate that graduates of regional critical care nursing courses utilise their critical care skills in a wide variety of practice areas. Fifty percent of the respondents were still working in the unit where they undertook their

critical care nursing course and another 24% were working in other critical care areas including ICU, CCU, ED, and HDU. The majority of the remaining 26% were using their critical care skills and knowledge in other areas, ranging from administrative positions to forensic health. Utilisation of these skills and knowledge ranged from clinical practice in areas such as cardiology, renal dialysis and the ambulance service, to the education of other staff and the use of organisational and problem-solving skills by respondents in education or management positions. This area has not been addressed within the research literature, but these results are supported by data from the focus group interview and by evidence from the researcher's own experience in following up critical care course graduates over many years.

Overall, these results highlight the positive outcomes of the critical care nursing courses studied. These outcomes specifically relate to the retention of the graduates within the specialty and within the hospitals where they undertook their critical care courses, and also to the use of their critical care nursing skills and knowledge when working outside of critical care.

The results also support the view that job satisfaction is a multifactorial entity, and that the effects of job satisfaction on nursing turnover are mediated by the behavioural intentions of the nurse. These behavioural intentions may be affected by the nurses' personal lives, and by issues specific to critical care practice or regional areas. The results are therefore congruent with the previous research in this area and fit well within the theoretical framework identified in the literature review.

Chapter 8: CONCLUSION

As previously noted, the results of this study highlight the positive outcomes of regional critical care nursing courses during the years 1995 to 1997. Attrition of the graduates of these courses is lower than data published in the general, rural and critical care nursing literature and their use of skills and knowledge gained in the courses appears widespread.

Overall, the study results in relation to the factors that contribute to recruitment and retention of regional critical care nurses are congruent with the previous literature showing that recruitment and retention are complex, multi-factorial issues. The major factors identified in this study were the attraction of the nature of critical care work and of the opportunity for initial and ongoing education, and the importance of personal factors and flexibility of rostering in contributing to recruitment and retention. Other factors noted as important in the attraction or retention of nurses in critical care were lower workload levels and a higher level of autonomy. An important factor in the attrition of nurses in this study was the opportunity for promotion outside the critical care area.

Implications of the research findings

As retention of nurses is a multi-factorial issue no one strategy will provide the answer for hospitals and specific practice areas wishing to improve their turnover (Ferguson & Ogle, 1996; DHS, 2001). Specific retention issues that may be targeted have been highlighted by the results of this study; the impact of rosters and shiftwork on nurses' personal lives, gender differences, the ageing regional critical care workforce and the significant number of part-time workers.

Personal factors play a vital part in the recruitment and retention of regional critical care nurses. The results in this study highlight the need for managers/administrators to consider the importance of nurses' personal lives when organising rostering systems. Flexibility in rostering and consideration of specific roster requirements may have positive impacts on retention of nurses and perhaps on preventing nurses turning to part-time or casual work to meet their personal needs. The benefits of a flexible roster system may not only improve retention, but may also provide recruitment incentive (Teahan, 1998, p.366).

Comparative gender analysis highlighted several differences between the responses of the males and females in this study. Males comprised a significant proportion (24.4%) of the group, higher than in other published data, and were more likely to be attracted to critical care nursing courses by perceived employment opportunities. Subsequent to this the males in the group reported higher attrition rates than the females. Males who remained working in critical care also ranked limited alternative employment opportunities as a more important retention factor than was seen in the female rankings. Further research is required in this area to determine the significance of this, however this data suggests that males are more likely to see critical care education as a stepping stone to other areas of career advancement. This is problematic if the aim of a critical care course is to provide staff for critical care units. Perhaps further research would suggest an alternative avenue for advancement that could be taken by those who do not see critical care nursing as an end in itself. Alternatively, as other authors suggest, retention of nurses who are looking for career advancement could be achieved by improving promotion opportunities within critical care nursing (Ferguson & Ogle, 1996, p.73; MA International, 2001, p.102).

The ageing of the nursing workforce is clearly identified in the literature (AIHW, 1999; Petty et al., 2002) and the results of this study suggest that a large number of regional critical care nurses are in older age groups. This has significance for workforce needs in the future, as many of these nurses will retire or decrease their working hours and need to be replaced. Ensuring that their replacements have gained the necessary education and experience to maintain quality patient care will be a significant challenge.

The ageing of the workforce also has implications for work practices. Petty et al. (2002, p.6) suggest that flexibility in working patterns, ongoing education needs and prevention of workplace injuries are important issues in retention of older nurses. These issues need to be addressed for regional critical care nurses to maintain clinical competence and fitness for work and lay the groundwork for a system that values the experience and skill of the older nurse.

The large number of part-time workers identified in this study may be related to the importance of their personal lives. Personal issues may cause a nurse to consider part-time work as a viable alternative, particularly within inflexible roster systems. As noted above, flexibility in rostering practices may allow nurses to meet their personal needs, and encourage them to return to full-time work. Other incentives for full-time workers may also be instigated, such as improved access to education.

Other factors contributing to the high proportion of part-time workers may be the age of the group, economic factors, or the inability to cope with the physical or emotional demands of full-time work in critical care nursing. It could therefore be a strategy used by these nurses to balance their need to maintain employment against their wish to leave the job. Reducing the hours of work may thus be seen as a form of attrition, particularly in nurses who may have limited employment alternatives.

Further investigation of this area would allow development of strategies to improve this situation.

Limitations of the study

The limitations of this research study are related to the use of a single, homogenous focus group, the limitations inherent in a mailed questionnaire survey, and the small numbers in the survey sample.

The focus group in this study was all female and recruited from the one institution, which may have created bias. The use of multiple focus groups involving males and graduates from other institutions would have enriched the data, but this was unachievable due to time and geographic constraints. The focus group was therefore used only as a preliminary component of the research, to assist in enriching the information gained from the literature review and the researcher's own experience.

Bias may have also been created in the questionnaire data by the 'self selection' of respondents that is inherent in a mailed survey. This survey achieved an 'acceptable' response rate of just over 80% (Irvine & Evans, 1995), however those who chose not to participate or who could not be contacted may represent a group with significantly different views and experiences from the respondents (de Vaus, 1995, p.108). Another potential limitation is that the survey instrument consisted mainly of closed questions to maintain brevity. Providing the respondents with lists of options to choose from when answering questions limits their ability to provide in-depth responses and utilise their own thoughts.

Generalisability of the results is limited by the small overall numbers in the questionnaire sample group and by the study's focus on Victorian regional areas. The study may have limited application in metropolitan areas and in other Australian states as different health systems, management practices, critical care unit characteristics and critical care nursing course structures may apply. Different management practices, critical care unit characteristics and course structures may also be present across the eight hospitals involved in this study, potentially contributing to varying outcomes for course graduates. These differences, however, were unable to be clearly identified due to the small numbers of respondents from each hospital.

This study also does not take into account recent changes in the university sector, which have significantly increased the costs of undertaking post-graduate courses. These changes may well affect the factors that attract nurses to specific courses.

Further research directions

Extension of this study using a larger sample group drawn from both regional and metropolitan hospitals would provide greater validity and also allow comparison between regional and metropolitan graduates. Such a study could also investigate the effect of increases in university fees on the recruitment of critical care nurses. Using focus group interviews in varying regional and metropolitan areas would be useful to provide more in-depth, contextual data upon which to base recommendations. Also, study of other critical care nurses working in regional hospitals would be beneficial to identify whether retention rates and factors contributing to recruitment and retention are different for those nurses who have undertaken their critical care nursing course in another institution.

Research focussed on the extent of, reasons for and consequences of part-time work in regional critical care would also be beneficial. This would help to quantify the issue and identify strategies to encourage nurses to return to full-time work. It could also identify strategies to minimise any negative affects of this phenomenon.

In conclusion

Critical care nursing is, to many, an attractive area to work, due to its high acuity and the opportunity to extend skills and knowledge. Regional critical care units need to utilise this fact to encourage nurses to enter the specialty and undertake appropriate education if the units are to maintain an optimal level of appropriately skilled and qualified nurses. As noted in this study, the provision of an 'entry' option, whereby nurses are offered the opportunity to obtain supported experiences in critical care units can be an important recruitment tool. This strategy allows nurses to identify the attractions of the area and to overcome the 'fear of the unknown'.

Once recruited to the critical care area, regional nurses must be given the opportunity to gain the appropriate education in order to practice at a specialist level. As personal factors have been shown to be very important in nurses' recruitment and retention it is vital that these education programs continue to be offered within regional centres. This minimises the impact on personal lives and also the cost to participants (i.e., in travel or relocation), particularly when university fees must also be paid.

In order to successfully run tertiary education programs in conjunction with universities, regional institutions need to provide both financial and human resources to support the clinical education of the students. This study supports the view that this expenditure and effort is worthwhile. The outcomes of these courses

appear to be positive in terms of staff retention and use of knowledge and skills gained in the programs. The low attrition rates identified indicate that such courses may contribute to a stable staff group of experienced nurses, albeit a majority of part-time workers. Also, the use of critical care skills and knowledge both inside and outside of the critical care units may improve patient care and outcomes.

Less tangible benefits may also be gained, such as access to academic staff at the university to assist with education or research activities, deployment of a CNE in the critical care unit, and increasing interest in education from other staff. Overall, regional critical care units and regional nurses can benefit significantly from these collaborative education programs.

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APPENDIX A: Letter to Potential Focus Group Participants

Tania Elderkin,
56 Roslyn Road,
Belmont, 3216
Date

Dear ……..,

I am writing to you to ask you to participate in the research project that I am undertaking as part of my studies for Master of Health Science (Nursing) at Victoria University. This study is entitled 'Retention of graduates of Critical Care Nursing courses undertaken in Victorian regional centres between 1995 and 1997'. The Human Research Ethics Committee, Faculty of Human Development, Victoria University, has approved the proposal for this research.

As a preliminary part of this research I am planning to conduct a small group interview with graduates of …… critical care nursing course from years other than 1995-1997 and I would be pleased if you would consider taking part. Attached is an information sheet that explains the research and the group interview. The interview would take approximately one hour and would be conducted in a private home. If you are agreeable to taking part I will ask you to sign a consent form prior to participation, as part of the Ethics committee's requirements for the research.

If you would be happy to participate in a group interview or have further queries regarding the research please contact me:

Phone:	During work hours:	……..
	Home:	52432435
Email:	Work:	……..
	Home:	elderkin@geelong.hotkey.net.au
Mobile:	0419 353399.	

The date and time for the interview will be negotiated so that it is suitable for all participants.

Thanking you in anticipation,

Tania Elderkin, RN, BAppSc (AdvNur), GradDip CCN

APPENDIX A: (continued)

Information Sheet for Focus Group Participants:

This research is a survey study to investigate what happens to graduates of critical care nursing courses undertaken in regional centres in Victoria.
The objectives of the research are:

1. To examine the factors that attract registered nurses to undertake regional, tertiary-based critical care nursing courses.
2. To identify what forms of employment graduates of regional, tertiary-based critical care nursing courses obtain subsequent to their graduation.
3. To investigate the current retention rate of nurses who graduated from regional, tertiary-based critical care nursing courses between 1995-1997 in regional critical care units, in the hospitals in which they undertook their courses and in the critical care nursing field in general.
4. To identify the factors that contribute to the attrition of graduates from regional critical care units.
5. To investigate whether graduates who have left the regional critical care unit in which they undertook their course still believe that they are utilising the skills and knowledge that they gained from the course.
6. To identify in what types of clinical areas, other than regional critical care units, that graduates utilise the skills and knowledge gained from their critical care course.

The study will be undertaken in two parts. The first part will involve interviewing a small group of regional critical care nursing graduates to identify some main themes related to the above objectives. It is this component of the research that you have been asked to participate in.

The focus group interview will include 5 - 6 graduates of regional critical care courses, some of whom no longer work in the area. The group discussion will last approximately one hour and will be mediated by myself. A tape recording will be taken of the session and I may also take some notes. This data will be transcribed and analysed to identify the main ideas related to the retention of regional critical care graduates and the factors that affect retention. These ideas will be utilised to formulate a questionnaire to survey the graduates of Victorian regional critical care courses during the years 1995-1997.

Your participation in this interview is entirely voluntary and should you choose not to be involved, or to withdraw from the study at any time there will be no repercussions. The data obtained in the study will be kept confidential. Pseudonyms will be used to maintain your anonymity in the data collected and no individual will be able to be identified in the transcribed data or in the final research report.

As with any group discussion the potential for conflict between participants can arise. Should this occur and become in any way distressing to you, you may choose to leave the discussion at any time. A professional counsellor will be available for assistance if required; the counsellor's contact details will be available to all participants at the time of the focus group interview.

APPENDIX A: (continued)

Information Sheet (continued):

The results of this study will help to inform those planning and administering critical care nursing course in regional areas in the future. The data obtained from the group session and also the final research report will be made available to you. Should you wish to obtain a copy of the data or report please contact me after the 30th October 2001 on ph. 52432435.

Attached is a consent form that I would ask you to complete prior to participation in the group interview. I will contact you with details of the date, time and venue for the focus group in the next two weeks.

Thanking you in anticipation,

Tania Elderkin, RN, BAppSc (AdvNur), GradDip CCN.

Any queries about your participation in this project may be directed to the research supervisor (Diane Cheung, ph. 9365 2604). If you have any queries or complaints about the way you have been treated, you may contact the Secretary, University Human Research Ethics Committee, Victoria University of Technology, PO Box 14428 MC, Melbourne, 8001 (telephone no: 9688 4710).

APPENDIX B: Letter to Focus Group Participants

Tania Elderkin,
56 Roslyn Road,
Belmont, 3216
Date

Dear ……..,

Thank you for agreeing to participate in the research project that I am undertaking as part of my studies for Master of Health Science (Nursing) at Victoria University. As you may remember from my original letter, the study is entitled 'Retention of graduates of Critical Care Nursing courses undertaken in Victorian regional centres between 1995 and 1997'. The Human Research Ethics Committee, Faculty of Human Development, Victoria University, has approved the proposal for this research.

The focus group interview is a preliminary part of this research and I have recruited 5 graduates of …… critical care nursing course from years other than 1995-1997. The interview should take approximately one hour, with time and venue details as outlined below.

Time/date: **Thursday 31st May, 8pm.**
Venue: ……..

Attached is an information sheet regarding the research project and a consent form which I would ask you to sign and bring to the interview, as formal consent is a part of the Ethics committee's requirements for the research.

If you have any further queries regarding the research please contact me:

Phone:	During work hours:	……
	Home:	52432435
Email:	Work:	……
	Home:	elderkin@geelong.hotkey.net.au
Mobile:	0419 353399.	

Thanking you in anticipation,

Tania Elderkin, RN, BAppSc (AdvNur), GradDip CCN

APPENDIX C: Demographic Form for Focus Group

Focus Group Participants - Demographic data

Please answer the following questions:

1. Please state your age: .....yrs

2. Which of the following best describes your current social situation:

   Never married, no children

   Married (or defacto), no children or children not living with you

   Married (or defacto), children at home

   Divorced/Separated, no children or children not living with you

   Divorced/Separated, children at home

   Other Please describe

   .....

3. Please state your current nursing position and department
   (eg. CNS, ICU)

   .....

4. Please state your qualifications

   .....

Thank you for your participation

APPENDIX D: Victoria University Ethics Approval

Faculty Human Research Ethics Committee

MEMORANDUM

TO: Diane Cheung
Principal Investigator
Nursing

FROM: Dr Dennis Hemphill
Chair
Human Research Ethics Committee
Faculty of Human Development

DATE: May 17, 2001

SUBJECT: **Approval of application involving human subjects**

Thank you for your submission detailing amendments to the research protocol for the project titled, ***Retention of graduates of Critical Care Nursing courses undertaken in Victorian regional centres between 1995-1997*** (HRETH.FHD.001/01).

The proposed amendments have been accepted by the Faculty Human Research Ethics Committee and approval for application HRETH.FHD.001/01 has been granted from 19/03/01 to 30/08/01.

Please note that, the Faculty Human Research Ethics Committee must be informed of the following: any changes to the approved research protocol, project timelines, any serious or unexpected adverse effects on participants, and unforeseen events that may effect continued ethical acceptability of the project. In these unlikely events, researchers must immediately cease all data collection until the Committee has approved the changes.

If you have any queries, please do not hesitate to contact me on ext 4486.

The Committee wishes you all the best for the conduct of the project.

Dr Dennis Hemphill
Chair
Human Research Ethics Committee
Faculty of Human Development

E:\ethics\correspondence\memo\finalapproval.doc

APPENDIX E: Focus Group Consent Form

Victoria University of Technology

PO Box 14428
Melbourne City
MC 8001 Australia

Telephone:
(03) 9365 2830
Facsimile:
(03) 9365 2832

St Albans Campus
School of Nursing
McKechnie Street
St Albans

VICTORIA UNIVERSITY OF TECHNOLOGY

Consent Form for Participants in Focus Group

CERTIFICATION BY PARTICIPANT:

I, ...

of

certify that I am at least 18 years old* and that I am voluntarily giving my consent to participate in the research project entitled:

Retention of graduates of Critical Care Nursing courses undertaken in Victorian regional centres between 1995 and 1997.

being conducted at Victoria University of Technology by:

Tania Elderkin, student in the Masters of Nursing program.

I certify that the objectives of the project, together with any risks to me associated with my participation in the Focus group discussion, have been fully explained to me by:

Tania Elderkin.

and that I freely consent to participation and the recording and documentation of my contribution to the Focus group discussion.

Procedure:

Participation in a focus group discussion with 3-4 other graduates of regional critical care nursing courses. Focus group to be facilitated by Tania Elderkin and will be tape recorded.

I certify that I have had the opportunity to have any questions answered and that I understand that I can withdraw from this project at any time and that this withdrawal will not jeopardise me in any way.

I have been informed that the information I provide will be kept confidential.

Signed: ..... }

Witness other than the researcher: } **Date:** .....

.....}

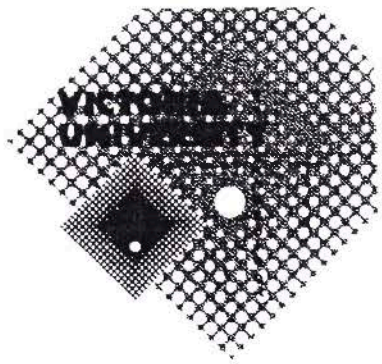
Any queries about your participation in this project may be directed to the research supervisor (Name: Diane Cheung, ph. 9365 2604). If you have any queries or complaints about the way you have been treated, you may contact the Secretary, University Human Research Ethics Committee, Victoria University of Technology, PO Box 14428 MC, Melbourne, 8001 (telephone no: 9688 4710).

APPENDIX F: Letter to Directors of Nursing

Victoria University of Technology
PO Box 14428
Melbourne City
MC 8001 Australia

Telephone:
(03) 9365 2830
Facsimile:
(03) 9365 2832

St Albans Campus
School of Nursing
McKechnie Street
St Albans



Dear .....

As part of my studies for my Masters of Health Science at Victoria University I am undertaking research into the retention of critical care nurses who undertake their courses in regional Victorian hospitals. I am aiming to survey graduates of regional critical care nursing courses during the years 1995-1997 to determine the retention rate of these nurses and the factors which affect their retention both within the regional centres and within critical care practice. I am therefore writing to you to request permission to obtain assistance from your Clinical Nurse Educator - Critical Care (or other designated staff member) in contacting the graduates from your institution.

I am writing to all Victorian regional institutions that were involved in critical care nursing education in these years and therefore hope to have a large pool to sample. The graduates thus identified will be sent the attached questionnaire to determine their employment subsequent to the course and their perceptions of the factors that affected their employment. An information sheet outlining the research process is attached for your consideration. A copy of the entire research proposal will be sent to you should you wish to review it.

The assistance I would require to successfully complete my research is in sending the questionnaires to the graduates from your institution between the years 1995 and 1997. If the Clinical Nurse Educator could identify the appropriate people from your course records I will supply the questionnaires and stamped envelopes to be sent out. This would be approximately 6-12 questionnaires.

Participation in this study is entirely voluntary and should anyone choose not to be involved, or to withdraw from the study at any time there would be no repercussions. The data obtained in the study will be kept confidential and no individual or institution will be identified by name or inference in the final research report. The proposal and questionnaire for this research have been approved by the Victoria University, Faculty of Human Development, Human Research Ethics committee.

APPENDIX F: (continued)

The results of this study will help to inform those planning and administering critical care nursing courses in regional areas in the future, and to facilitate this the final research report will be sent to you once it is completed.

If you have any further queries regarding this research please do not hesitate to contact the researcher: Tania Elderkin, ph. 52432435 or the project supervisor Diane Cheung, School of Nursing, Victoria University, ph. 93652604.

Thanking you in anticipation,

Tania Elderkin, RN, BappSc (AdvNur), GradDip CCN.

APPENDIX G: Information Sheet for Directors of Nursing and Survey Participants

This research is a survey study to investigate what happens to graduates of critical care nursing courses undertaken in regional centres in Victoria.
The objectives of the research are:

1. To examine the factors that attract registered nurses to undertake regional, tertiary-based critical care nursing courses.
2. To identify what forms of employment graduates of regional, tertiary-based critical care nursing courses obtain subsequent to their graduation.
3. To investigate the current retention rate of nurses who graduated from regional, tertiary-based critical care nursing courses between 1995-1997 in regional critical care units, in the hospitals in which they undertook their courses and in the critical care nursing field in general.
4. To identify the factors that contribute to the attrition of graduates from regional critical care units.
5. To investigate whether graduates who have left the regional critical care unit in which they undertook their course still believe that they are utilising the skills and knowledge that they gained from the course.
6. To identify in what types of clinical areas, other than regional critical care units, that graduates utilise the skills and knowledge gained from their critical care course.

The study will be undertaken in two parts. The first part will involve the researcher interviewing a small group of regional critical care nursing graduates to identify some main themes related to the above objectives.
The second part of the study will involve sending a questionnaire to as many graduates of regional critical care course undertaken between 1995 and 1997 as possible. The questionnaire will be based on the themes identified in the small group interview.

The questionnaire returns will be analysed using a computerised statistical package.

Informed consent will be obtained from the participants prior to their participation and the researcher will ensure confidentiality of the data. The participants have the right to withdraw from the study at any time without penalty.

Any queries about your participation in this project may be directed to the research supervisor (Name: Diane Cheung, ph. 9365 2604). If you have any queries or complaints about the way you have been treated, you may contact the Secretary, University Human Research Ethics Committee, Victoria University of Technology, PO Box 14428 MC, Melbourne, 8001 (telephone no: 9688 4710).

APPENDIX H: Letter to Potential Survey Respondents

Tania Elderkin,
PO Box 1673,
Geelong, 3220
Date

Dear Critical Care Graduate

As part of my studies for my Masters of Health Science at Victoria University I am undertaking research into the retention of critical care nurses who undertake their courses in regional Victorian hospitals. I am therefore writing to invite you to participate in this important research by completing the attached questionnaire.

The results of this study will help to inform those planning and administering critical care nursing courses in regional areas in the future.

Your participation in this survey is entirely voluntary and should you choose not to be involved there will be no repercussions. You may receive a follow up letter related to this research project in the next three weeks. The reason for this second letter is to encourage a high response rate to the questionnaire, but should you have chosen not to participate you should ignore this letter. No further contact will be made with you.

The data obtained in the study will be kept confidential and no individual or institution will be able to be identified in the research report. The code number you may notice on your questionnaire is only utilised to identify the regional area and year of your critical care course for analysis purposes. You have been included in the study because you are a graduate of a critical care course run between 1995 and 1997. I have asked your nurse educator to forward this letter to all graduates. As the researcher, I do not have access to your contact details, ensuring confidentiality.

A brief outline of the research process is attached for your consideration and the final research report will be made available to you if required. Should you wish to obtain a copy of the report please contact me after the 31st December 2001 on ph. (03) 52432435.

I will not be asking you to sign a formal consent form, as your consent to participation will be assumed by the return of your completed questionnaire. Could you please return the questionnaire in the attached stamped, addressed envelope by **(date)** to allow data analysis to proceed.

If you have any further queries regarding this research please do not hesitate to contact myself or the project supervisor Diane Cheung, School of Nursing, Victoria University, ph. (03) 93652604.

Thanking you in anticipation,

Tania Elderkin, RN, BAppSc (AdvNur), GradDip CCN,

APPENDiX I: Questionnaire

Questionnaire

For graduates of Regional Critical Care Nursing Courses

Instructions:

Please answer the questions and tick or number the appropriate boxes as requested, ie. ☑ or [1]

The questionnaire is divided into 3 parts. You only have to complete TWO parts of the questionnaire.

Section ONE: ALL participants please complete this section

Section TWO: For participants who are currently working in a critical care area

Section THREE: For participants who are NOT currently working in a critical care area.

When completed, please return the questionnaire to the researcher in the envelope provided by:

(date)

SECTION ONE: for ALL participants

1. Your gender: Female ☐ Male ☐

2. Your age group: 22-29yrs ☐ 30-39yrs ☐
   40-49yrs ☐ >49yrs ☐

3. Which of the following best describes your <u>current</u> marital status:
   - Never married ☐
   - Married (or defacto), ☐
   - Divorced/Separated, ☐
   - Other ☐ Please describe
     .....

4. Which of the following best describes your <u>current</u> parental status:
   - children at home ☐
   - never had children ☐
   - children not living with you ☐
   - Other ☐ Please describe
     .....

5. In what year did you initially register as a Division 1 nurse (or equivalent if registered interstate or overseas)?
   .....

6. What critical care nursing experience did you have <u>prior</u> to undertaking your post-graduate critical care nursing course?

   [Critical Care experience defined as experience gained in Intensive Care, Coronary Care, Emergency Department or High Dependency Nursing]

   - None ☐
   - Undergraduate rotation only ☐
   - Less than 6 months (as a Division 1 RN) ☐
   - More than 6 months (as a Division 1 RN) ☐

7. When did you *commence* the post-graduate critical care nursing course?

.....(month) .....(year)

8. When did you *complete* the post-graduate critical care nursing course?

.....(month) .....(year)

9. a) Please rate the following factors in order of importance to you in leading you to apply to undertake a critical care nursing course.

(1 = most important, 7 = least important, X = not applicable to you)

- The acute nature of critical care nursing ☐
- Opportunity to deliver a high standard of patient care ☐
- Joining an 'elite' group of nurses ☐
- Had enjoyed working in the area ☐
- Improving employment opportunities ☐
- Gaining knowledge/expertise ☐
- More rewarding work ☐

b) Please state any other factors that may have led you to apply to undertake a critical care nursing course.

.....

.....

10. Were you working in the regional hospital (ie. outside the metropolitan area of Melbourne) where you undertook your critical care nursing course, prior to undertaking the course?

Yes ☐ No ☐

If YES, for how long prior to the course were you employed at that regional hospital? (include time employed as a student nurse if applicable).

.....years, ...months

11. a) Please rate the following factors in importance to you in leading you to apply to undertake a critical care nursing course **IN A REGIONAL HOSPITAL** (ie. outside the metropolitan area of Melbourne)..

(1 = most important, 7 = least important, X = not applicable to you)

Family reasons for living in the regional area ☐
High standards of nursing care in regional hospital ☐
Regional critical care course seen to be of a high standard ☐
Lifestyle opportunities in the regional area ☐
Good support structures in the regional hospital ☐
Did not want to move to a metropolitan area ☐
Familiarity with the regional hospital ☐
(ie. worked there prior to course)

b) Please state any other factors that may have led you to apply to undertake a critical care course **IN A REGIONAL HOSPITAL**.

.....

.....

12. a) Did you also apply to undertake a critical care course in a metropolitan hospital? Yes ☐ No ☐

b) If YES, what were your reasons for applying to a metropolitan hospital: (please tick any appropriate responses)

Higher patient acuity level ☐
Better employment prospects ☐
Increasing chances of gaining entry to a course ☐
Personal reasons ☐
Other (please specify) ..... ☐

12 c) If you did apply to a metropolitan hospital, what were your reasons for accepting a place in the *regional* critical care nursing course ?

Preferred the regional hospital ☐

Preferred to live in the regional area ☐

Not successful in the metropolitan application ☐

Other (please specify) ☐

.....

13. a) Subsequent to your completion of the critical care nursing course did you gain employment in the regional critical care unit where you undertook the course? Yes ☐ No ☐

b) If YES, on what basis were you employed?

Full-time ☐ Part-time ☐

Casual ☐ Other ☐

(Please specify).....

14. Are you currently employed in a critical care area?

Yes ☐ *Go to Section TWO*

No ☐ *Go to Section THREE*

SECTION TWO: for participants who are currently employed in a critical care area.

1. Where are you currently employed?
   - In the critical care unit where you undertook your course ☐
   - In another *regional* critical care unit ☐
   - In a *metropolitan* critical care unit ☐
   - Other (please specify) ..... ☐

2. In what type of critical care area are you currently employed?
   - Cardiac Care Unit ☐
   - Combined Cardiac Care/Intensive Care Unit ☐
   - Emergency Department ☐
   - High Dependency Unit ☐
   - Intensive Care Unit ☐
   - Other (please specify) ..... ☐

3. On what basis are you currently employed?
   - Full-time ☐
   - Part-time ☐ approximate hours per week? .....
   - Casual ☐ approximate hours per week? .....
   - Other ☐(Please specify).....

4. a) Please rate the following factors in order of importance in keeping you working in this area.

(1 = most important, 7 = least important, X = not applicable to you)

Enjoy the work ☐

Flexibility in working hours ☐

Constant learning/stimulation ☐

Job security ☐

Teamwork aspects ☐

Limited alternatives due to living in a regional area ☐

Support from co-workers ☐

b) Please state any other factors that are important in keeping you working in this area.

.....

.....

5. What is the total length of time that you have worked in critical care nursing since completing your critical care course?

.....years, ...months

6. What is the total length of time that you have worked in REGIONAL CRITICAL CARE areas since completing your critical care course?

.....years, ...months

7. What is the total length of time that you have worked in the regional critical care unit IN WHICH YOU UNDERTOOK YOUR CRITICAL CARE COURSE since completing the course?

.....years, ...months

8. Do you expect that you will leave critical care nursing to work in another area?

- Yes, within the next 6 months ☐
- Yes, within 6 to 12 months ☐
- Yes, within 1-2 years ☐
- No, not within the next 2 years ☐
- Other (please specify) ..... ☐

Thank you very much for your contribution to this research.

SECTION THREE: for participants who are not currently employed in the critical care area.

1. Where are you currently employed?
   In the regional hospital where you did your critical care course ☐
   In another *regional* hospital ☐
   In a *metropolitan* hospital ☐
   Not currently employed ☐
   Other (please specify) ..... ☐

2. What type of area are you currently working in?
   General medical/surgical nursing ☐
   Nursing education ☐
   Administration/Management ☐
   Community Health ☐
   Other (please specify) ..... ☐

3. When did you leave your position in the regional critical care unit where you undertook your critical care nursing course?
   .....(month) .....(year)

4. What is the total length of time that you have worked in critical care nursing since completing your critical care nursing course?
   .....years, ...months

5. What is the total length of time that you have worked in REGIONAL critical care areas since completing your critical care course?
   .....years, ...months

6. In what type of critical care area were you employed when you decided to leave critical care nursing?

Cardiac Care Unit	☐
Combined Cardiac Care/Intensive Care Unit	☐
Emergency Department	☐
High Dependency Unit	☐
Intensive Care Unit	☐
Other (please specify)	☐

7. a) Please rate the importance of the following factors in making you leave critical care nursing. (Please circle the most appropriate response)

	not important	not applicable	important	Very important
Family reasons	1	2	3	4
Personal reasons	1	2	3	4
Staff shortages	1	2	3	4
Lack of adequate support	1	2	3	4
Shiftwork or Roster issues	1	2	3	4
Co-workers' personalities	1	2	3	4
Nursing patients with poor outcomes	1	2	3	4
Promotion opportunity outside of critical care	1	2	3	4

b) Please state any <u>other</u> factors that were important in making you leave this area.

.....

.....

8. Do you feel you are currently utilising the skills and knowledge that you gained from your critical care nursing course?

No, not at all	☐
Yes, occasionally	☐
Yes, sometimes	☐
Yes, frequently	☐

Please explain your answer:

.....

.....

9. Have you considered returning to critical care nursing?

Yes ☐ No ☐

Why or Why not?

.....

.....

.....

.....

Thank you very much for your contribution to this research.

APPENDIX J: Regional Hospital Ethics Approval

All correspondence to be addressed to
Chief Executive Officer
PO Box

BASE HOSPITAL

ISG:DMK

October 23, 2001.

Ms Tania Elderkin,
56 Roslyn Road,
BELMONT. 3216

Dear Ms Elderkin,

Re: **Retention of graduates of Critical Care Nursing courses undertaken in Victorian Regional centres undertaken 1995-1997**

The above project was considered by the combined Health Services and Hospital Ethics Committee at its meeting held on Thursday, 20th September 2001 and was formally approved.

Yours sincerely,

[redacted]

Executive Director – Clinical Services.
Secretary, Ethics Committee.

CONFIDENTIAL

Acute hospital
Aged care
Rehabilitation
Psychiatric care
Palliative care
Community support
Health promotion

Human Research Ethics Committee
Phone:
Fax:

Tuesday, 30 October 2001

Tania Elderkin
Nursing Education
Barwon Health, The Geelong Hospital
P.O. Box 1673
Geelong, Victoria, 3220

Dear Ms Elderkin

Re: Study Title: Retention of Graduates of Critical Care Nursing Courses Undertaken in Victorian Regional Centres Between 1995-1997

HREC Reference Number: 0032/2001

Thank you for your letter of 22nd of October 2001 (and subsequent email) responding to the amendments requested by the HREC. I am pleased to advise you that the Human Research Ethics Committee of the Health Care Group has approved the above project

The project has been approved for the period 30/10/2001 to 31/12/2002.

Would you please note that the following standard conditions apply:

a. *Limit of Approval*: approval is limited strictly to the research proposal as submitted in your application.
b. *Variation to Project*: any subsequent variations or modifications you might wish to make to your project must be notified formally to the committee for further consideration and approval. If the committee considers that the proposed changes are significant, you may be required to submit a new application for approval of the revised project.
c. *Incidents of Adverse Effects*: researchers must report immediately to the committee anything which might affect the ethical acceptance of the protocol including adverse effects on subjects or unforeseen events that might affect continued ethical acceptability of the project.
d. *Progress Reporting*: please be aware that the Human Research Ethics Committee requires all researchers to submit a report on each of their projects yearly, or at the conclusion of the project if it continues for less than a year. Failure to submit a progress report may mean approval for this project will lapse. **The first progress report for this project is due on 31/10/2002.**
e. Auditing: all projects may be subject to audit by members of the committee.

If you have any further queries on these matters, or require additional information, please contact me on or e-mail: Human Research Ethics Committee information and ethics documentation is now available on the Health Care Group *intranet (local access only)* at *http://*

Please quote the HREC reference number and the title of the project in any future correspondence.

On behalf of the committee, I wish you well in your research.

Yours Sincerely

[redacted]

Secretary
Human Research Ethics Committee
Health Care Group