

2006

Enrolled nurses' attitudes, subjective norms, intentions and behaviour related to independent medication administration

Donna Sayers
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**ENROLLED NURSES' ATTITUDES, SUBJECTIVE NORMS, INTENTIONS AND
BEHAVIOUR RELATED TO INDEPENDENT MEDICATION ADMINISTRATION**

**A Thesis Submitted in Partial Fulfilment of the
Requirements for the degree of
Bachelor of Nursing Honours**



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School of Nursing, Midwifery and Postgraduate Medicine

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April, 2006

ABSTRACT

The purpose of this quantitative descriptive research study was to investigate Enrolled Nurses' attitudes, intentions and behaviour in relation to independent medication administration (IMA). This research was necessary as a significant number of Enrolled Nurses (ENs) are now able to administer medications up to Schedule Four level, without supervision when they have completed a medication administration programme (MAP). This change in the scope of practice for the EN will eventually be introduced nationally as recommended by the National Review of Nursing Education (2002). Anecdotal reports suggest that IMA is causing concern for the EN but little or no research has been done to date on this issue. The target population for this study were ENs working in Western Australia (WA), who were members of the Australian Liquor, Hospitality and Miscellaneous Workers Union ($n=1820$). ENs were invited to complete a postal survey that contained fixed response questions about attitudes, intentions and behaviour related to IMA and demographic questions. The survey questions were developed specifically for this study and were based on the theoretical framework of Ajzen and Fishbein's theory of reasoned action. Space was provided for additional comments. The response rate was 40% and the final sample size was 729. The instrument was pilot tested with five participants prior to administration. A test-retest was conducted with thirty participants to assess reliability using percent agreement and kappa statistics. The result of the pilot reliability testing indicated that the questionnaire was suitable for this study. Data related to research questions were analysed using descriptive statistics and chi-square tests. Descriptive statistics included frequencies, percentages, measurement of central tendency and dispersion. The findings of this study indicate that 51.4% of ENs ($n=360$) had completed the MAP and 16.9% ($n=119$) intended to complete the programme within the next 12 months. The ENs' attitudes related to IMA were positive, the majority agreeing that administering medications independently should be part of their role. Significant facilitating factors and barriers have been identified affecting the intention and behaviour of ENs in relation to completing a MAP and practicing IMA. The facilitating factors include 'wages'; there was an expectation that ENs would be paid more for practicing IMA. Those who had not completed a MAP would consider doing a MAP if they were paid more. The second factor was related to 'future employment'; there was an expectation that those ENs that are deemed competent to practice IMA have improved their chances of future employment. The third factor related to 'confidence'; most ENs felt confident and enthusiastic about practicing IMA. The fourth factor related to the 'role of the EN'. There

was an expectation that ENs should administer medications independently as part of their role, therefore expanding the scope of practice giving their role a more positive step. The fifth factor related to 'quality of care'. There was an expectation that the quality of care would improve if ENs were independently administering medications. Most ENs believe that administering medications independently would /does allow them to deliver holistic care to the patient. The sixth factor related to 'hospital policy'. Among those ENs employed in a work place where the policy allows them to practice IMA, if the employer offered the EN the opportunity to participate in an MAP they would more likely accept. The seventh factor related to 'employment'. Those ENs working in nursing specialities that are aged care or medical services were more likely to have completed a MAP. The barriers include stress for the EN, time issues to complete the MAP, work place support if medication error is made, and rural/regional/remote location. Fear about drug calculations was considered a problem for some ENs however not a barrier to commencing a MAP. Recommendations for clinical practice include all health care facilities in WA allowing ENs to practice IMA and all ENs to be given the opportunity to complete a MAP, not just those selected by management. External units need to be developed for rural/remote/regional areas. A short refresher course on drug calculations should be provided prior to commencing the MAP for those ENs that feel that drug calculations are a problem. To help facilitate a pathway for future career advancement it is recommended that the title of Enrolled Nurse should be changed to Registered Nurse Division 2 when a Diploma level of competency has been achieved. Implications for clinical practice include managers promoting a team approach due to the increase of different skill mix competencies achieved among nurses and eliminate barriers between RNs and ENs if they become evident. With the expected increase in numbers of ENs wanting to complete a MAP additional places will need to be made available. Staff Development nurses will need to provide supervision and support to this increase of numbers of ENs while the practice component of the MAP is completed on the wards. There will be many changes in the foreseeable future for the role of the EN as the scope of nursing practice increases and these changes may have an impact on health care provision. The most important thing to be monitored during these changes will be the quality of patient care.

DECLARATION

I certify that this thesis does not, to the best of my knowledge and belief:

- (i) incorporate without acknowledgment any material previously submitted for a degree or diploma in any institution of higher education;
- (ii) contain any material previously published or written by another person except where due reference is made in the text; or
- (iii) contain any defamatory material.

Signed _____

Dated 24-08-2006

Donna Sayers.

ACKNOWLEDGEMENTS

I wish to thank my parents Bernard Sayers (deceased) and Sarah Sayers for without their love and support especially over the last couple of years none of this would have been possible.

I wish to express my sincere thanks to Associate Professor Sue Nikoletti and Helen Myers, my supervisors, for their expertise, superior knowledge of statistical research and thesis preparation. I am grateful for their professional support, intellectual advice and the enthusiastic encouragement awarded me throughout this study. I also wish to thank Therese Shaw for her statistical advice for this study.

I would like to acknowledge The Australian Liquor, Hospitality and Miscellaneous Workers Union of Western Australia and the Enrolled Nurses who are members of this union who became part of this research. This union's participation made it possible for me to obtain the data for this research, and for that I am grateful.

I wish to thank my friend Jacqui Huntley and her mother Joan Welch who I owe many debts of gratitude for their support and recovery of my work from computer technical problems.

I also wish to acknowledge the Western Australian School of Nursing Network who honoured me with financial assistance from the H E Harris Scholarship fund.

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CHAPTER ONE

Introduction

Introduction and Background to the Study

Until recently only Registered Nurses (RNs) could administer Schedule Four medications in the ward environment without another nurse checking the medication. Following a change in nursing policy in some hospitals in Western Australia (WA), Enrolled Nurses (ENs) have commenced independent administration of medications, classified up to Schedule Four level, after they have completed an Enrolled Nurse Medication Administration Programme (MAP). Anecdotal reports suggest that this new practice is causing concern for some ENs although MAPs are attracting large numbers of interested nurses. Independent medication administration (IMA) is likely to be introduced nationally as it was a key recommendation of the National Review of Nursing Education (2002). This research study investigated ENs' attitudes, intentions and behaviour in relation to IMA. This proposed research is important, as this is a new scope of practice for ENs that has not been previously studied.

Problem Statement

ENs' attitudes towards IMA may affect their willingness to undergo professional development and their confidence in undertaking this role. Anecdotal reports suggest that IMA is causing concern for the EN. However, no research had been undertaken to investigate this issue.

The Purpose of This Study

The purpose of this study was to describe ENs' attitudes, subjective norms, intentions and behaviour related to IMA in WA using a conceptual framework based on the theoretical framework of Ajzen and Fishbein's Theory of Reasoned Action. The research results were expected to identify barriers and facilitating factors that affect ENs' willingness to administer medications independently.

Research Questions

The research questions for this study were

1. How many ENs are currently administering medications independently in WA?
2. How many ENs are intending to complete the MAP?

3. What are the attitudes and subjective norms of ENs in WA towards IMA?
4. What is the relationship between ENs' attitudes, subjective norms, intentions and behaviour in relation to IMA?
5. Are ENs' intentions and behaviours towards IMA affected by external variables, for example age, gender, employment, prior nursing experience or education?

Definition of Terms

Enrolled Nurses

Nurses registered in Division 2 of the register and governed by the regulations and policies of the Nurses Board of Western Australia. They are considered a second level nurse and work under the direction of a Registered Nurse. They hold an Associate Diploma or a Certificate IV through the Department of Technical and Further Education (TAFE) or have completed hospital based training.

Registered Nurses

Nurses registered in Division 1 of the register and governed by the regulations and policies of the Nurses Board of Western Australia. They are considered a first level nurse and can work without supervision. They hold a three year university degree or a three year hospital based diploma.

Independent medication administration

For this study administration of prescribed medications classified up to Schedule Four to a patient by a nurse without supervision.

Attitude

In this study, attitude is defined within the Theory of Reasoned Action (TRA) theoretical framework as the perceptions and beliefs of ENs in relation to IMA.

Subjective Norms

In this study, subjective norm is defined within the Theory of Reasoned Action (TRA) theoretical framework as the person's beliefs and perceptions of the expectations of significant others.

The Significance of the Study

This investigation was designed to provide a means of gaining information about ENs' attitudes, intentions and behaviour in relation to IMA in WA, and help provide much needed knowledge in this area. The results of this research will assist in identifying barriers and facilitating factors that may affect the ENs' willingness to administer medications independently. This research will also identify any problems that ENs may be encountering in this new role. This topic has not been previously investigated therefore the results from this study will help fill a knowledge gap.

CHAPTER TWO

Literature Review

Introduction

There is very little literature that discusses IMA by ENs. There is currently no research available which specifically examines how ENs feel about this new scope of practice. The purpose of this literature review is therefore to discuss the development of the EN role over the last ten years and highlight changes, which have occurred over time. The review discusses the different scopes of practice for ENs between states in Australia, the role of the EN, legal issues, current research on the scope of practice for the EN, educational qualifications and competency standards.

Role of the Enrolled Nurse

The nursing profession in Australia is facing the prospect of challenge by an unregulated workforce. This has been blamed on the nurse shortage (Holmes, 2002; McDonald, 2003; Petty, 2002). It is estimated that around 60% of staff in nursing homes in Australia are unregulated non-professional health workers who have completed a short educational course to qualify for their positions (Holmes, 2002; Nay & Closs, 1999). Johnston (1996) and Holmes (2002) suggested that in Australia ENs were in danger of being replaced by unqualified employees, which may be more appealing to health care providers as a cost saving measure due to budget demands and targets in health care.

In 1994, Evans expressed her concerns that in New South Wales and Victoria the EN was becoming superseded in general areas. The author describes ENs as valuable members of the health care team, working in theatre and specialised areas. However Evans goes on to say that the ENs' role had changed by 1993 and since then most ENs seeking employment could only find positions within nursing homes. Johnston claimed that ENs were at the mercy of RN staffing levels. She states "An oversupply of RNs and our role is rapidly eroded, a shortage of RNs and cuts to the health dollar and our job description changes and we become very attractive members of the nursing team" (Johnston, 1996, p. 14). In 1996 it became apparent that in Australia, unlicensed employees were administering medications in nursing homes and in the community because they are not governed by the nursing registration legislation. The EN however was unable to undertake IMA due to being bound by nursing registration legislation and hospital policies (Johnston, 1996).

In 1989 the ENs' role in the UK was threatened to be replaced with unskilled workers giving employers an economically viable substitute. In other countries the EN role is being phased out due to the perception that they undertake similar roles to RNs without the same level of education. ENs have been communicating their frustration, anxiety, and discontentment about the future of their role in health care, as it is very similar to the RN role without any career advancement prospect (Parry & Cobley, 1996). Hembrough and Sheehan (1989) and Allan and McLafferty (1999) supported this claim about the erosion of the EN role in the United Kingdom (UK), and described how a career pathway was introduced for ENs to convert to RN. EN training in the UK was phased out and stopped completely in 1992. Many ENs have expressed their concerns about the erosion of the EN role in Australia in the past (Holmes, 2002; Johnston, 1996). A report in 2004 by the Australian Health Workforce Advisory Committee advised that the EN workforce in Australia dropped by 21.4% between the years of 1996 and 2001 and yet the number of carers/aides in health increased by 20.3% and the number of cares/aides in the community workforce increased by 25% (Australian Health Workforce Advisory Committee Report, 2004). Paech (2002) suggested that this is the reason why some ENs decided to take the challenge of studying to further their careers and become RNs.

Currently in Australia the increasing professional rates of salary for the RN and the impact of not being able to sustain their numbers has made it a very viable exercise to employ ENs (Clinton & Nelson, 1995). The Australian RN workforce is aging and a shortfall has already occurred (Petty, 2002). It is estimated that 45% of Australian nurses are over the age of 40 years and most nurses aim to retire from the workforce by the age of 55 years. It is predicted that by the year 2010 unless strategies are put into action now, there will be a large nurse shortage (Cowin & Jacobsson, 2003). Younger nurses are being enticed to remain within the health system with the introduction of graduate programmes and a continuous development support network to aid retention. Health care providers are aiming to provide a mix of grades of qualified nurses in the current environment (Blegen, Goode, & Reed, 1998; McKenna, 1995; Milson-Hawke & Higgins, 2003). Replacing RNs with ENs may be the answer to slowing the decline in nurse numbers. If an EN can meet the scope of practice that an RN achieves in a particular area, then employing a greater proportion of ENs becomes a cheaper option. If the EN role develops a larger scope of practice including IMA this could be one strategy to reduce the impact of this future predicament. It will also help protect the jobs of ENs who are threatened by the unregulated workforce (Holmes, 2002).

Young (2004) reported on key issues for The Chief Nursing Officer, Kathy Baker of New South Wales (NSW). Baker commented that Australia should aim for a more flexible nursing workforce for the future and that there should be more of a team approach to patient care. The perception that patient care can only be done by a RN is being challenged (Young, 2004). Baker believes that NSW ENs now doing IMA is a reflection on change for the future. The aim is to work towards greater articulation pathways for ENs to allow them to become more educated and to achieve Bachelor of Nursing awards. The NSW ENs MAP is currently available and scholarships are offered for participants. Baker also discussed about it not being mandatory for ENs to undertake this scope of practice and their right to refuse should be respected (Young, 2004).

Legal Issues

In 1996 the Society of Hospital Pharmacists of Australia released a statement about medication administration by ENs (cited in Johnston, 1996). They felt that the EN did not have the education or skills to be administering medications and expressed their concern about medication incidents already occurring by RNs who were more educated in medication administration than ENs. A legal opinion was sought about ENs administering medications and it became evident that in some States of Australia an EN could legally administer medications independently if they completed an IMA Programme and were deemed competent (Griffiths & Forrester, 2002).

The Poisons Act 1964 (WA) and the Poisons Regulations 1965 (WA) does not discriminate against the role of the EN in the administration of medications except for Schedule Eight drugs. The Nurses Act 1992 (WA) makes no mention of medication administration by ENs. This means that ENs can administer medications up to Schedule Four legally. This Act, however does refer to the EN being supervised by an RN. The Act also refers to unlawful delegation. The Nurses Board of Western Australia has made provision for the EN to administer medications in the Competencies under their guidelines within Division 2 of the EN register. The EN must be deemed competent in independent medication administration prior to an RN delegating this duty (National Competencies Standards, 2002). According to the Scope of Nursing Practice Decision Making Framework, which is used in context with the Poisons Act (WA) 1964 and several other Acts the RN delegates IMA to an EN after considering factors such as the experience, knowledge, and environment in which the EN is working, and the type of patients allocated to the EN. If the

EN accepts the responsibility of this delegation then the EN not the RN, is accountable for any errors made. The RN is accountable for the appropriateness of the original delegation and for taking appropriate action and addressing any issues if any errors or problems are identified from the delegation decision (Morrison, Thompson, & Fox Young, 2004; Nurses Board of Western Australia, 2004).

A media release from Kevin Andrews, Federal Minister for Aging cited in Dargan (2002), welcomed the new role for ENs to administer medications classified up to Schedule Four whilst working in an aged care environment. Mr Andrews felt it was time the ENs had a 'boosted role' and a national approach was needed to change the scope of nursing practice. This would give the RN in the aged care environment more opportunity to practice 'higher levels' of nursing skills such as health assessments of clients, and administration duties instead of spending time on administering medications. "This will also enhance education and career pathways for aged care staff" (Dargan, 2002, p. 1). The WA government through the Chief Nursing Office is currently supporting aged care facilities by paying the course fee for ENs to do the IMA programme through TAFE (M. Hardmann, Joint Secretary, The Enrolled Nurses Association, personal communication, December 10, 2004).

In WA it is estimated that there are 28000 nurses registered with the Nurses Board of WA and 5000 (18%) of this total are ENs (Customer Service Officer, Nurses Board of Western Australia, personal communication, July 9, 2004). It is also estimated that 1700 (34%) of these ENs are employed in the government health sector and the remaining 66% in the private sector including nursing homes (M. Hardmann, Joint Secretary, The Enrolled Nurses Association, personal communication, March 5, 2004). This makes a substantial number of ENs in the nursing population in WA. To protect the nursing profession and the quality of health care it is very important that ENs upgrade their skills and have appropriate education and support to administer medications. This is one of the recommendations for ENs from The National Review of Nursing Education (2002).

In WA ENs are considered a valuable member of the nursing team continuing to work in general and most specialised areas. In 1999 the state government introduced the Advanced Skills Enrolled Nurse into the career structure giving ENs recognition of their skills and professionalism (Della, 2003). One of the desirable requirements for the selection criteria for the position of Advanced Skills Enrolled Nurse in most public health services

today is for the EN to be deemed competent in IMA (C. Graham-Smith, Clinical Nurse Educator, North Metropolitan Health Service, Osborne Park Campus, personal communication, November 30, 2004). In 2002 the Minister for Health commissioned a review of EN education in WA. This review included current educational pathways and suggestions to meet the demands and future educational requirements for ENs (Della, 2003). The National Review of Nursing Education, (2002) suggested that a process be developed for ENs to articulate pathways for future career advancements.

Sir Charles Gairdner Hospital (SCGH) is part of the North Metropolitan Health Service and is one of the hospitals in WA that has empowered ENs to administer medications without the direct supervision of a RN. This has been a change in practice since May, 2001 when the original MAP commenced, the first for WA. This course has been accredited and sold to TAFE, regional and small hospitals throughout WA (M. Hardmann, Joint Secretary, The Enrolled Nurses Association, personal communication, November 25, 2004). The MAP designed by SCGH includes 32 hours of theory, and an 8-hour practical component prior to the EN being deemed competent to administer medications. This practice change has been described as a positive step for the hospital and the ENs. The ENs that have completed this course have described benefits such as increased job satisfaction, improved morale and self-esteem. The RNs have reported decreased stress levels and workloads. The benefits to patients were reported as greater continuity of care and better time management of medication administration (Kimberley, Myers, Davis, Keogh, & Twigg, 2004).

Queensland and WA legislation allows ENs to administer medication via all routes up to Schedule Four. The WA Poisons Act is currently being reviewed for ENs to administer Schedule Eight medications as in the past the EN could only check but not administer this level of medication (Morrison, Thompson, & Fox Young, 2004). SCGH has recently introduced an Intravenous Medication Administration Course to empower ENs to administer medications intravenously (H. Myers, Clinical Nurse Consultant [Research], Sir Charles Gairdner Hospital, personal communication, May 10, 2004).

When this study was being planned ENs who had completed MAP at a health service in WA and who had resigned to gain employment in another health service had to give up their new scope of practice, because the course was not recognised in other services. Thus the ENs were not able to practice IMA until they had completed further training in the new

establishment. This issue upset many ENs and they voiced their concerns to the union. Some ENs were refusing to complete the IMA course because they felt that it was included in their initial training and it was hospital policy that was not allowing them to administer medications. When this study began, Royal Perth and Fremantle Hospitals did not allow graduate ENs to do IMA until they had completed their 12-month graduate programme. However, at the time SCGH and smaller public hospitals were recognizing EN qualifications and allowing the graduate EN to undertake IMA (M. Hardmann, Joint Secretary, The Enrolled Nurses Association, personal communication, March 5, 2004).

Another issue for ENs in WA at the beginning of this study was that each government and private hospital had a different policy on ENs administering medications. Some hospitals allowed ENs to practice IMA others did not. Therefore in WA there was no coordinated approach for policy change across the board to allow ENs to practice IMA in all hospitals (M. Hardmann, Joint Secretary, The Enrolled Nurses Association, personal communication, March 5, 2004). Walker (2003) expressed concerns that traditionally the nursing profession remains fixed in older customary hierarchies of authority and workplace practices continue to prevent reform giving nurses little autonomy. She goes on to suggest that it is time to start changing the culture of these practices using innovative and creative approaches and this will lead to increased recruitment and retention of nurses. The hospitals that are allowing ENs to do IMA are introducing a change in culture and are allowing ENs to grow professionally (Kimberley et al., 2004). McCormack and Garbett (2003) suggests that for the nurse to be able to develop practices that differ from the old culture, the management of the organization must show leadership commitments to allow nurses to develop skills. Even though IMA by ENs is a government recommendation by The National Review of Nursing Education (2002) some workplace policies had not introduced this change in nursing practice at the time this study was planned (M. Hardmann, Joint Secretary, The Enrolled Nurses Association, personal communication, March 5, 2004). If a workplace allows IMA by ENs this gives ENs empowerment, enabling them to more effectively manage their nursing care and raises the status of the profession (Kimberley et al., 2004).

The Liquor, Hospitality, and Miscellaneous Workers Union (2003) is very positive about ENs administering medications. The Union claims it is a step toward further education and professional development. They encourage all ENs to complete the IMA course and be deemed competent in the expectation that this will give ENs a better status within the work

place. The union aims to alter the career structure for ENs in the future because of this new competency. The union has received positive feedback from the ENs who have completed the course although some ENs do not wish to participate or are reluctant to complete the course (M. Hardmann, Joint Secretary, The Enrolled Nurses Association, personal communication, March 5, 2004).

Current Research on Scope of Practice

An anonymous survey presented in two parts to address the issues of role function and viability of the EN perceived by RNs (n=45) and career satisfaction amongst ENs (n=43) was conducted by Brand (1993), an EN from New South Wales. Brand surveyed RNs and ENs working in one particular hospital environment. The survey results for RNs showed that some were critical of ENs but the majority showed a high level of respect for the EN role. However if the EN scope of practice was extended they felt that this could lead to exploitation. The survey for ENs was divided into three categories including personal details, career satisfaction and role extension opinions. The results indicated that 86% of participants felt positive about increasing the scope of practice for ENs, which included medication administration. ENs were satisfied with their career but 61% felt that they lacked support from management and RNs and that there was friction between the classes of nurses.

A national qualitative research project was conducted by Gibson and Heartfield (2003) to study the roles, function and competency standards for ENs employed in the Australian health care system. The participants in the study included RNs and ENs from all geographical areas of Australia. Data were collected by telephone interviews (n=48), observations followed by interview (n=160), workshops (n=8), teleconference (n=1), written transmissions and copies from an outline of an approved EN training course from an education institution in each state and territory. The research tools used were validated for occupational analysis and the development of competencies, and had been used for other health professionals in the past. The research was carried out in four phases. The results of this study indicated that ENs had a similar role to RNs, however the thought processes of ENs were different due to the level of education. RN education was more intensive and detailed than EN education. EN education in some states is only 12 months compared to RN Degree level education of at least 3 years. The study found that the role of the EN is changing, with the scope of nursing practice increasing. This could cause confusion due to unclear boundaries of nursing practice and could cause potential friction between RNs and

ENs in the future. Attention was drawn to the fact that ENs have different roles, depending on the state or territory in which the nurse is employed.

A recent grounded theory study by Milson-Hawke and Higgins (2004) of ENs (n=6) involving two periods of observation in an acute hospital setting found that ENs practiced at different levels of skill depending on the type of area they were employed in. In advanced practice ENs were undertaking activities that were considered to extend their scope of practice and were usually considered part of the RNs' role. It was felt that ENs determine their own scope of practice due to unclear guidelines of practice and this practice was mainly enforced by the expectations from RNs who allocate the workload (Milson-Hawke & Higgins, 2004). This was one of many issues raised at a forum held in Sydney by the New South Wales Nurses Association in February 2003 to discuss changes in the EN scope of practice (McDonald, 2003).

Educational Qualifications and Competency Standards

The individual states in Australia have different levels of education and competencies for the EN. This was one of the major issues identified by a steering committee that was commissioned in 1998 by the Australian Nursing Assessment Council, to conduct a research project on competencies for RNs and ENs. This committee suggested that the nursing profession have a single national register to assist the workforce, which has become highly transient throughout Australia. They stated that there should be one set of standards and competencies for the nursing profession nationally (Milson-Hawke & Higgins, 2003; Percival, Anderson, & Lawson, 1994; The National Review Of Nursing Education, 2002). At present the Australian Nursing and Midwifery Council is responsible for nursing competencies, which designed the National Competency Standards for RNs and ENs. A recent project managed by the Australian Nursing Federation and funded by the Australian Government Department of Health and Ageing, developed new competency standards for nurses in general practice in Australia including ENs and was first published in August 2005. These new competency standards are to be used as guidelines for ENs to assess their own practice and professional development (Australian Nursing and Midwifery Council, 2005). However there has been no plan to implement a national register.

After a review from the National Review of Nursing Education Committee, EN education is now complete after 12 months with a Certificate IV level, for most states except

for Queensland where it is a Diploma level. Training to Diploma level is 18 months duration, the same length of time as WA EN education, where ENs qualify with a Certificate IV (National Review of Nursing Education, 2002). In Victoria a person who qualifies with a Certificate IV is registered with the Nurses Board of Victoria as Division 2 Registered Nurse (Griffiths & Forrester 2002). The EN who achieves this Certificate IV is taught medication administration in their course outline (Community Services, Health & Education Industry Training Body Inc, n.d.).

Conclusion

From the literature review there has been much written about the development of the EN's role. However, in the past no one has been able to describe what the definitive role is or will eventually become, although the EN is to be responsible for their own actions and be accountable to the RN for all delegated functions as described by the Competencies for Division 2 by the Nurses Board of Western Australia. No research is currently available on IMA by ENs. Further research is required to investigate ENs' attitudes, subjective norms, intentions and behaviour related to this issue and help provide much needed knowledge in this area of nursing practice. This may assist in planning for the future development of the EN role. ENs' attitudes and subjective norms related to IMA need to be investigated to identify facilitating factors and barriers that may affect ENs' willingness and confidence to administer medications independently.

CHAPTER THREE

Conceptual Framework

The conceptual framework for this study is based on Ajzen and Fishbein's (1980) Theory of Reasoned Action (TRA). This theory was developed to describe and understand the reason why a person makes a decision to behave in a particular way. Figure 1 provides a diagrammatic representation of each part of the theory. To understand behaviour it is important to consider the factors that determine the action of a person and why a person decided to act in a particular manner and not in an alternative way. The TRA explains how a single action of behaviour can be predicted from the corresponding behavioural intention. Behavioural intentions are derived from a combination of personal and interpersonal factors which include the person's beliefs and perceptions of the expectations of significant others. A person's behavioural intention is determined by two major components according to TRA:

1. A personal or attitudinal component.
2. A social or normative component.

The personal or attitudinal component of behaviour refers to the person's attitude towards performing the behaviour under consideration, and is a function of two determinants (Ajzen & Fishbein, 1980). The first determinant is the individual's general belief about whether performing the behaviour would result in a good or bad outcome (salient beliefs). The second determinant is the individual's beliefs about whether the action about to be taken will lead to positive or negative consequences for them (outcome evaluation). If a person's attitude towards the behaviour is favourable, the intention to perform the behaviour is more likely to occur. If the person's attitude towards the behaviour is unfavourable, the intention to carry out the behaviour is less likely.

The second major component of behavioural intention is called the subjective norm and this is also described as a function of two determinants (Ajzen & Fishbein, 1980). The first determinant is the person's judgment about what other significant people expect in regard to whether the behaviour should be performed (salient referents). The second determinant is whether the person is motivated to comply with these expectations (motivation to comply).

The TRA explains that there is a relationship between attitude and intention, and subjective norms and intention. The strength of these relationships should provide accurate prediction of the intention. The strength of the intention-behaviour relationship should predict behaviour. Therefore, according to TRA, a person's behaviour is related to intention and the factors that determine the intentions, to provide an explanation for the particular behaviour (Ajzen & Fishbein, 1980).

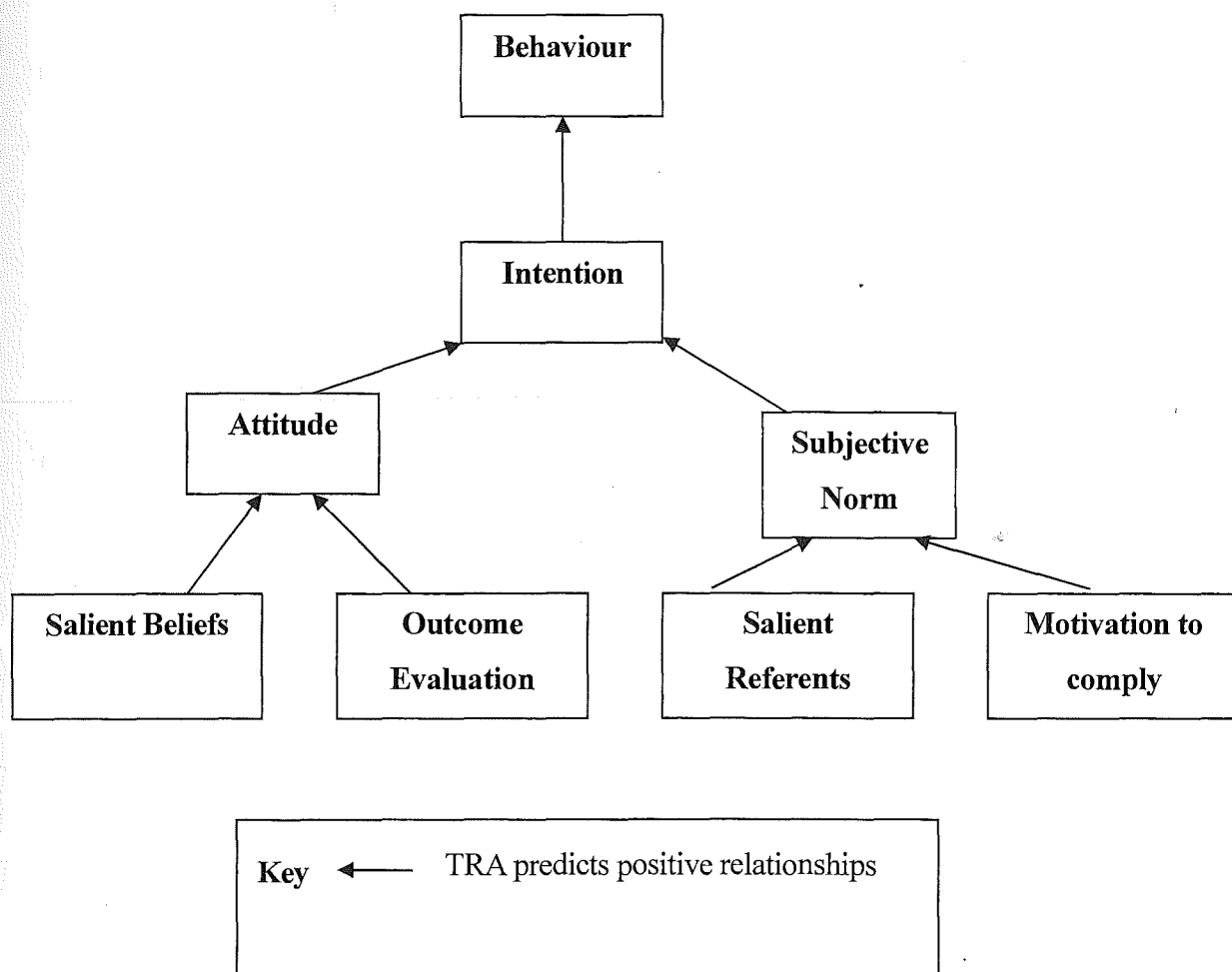


Figure 1. Diagram of the Theory of Reasoned Action.

Adapted from Ajzen, I., & Fishbien, M. (1980) *Understanding attitudes and predicting social behaviour*.

How the Conceptual Framework will be used in this Study

The conceptual framework for this study (see Figure 2 in this section) will be based on the TRA and the proposed relationships between the concepts shown in Figure 1. The main concept in this study has been identified as behaviour. The conceptual definition of behaviour is adopted from Ajzen and Fishbein's (1980) TRA as explained previously. The operational definition for behaviour is IMA by ENs.

The framework is presented as a conceptual map, which shows the interrelationships between the concepts of behaviour, intentions, attitudes and subjective norms. For this study factors constituting attitude and subjective norms will be studied without attempting to classify these into the four determinants of the TRA (salient beliefs, outcome evaluation, salient referents and motivation to comply), as this is a new field of research and beyond the scope of this study. The questionnaire items related to these factors identified from the literature have been integrated into the framework. The demographic factors (external variables) have also been integrated into the conceptual framework to show their proposed relationship with behaviour, intention, attitudes and subjective norms.

In this study it is not possible to test the relationship between intention and behaviour because the study is cross-sectional. However, where appropriate, relationships between behaviour and the remaining concepts in the TRA (attitude, subjective norms and external variables) will be tested. Relationships that will be tested in this study are as follows

- Attitude and Intention / Behaviour: 13 questionnaire items have been developed to collect data on seven variables concerned with attitude.
- Subjective Norms and Intention / Behaviour: Seven questionnaire items have been developed to collect data on three variables concerned with subjective norms.
- External Variables and Intention / Behaviour: 11 questionnaire items have been developed to collect data on six variables concerned with external variables.

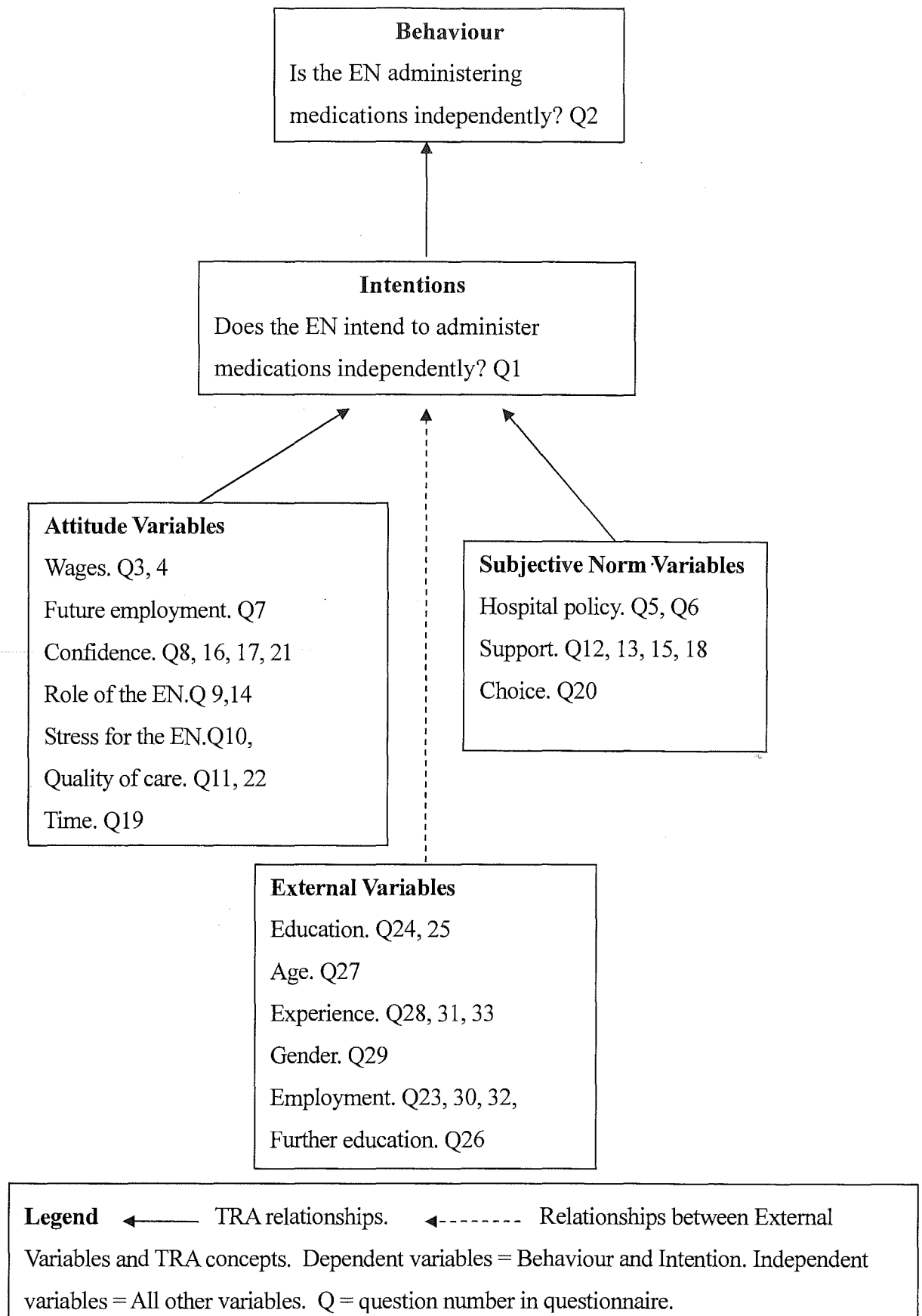


Figure 2. Conceptual Framework.

CHAPTER FOUR

Method

Design

A descriptive study in the form of a survey was carried out to address the research questions.

Sample and Setting

The population for this study is comprised of ENs who were working in WA during the data collection period. Members of the Australian Liquor, Hospitality, and Miscellaneous Workers Union of Western Australia (ALHMWU) were invited to participate because they could be contacted by a mail distribution without the prohibitive expense of using the Nurses Board of WA database. It is estimated that 5000 ENs are registered with the Nurses Board of WA (Customer Service Officer, personal communication, July 9, 2004). Approximately 1700 (34%) of these are employed in the government health care sector and 3300 (66%) are employed in the private sector including nursing homes. It is estimated that 2016 (40%) of registered ENs are members of the ALHMWU (M. Hardmann, Joint Secretary, The Enrolled Nurses Association, personal communication, May 3, 2004). The survey was sent to 1820 (36%) of ENs that were members of the ALHMWU who had a current address on record. The number of completed questionnaires returned was 729 giving a response rate of 40%. This study used a convenience sample of ENs, who chose to respond to the questionnaire.

Instruments

A questionnaire was designed from the conceptual framework and the literature review. The aim of the questionnaire was to collect information on ENs' attitudes, subjective norms, intentions and behaviour related to IMA. There were 33 questions made up of mainly closed-ended and scaled-response questions (see Appendix A and B). The closed-ended questions were scored: 1 = yes, 2 = no, 3 = unsure and 4 = not applicable. The scaled-response questions were measured on a five-point Likert-type scale and were scored from: 1 = strongly agree, to 5 = strongly disagree. The questionnaire contained two parts. Part A included questions that relate to ENs' attitudes, intention and behaviour in relation to IMA. Part B was used to collect demographic data. This allowed testing of relationships between concepts within the TRA and demographic variables such as age, gender, EN qualifications and work environment.

Validity Testing of the Instrument

Testing for face validity.

Face validity examines readability, simplicity and the presentation of the questionnaire and whether it reflects the purpose for which it was intended in relation to the topic (Polit, Beck, & Hungler, 2001). This is the lowest level of validity and is used when the variables in a tool are being studied for the first time as in this study (Brink & Woods, 2001). Face validity was assessed at the same time as content validity.

Content validity.

Content validity is concerned with whether the items in the questionnaire will measure the variables that are identified in the conceptual framework and are relevant to the research topic under study (Nieswiadomy, 2002). Lynn (1986) suggests that to ensure content validity the instrument should be assessed by a minimum of five experts to ensure that they are not agreeing on the relevance of questionnaire items by chance. A review form was designed to measure the content validity of the questionnaire based on a quantifiable 4 - point ordinal rating scale, the index of content validity (CVI) as described by Lynn (p. 384)

1 = Question not relevant

2 = Unable to assess question relevance without major revision

3 = Question relevant but needs minor alteration

4 = Question very relevant.

According to Lynn, if five or less experts assess the instrument then all must agree that an item is relevant for it to be retained in the questionnaire.

A convenience sample of five ENs were chosen and asked to participate in completing a face and content validity appraisal of the questionnaire. Two ENs from a surgical area, two ENs from a medical area and one from a mental health area were selected by being on duty and agreeing to participate. These ENs were given instructions regarding the procedure in order to evaluate the content validity of the questionnaire (see Appendix C). The questionnaire and review forms were returned to the researcher via the internal mail. They were given a code number. The codebook with the names of participants and their linked identification number were kept separately to the review forms ensuring participants' confidentiality.

The researcher evaluated the results of each item in the questionnaire. Any item that received a score of 1 or 2 by any of the review panel was to be omitted from the questionnaire. Any item that received a score of 3 was to have minor alterations made and be included in the questionnaire. Items that received a rating of 4 by the entire review panel were to be considered conclusive and retained in the original format in the questionnaire. Any additions mentioned by at least two panel members were to be considered for inclusion. If major changes were required to the questionnaire based on the review panel's decision the panel would be asked to review the revised questionnaire.

Test-retest reliability

Test-retest reliability is used to measure the stability of an instrument over time (Polit, Beck, & Hungler, 2001, p. 472). Thirty ENs at Osborne Park Hospital were asked to complete the questionnaire at two different time points, one week apart to assess the test-retest reliability of the questionnaire. The time period of one week was selected because it should be enough time for participants to forget their original answers as the questionnaire was long but not long enough to have changes occur that would affect participants' responses (Nieswiadomy, 2002). A list of ENs working for the fortnight was drawn up from the ward rosters. The ENs were selected in order from the rosters excluding any ENs that were on leave for the time period. If any of the ENs selected did not wish to participate in the study, extra names were drawn until the required number was reached. An identification number was assigned to each EN that was going to participate and the questionnaires were numbered and colour coded either blue or red. The colour blue represented the first questionnaire. The colour red represented the second questionnaire. Each participant was given instructions on the procedure for completing the questionnaire and asked to return it via the internal mail (see Appendix D). In order to obtain a reliability measurement the second questionnaire was distributed one week after completion of the first questionnaire, when all the questionnaires were returned. The results were analysed by one of the academic supervisors (Helen Myers) using the STATA Statistics/Data Analysis program.

Data Analysis

Each question in the questionnaire was classified as nominal, ordinal or interval data. From this classification the data analysis method used was frequencies, percentages, measurements of central tendency (mean and median) and dispersion (standard deviation). Chi-square (χ^2) tests were used to compare proportions of responses within subgroups. The

p value for significance was set at $< .05$ for all analyses to indicate statistically significant differences between the groups. The chi-square analyses were checked for assumption violations to identify cells that have an expected count of less than 5 (Pallant, 2001, p. 259). All data were analysed using the Statistical Package for the Social Sciences (SPSS for Windows, Release 10).

Procedures

The ALHMWU posted the questionnaire to all 1820 union members who had current address details. At the end of the second week the Enrolled Nurse delegates (these are ENs voted by union members of each hospital to represent them in union matters regarding their hospital) for each hospital setting were sent a letter asking them to remind their members to complete the survey (see Appendix E). A message was also posted on the union web site reminding ENs to complete the questionnaire. The time frame for the distribution was two weeks. A period of one month for the data collection was imposed, including distribution time, to allow completion of the study within the prescribed time frame.

Ethical Considerations

The research proposal was submitted to the Edith Cowan University Faculty Ethics Committee for approval prior to the commencement of any data collection including reliability testing (see Appendix F). Verbal permission was also obtained from the Acting Co-Director of the hospital for initial reliability testing.

The questionnaire was anonymous, as names were not used. A reply paid envelope was issued with the questionnaire to maximise the response rate. Participants gave implied consent by returning the completed questionnaire. The front page of the questionnaire contained information about the research and what was required from each participant (see Appendix A). The participants were given the opportunity to contact the researcher or supervisors via telephone about the research prior to completing the questionnaire.

The union and Enrolled Nurse delegates were requested to remain neutral about the individual's choice to participate. The respondents were treated with respect and were made aware that they did not have to complete the questionnaire.

All questionnaires were coded and will be stored away in a secure place for a period of no less than five years. During the study the data were stored in a locked cabinet at the researcher's home and at the conclusion of the study, will be transferred to a locked cabinet in the Postgraduate Room at the School of Nursing, Midwifery and Postgraduate Medicine, Edith Cowan University. The Postgraduate Administrative Assistant has the key and will be responsible for destroying the documents by shredding after five years.

CHAPTER FIVE

Results

Introduction

This chapter will present the findings in two sections. The first section will show the results of instrument testing, including face and content validity, and reliability testing. The second section is divided into five parts and addresses the research questions based on the TRA conceptual framework. The first part reports on the demographic data of the participants that relate to part B of the questionnaire. The second part presents the findings for the attitudes relating to ENs' intention and behaviour when administering medications independently. The third part reports on the results for the subjective norm variables that are concerned with the ENs' intention and behaviour when administering medications independently. The fourth part reports on the results of external variables that are concerned with ENs' intention and behaviour. The last part will summarise participants' remarks on the comment page of the questionnaire.

Instrument Testing Results

Results for Face and Content Validity Testing

The review panel's responses varied for each item, as shown in Table 1. The majority of the panel considered most of the items very relevant. Twelve of the items scored below 3, which required them to be omitted from the questionnaire, but no alternative or additional items were suggested for inclusion. Based on advice from the research supervisors it was considered that the stringent criteria for content validity assessment suggested by Lynn (1986) were not practical for this study and potentially valuable items could be lost. It was decided, with the review panel's agreement that minor changes would be made to the wording on some of the items. After checking the items that required changing in the questionnaire, the review panel were in agreement that the instrument was valid for measuring ENs' attitudes, subjective norms, intentions and behaviour related to independent medication administration.

Table 1

Frequency of Scores for Relevance of Questionnaire Items

Question No	Score			
	1	2	3	4
1				5
2				5
3				5
4	1		1	3
5				5
6				5
7			1	4
8	1		1	3
9	1			4
10	2			3
11	2			3
12	1			4
13				5
14			1	4
15				5
16				5
17	2		1	2
18			1	4
19			4	1
20				5
21				5
22	1	1		3
23				5
24				5
25	2			3
26				5
27				5
28				5
29	2			3
30				5
31				5
32	2			3
33				5

Note. Score guide

1= Question not relevant. 2 = Unable to assess question relevance without major revision.
 3 = Question relevant but needs minor alteration. 4 = Question very relevant.

Reliability Testing Results

Test-retest reliability was assessed using measurements of percent agreement and kappa statistics. Gross-Portney and Watkins (2000) suggest that measurements on a categorical scale should be assessed for percent agreement as this will measure how often participants agree on a score for a particular item. Percent agreement is measured by the number of exact agreements divided by the number of possible agreements. The ENs (n=30) completed the same questionnaire a week apart and the results for each item were compared. Percent agreement was then calculated to show how often the ENs gave the same answer for each question (see Table 2), using a range of 0% being no agreement to 100% being perfect agreement. Percent agreement ranged from 73.33% to 96.67% indicating that the items in the questionnaire were completed similarly across the two time periods (Gross-Portney & Watkins, 2000).

Kappa statistics were calculated for the paired results of each item (see Table 2). Dawson-Saunders and Trapp (1994, p. 57) define kappa (κ) as “the agreement beyond chance divided by the amount of agreement possible beyond chance obtained”. The results for κ are expressed in terms of proportions, the lower limits being 0.00 and the upper limits being 1.00. It is possible for the κ result to be negative, indicating that the results are worse than chance. If the κ value is on the lower limit of zero the agreement equals chance indicating no agreement (Gross-Portney & Watkins, 2000). Byrt (1996, p. 561) suggested the following for interpretations for the κ value

0.93-1.00	Excellent agreement
0.81-0.92	Very good agreement
0.61-0.80	Good agreement
0.41-0.60	Fair agreement
0.21-0.40	Slight agreement
0.01-0.20	Poor agreement
≤ 0.00	No agreement

The results of the κ ranged from 0.6166 to 0.9353 indicating good to excellent agreement. One κ score was 0.0000, which according to Byrt (1996) should be interpreted as no agreement, however this result could be explained by lack of variability in the sample, that is the majority of the sample gave the same response to the item. Most items indicated good agreement indicating good test-retest reliability of the questionnaire.

Table 2

Reliability Testing Results

Item Number	Percent Agreement	Kappa
1	86.67	0.8193
2	90.00	0.8534
3	96.67	0.6512
4	90.00	0.8567
5	96.67	0.0000#
6	96.67	0.8718
7	96.67	0.9174
8	90.00	0.8375
9	73.33	0.6166
10	76.67	0.7075
11	86.67	0.8160
12	83.33	0.6842
13	80.00	0.7064
14	86.67	0.7066
15	96.67	0.9353
16	73.33	0.6209
17	83.33	0.7713
18	86.67	0.8319
19	83.33	0.7851
20	90.00	0.8321
21	86.67	0.8131
22	90.00	0.8367
26	93.33	0.8826

Note. # Kappa not robust due to lack of variability in the sample responses (i.e. most people gave the same response to the item).

Response Rate

Of the 1820 questionnaires posted, 729 were returned, a response rate of 40%. From that number, 706 (39%) were returned in time for inclusion in the study.

Demographics

A few of the participants did not complete some of the demographics questions in part B of the questionnaire, however a good description of the overall participants has been achieved. The mean age of the ENs was 46.4 years (SD=8.6) with a minimum of 19 years and a maximum of 66 years. The data were only slightly skewed towards the maximum age. The mean number of years of registration as an EN was 22.1 years (SD=11.1) with the minimum being <1 year and the maximum being 47 years. The majority were female (96.8%, n=665), (missing data 2.7% [n=19]). Most were employed by the public sector (70.5%, n=451) with 28.4% (n=182) working in the private sector and the remaining 1.1% (n=7) working in both the public and private sector, (missing data 9.3% [n=66]). The mean number of years worked for their current employer was 9.6 years (SD=8.6) with a minimum of <1 year and the maximum being 40 years. The majority (66.2%, n=462) were employed in the metropolitan area with the remaining 33.7% (n=235) being employed in rural, regional and remote areas. One of the ENs (0.1%) reported being unemployed at the present time, (missing data 1.1% [n=8]). Many (27.3%, n=187), identified themselves as being multiskilled, working in more than one speciality area, (missing data 3.1% [n=22]). Most ENs worked in one specialty area including aged care 17.5% (n=120), medical services 17.0% (n=116), surgical services 17.3% (n=118) or mental health services 1.6% (n=11). Some (18.7%, n=132) worked in other areas not listed above, for example the Silver Chain Association, Disability Services and Medical Centres. The mean amount of time employed in the nursing speciality was 12.5 years (SD=9.9) with a minimum of <1 year and the maximum being 40 years.

The majority (76.1%, n=533) had hospital based training, 10.0% (n=70) had a Certificate IV, 7.0% (n=49) had an Associate Diploma, 3.4% (n=24) completed both hospital based training and an Associate Diploma, 3.1% (n=22) completed Hospital Based Training and Certificate IV, and 0.3% (n=2) completed their training in the Defence Forces, (missing data 0.8% [n=6]). Some student ENs 0.4 % (n=3) were identified, (missing data 0.8% [n=6]). The majority (75.4%, n=528) completed their nursing training in WA. Some

ENs 23.4% (n=164) completed their training in other parts of Australia and overseas, while 0.7% (n=5) completed their training in both WA, and other parts of the world. Less than a quarter of ENs were either enrolled or planning to enrol in the course converting from EN to RN and half of the ENs (50.6%, n=357) had no plans to enrol (see Table 3).

Table 3

ENs Planning to Convert to Registered Nurse (n=696)

Proposed Time for Enrolment	n	%
Already enrolled	56	8.0
Within next 12 months	20	2.9
Sometime in the future	66	9.5
Not sure	197	28.3
Never	357	51.3

Behaviour

To identify the behaviour of the ENs one of the items in the questionnaire examined how often the ENs were administering medications independently. Nearly half (40.8%, n=282) did this task every shift, 3.8% (n=26) did this task weekly, while 0.9% (n=6) did this monthly. Almost half (49.3%, n=341) were not doing IMA, while 2.2% (n=15) administered medications from Webster or Blister packs.

In summary, from a sample of 706 participants a total of 336 (47.5%) are practicing IMA. Those identified as administering from Webster or Blister packs were considered not to be practicing IMA. A total of 4.2% (n=14) ENs were administering medications but had not completed the MAP and of those 6 (1.8%) were administering medications from Webster or Blister packs. Of the ENs that had completed the MAP 3.6% (n=13) never administer medications.

Intentions

When ENs were asked about their intentions to complete the IMA programme 700 responses were obtained. Slightly more than half had already completed the programme and just over a quarter were not sure about their plans (see Table 4).

Table 4

When ENs Plan to Do a Medication Administration Programme (n=700)

Proposed time	n	%
Next 3 months	60	8.6
Next 6 months	26	3.7
Next 12 months	33	4.7
Not sure	191	27.3
Never	30	4.3
Completed already	360	51.4

Attitude

To answer research question 1, “what is the attitude of ENs in WA towards independent medication administration,” many variables were examined. The variables that were related to financial incentives were answered as follows; 84.1% (n=582) felt that the ENs who practice IMA should receive extra payment, 8.5% (n=59) answered they should not, 6.5 % (n=45) were unsure. A limited number 0.9% (n=6) answered not applicable, while (n=14) did not complete the question. Of the 340 who had not completed the MAP, 80.1% (n=246) would consider it if they received an extra financial incentive, 10.7% (n=33) would not do the course and 9.1% (n=28) were unsure. Missing data was 9.7% (n=33). The majority (83.5%, n=576) felt that if they were deemed competent to do IMA this would improve their chances of future employment.

Items relating to confidence in doing IMA were answered as follows; the majority (70.7%, n=496) strongly agreed that they felt confident about doing IMA (see Figure 3). A total of 54.9% (n=377) mildly to strongly agreed that fear about drug calculations is a barrier

to commencing a MAP (see Figure 4). However 63.6% (n=412) felt that fear about drug calculations would not prevent them from commencing the MAP (see Figure 5). The majority (74.4%, n=482) felt enthusiasm about completing the MAP while 18.2 % (n=118) neither agreed nor disagreed with being enthusiastic about completing the MAP (see Figure 6).

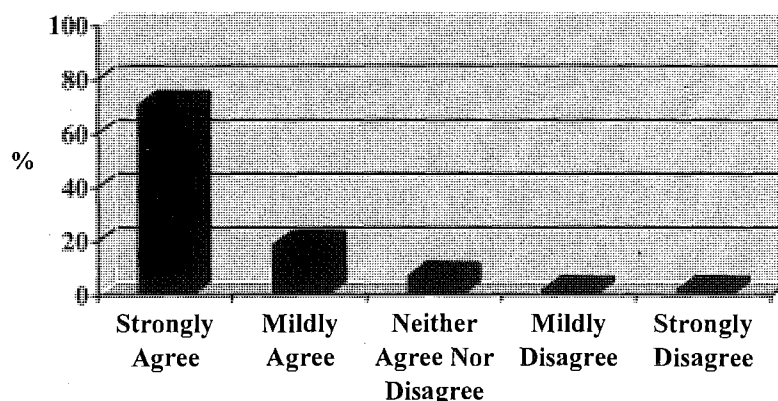


Figure 3. ENs' confidence in administering medications independently (n=702). Missing data 0.6% (n=4).

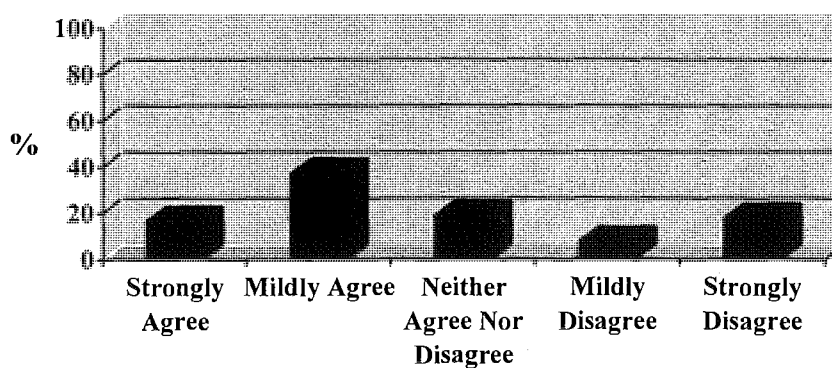


Figure 4. Responses to the statement that fear of drug calculations is a barrier to ENs commencing a medication administration programme (n=686). Missing data 2.8% (n=20).

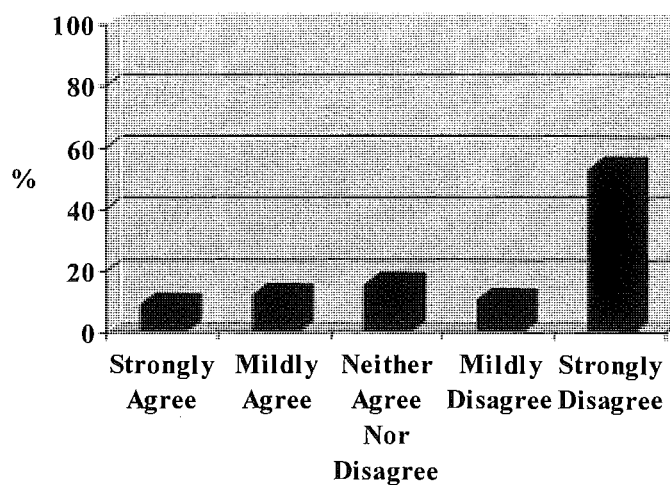


Figure 5. Responses to the statement that fear of drug calculations would prevent ENs from commencing the programme (n=648). Missing data 8.2% (n=58).

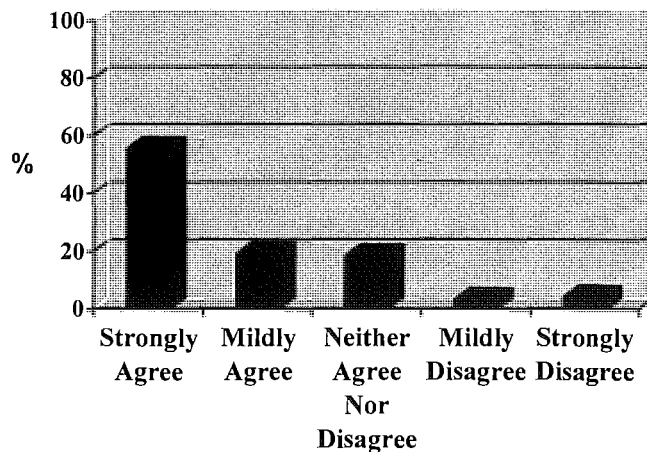


Figure 6. Responses to the statement that ENs are enthusiastic about completing the Medication Administration Programme (n=648). Missing data 8.2% (n=58).

The majority of ENs (85.6%, n=599) strongly to mildly agreed that administering medications independently should be part of their role (see Figure 7). The majority 95.7 %

(n=675) strongly to mildly agreed that expanding the scope of practice by allowing ENs to administer medications independently as part of their role is a positive step (see Figure 8).

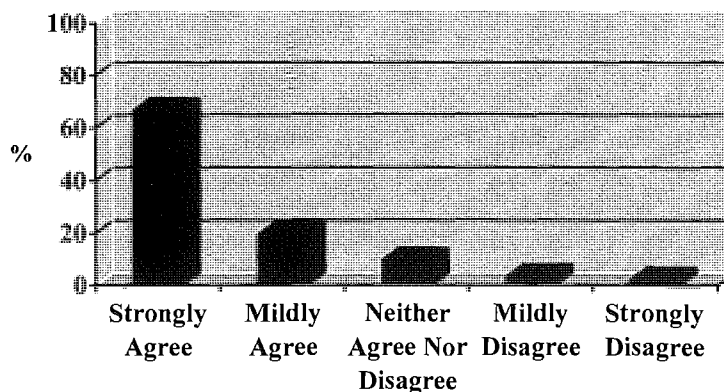


Figure 7. Responses to the statement that ENs should administer medications independently as part of their role (n=700). Missing data 0.8% (n=6).

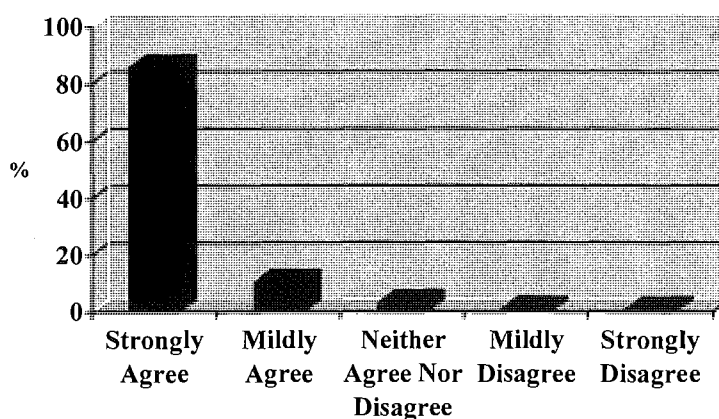


Figure 8. Responses to the statement that expanding the scope of practice by allowing ENs to administer medication independently as part of their role is a positive step (n=705). Missing data 0.1% (n=1).

In response to the statement that IMA is stressful for ENs 28.6% (n=200) strongly disagreed, 15.1% (n=106) mildly disagreed while 25.9% (n=181) neither agreed nor disagreed (see Figure 9).

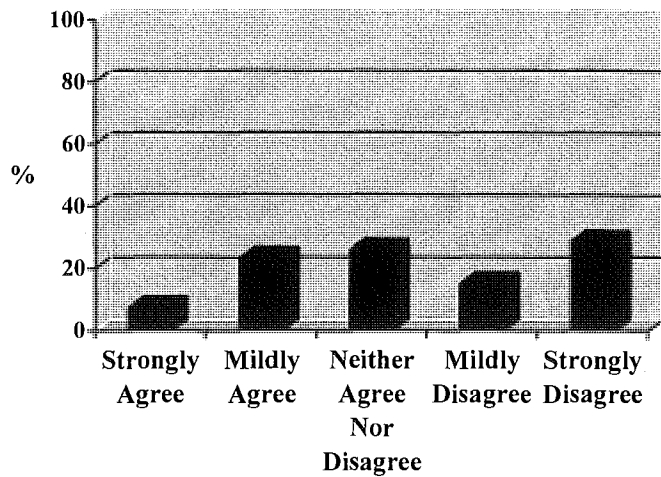


Figure 9. Responses to the statement that administering medications independently is stressful for ENs (n=700). Missing data 0.8% (n=6).

Attitudinal factors relating to quality of patient care were described. Just over half of the sample (54.4%, n=384) strongly agreed that the quality of patient care would improve if ENs were independently administering medications (see Figure 10) while 86.8% (n=592) strongly to mildly agreed that administering medications independently would or does allow the EN to deliver holistic care to the patient (see Figure 11).

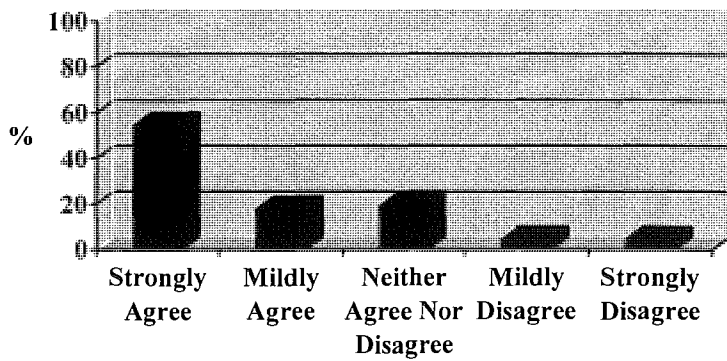


Figure 10. Responses to the statement that quality of care for the patient would improve if ENs were independently administering medications (n=705). Missing data 0.1% (n=1).

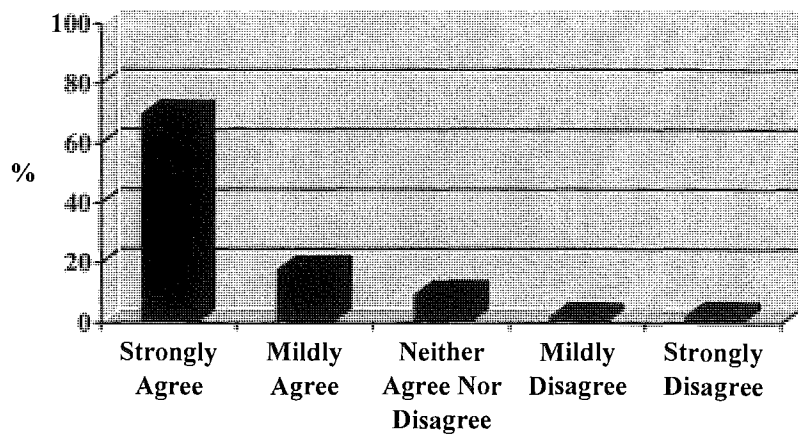


Figure 11. Responses to the statement that administering medications independently would/does allow ENs to deliver holistic care to the patient (n=682). Missing data 3.4% (n=24).

Attitudinal factors relating to time were described and 49.0% (n=305) strongly to mildly disagreed with the statement that due to other commitments they had no time to complete a MAP (see Figure 12).

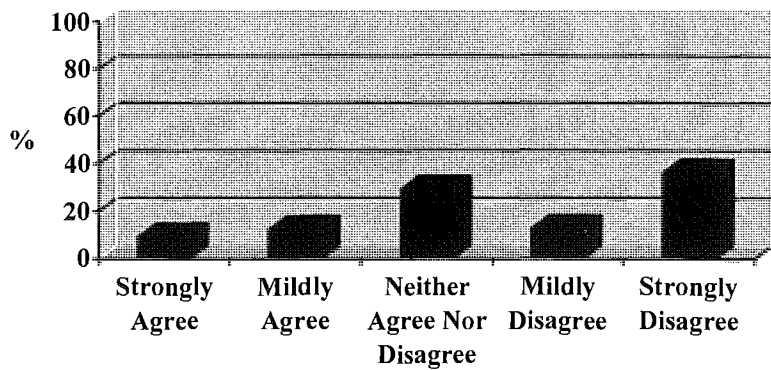


Figure 12. Responses to the statement that ENs do not have enough time because of other commitments to complete a Medication Administration Programme (n=622). Missing data 11.9% (n=84).

Subjective Norms

The items concerned with the subjective norms were examined. Item 5 identified whether the work place policy allowed the EN to do IMA. Almost 70% (70.1%, n=486) of ENs indicated that they could do IMA in the work place in which they were employed (see Figure 13) and that 58.4% (n=400) had been offered the opportunity to participate in an EN MAP (see Figure 14).

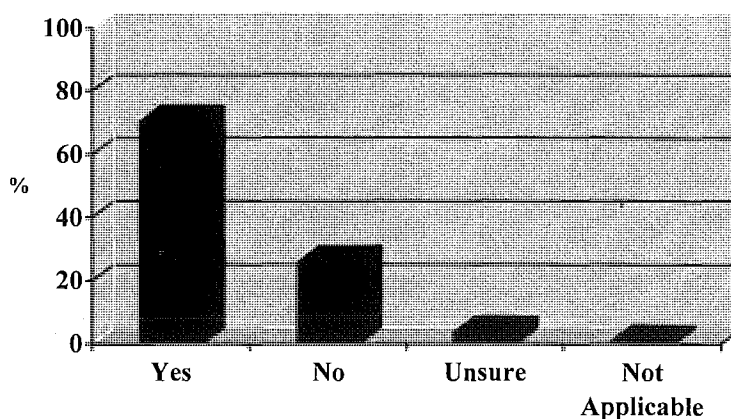


Figure 13. Responses to the statement that work place policy allows ENs to do independent medication administration (n=693). Missing data 1.8% (n=13).

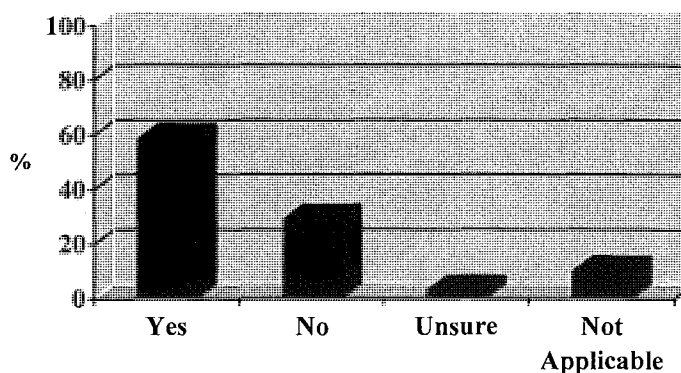


Figure 14. Responses to the statement that the employer has offered ENs the opportunity to participate in a Medication Administration Programme (n=685). Missing data 3.0% (n=21).

Support from other staff members was positive with 76.4%, (n=536) of ENs strongly to mildly agreeing that their colleagues generally supported them when they did IMA (see Figure 15), and 79.0% (n=554) strongly to mildly agreeing that they are generally supported by RNs (see Figure 16). Slightly over 70% (70.5%, n= 479) strongly to mildly agreed that they had support from Staff Development Nurses (see Figure 17) when they do the MAP. Nearly half of the ENs (48.4%, n=338) strongly to mildly agreed that they would have support from their work place if they made a medication error, but almost one third were neutral (see Figure 18).

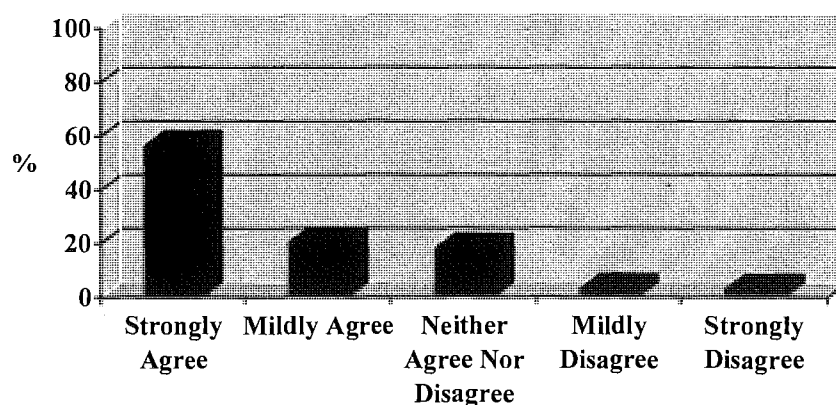


Figure 15. Responses to the statement that ENs would be supported by other ENs when administering medications independently (n=702). Missing data 0.6% (n=4).

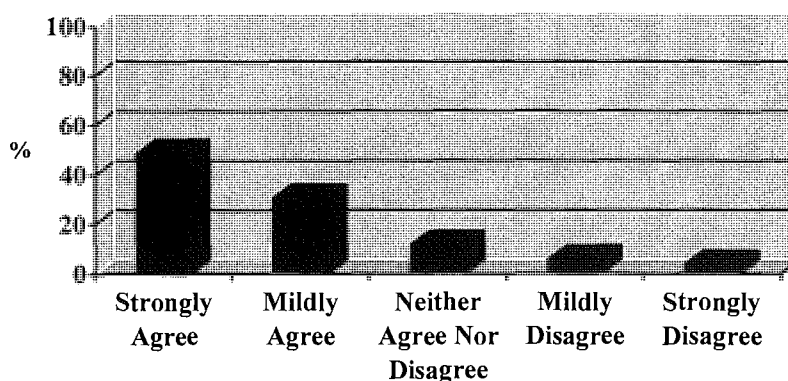


Figure 16. Responses to the statement that ENs are generally supported by RNs when they give medications independently (n=705). Missing data 0.7% (n=5).

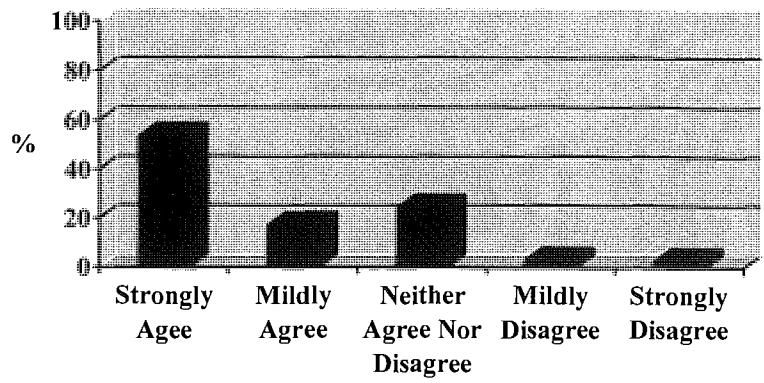


Figure 17. Responses to the statement that ENs are supported by Staff Development Nurses when they do the medication administration programme (n=680). Missing data 3.7% (n=26).

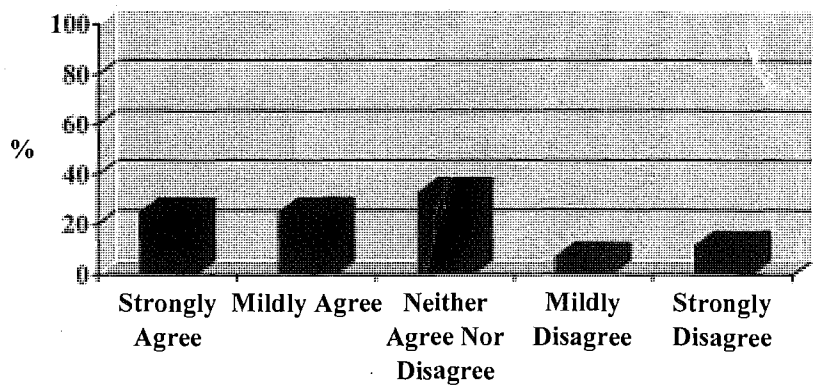


Figure 18. Responses to the statement that ENs' work place would support them if a medication error occurred (n=683). Missing data 3.3% (n=23).

Subjective norm factors relating to choice were described. More than half, 58.8% (n=396) strongly to mildly agreed that they had a choice about whether or not to complete a MAP, whereas 15.2% (n=102) neither agreed nor disagreed that they had a choice (see Figure 19).

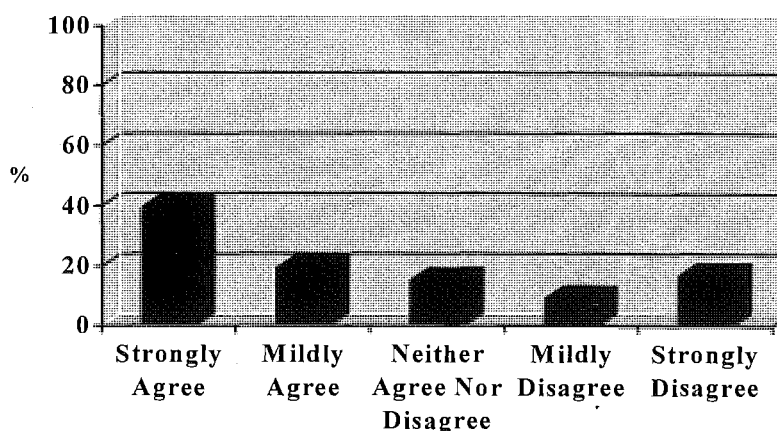


Figure 19. Responses to the statement about choice to complete a medication administration programme (n=673). Missing data 4.7% (n=33).

Relationships Between Attitude, Intention and Behaviour

The fourth research question was concerned with the relationship between ENs' attitude, intention and behaviour, in relation to completing a MAP, which in turn reflects their intention to do IMA. The p value for the significance was set at <.05 for all tests (Pallant, 2001).

The data for item 1 (When do you plan to do a MAP?) was recoded by splitting the data into three groups. Group A = ENs who intended to complete the course within the next 12 months (16.9%, n=119), Group B = the ENs that had already completed the course (51%, n=360) and Group C = those who were not sure or never intended to complete the course (31.3%, n=221). Group B was excluded from the analysis of some relationships because it was not relevant for this group to answer some of the questions. Chi-square tests were used to explore the relationship between the items in the conceptual framework. The data used for questionnaire items 3, 4 and 7 were recoded into three categories, yes, no and unsure. The

rest of the items for attitude were recoded into Group A = strongly to mildly agree, Group B = neither agree nor disagree and Group C = mildly to strongly disagree prior to chi-square testing (see Table 5). Results for chi-square analyses of question 14 had an assumption violation in that more than 20% of cells had an expected frequency of <5 (Pallant, 2001). No assumption violations occurred for the remaining tests.

Remuneration and Attitudes to Medication Administration Programme / Independent Medication Administration

There was a significant difference in intention / behaviour related to completion of a MAP based on ENs' expectations of increased pay for IMA. Of the people who believed ENs should be paid more for IMA, 71.6% had completed a MAP (54.3%) or were intending to complete a MAP (17.3%) within the next 12 months. Of those ENs who did not believe they should be paid more or were unsure, almost half were not planning to do a MAP or were unsure (see Table 5). In summary, ENs who expected increased pay for IMA were more likely to have done a MAP or intend to do the programme.

Table 5

Relationships Between the ENs' Expectations of Increased Pay for IMA and Their Intention and Behaviour Related to Completing the MAP

Intention / Behaviour related to MAP completion	ENs' expectation of increased pay			n	χ^2	df	p
	Yes %	No %	Unsure %				
Next 12 months	17.3	20.3	11.1				
Completed already	54.3	30.5	42.2				
Not sure, Never	28.4	49.2	46.7				
				682	18.970	4	.001

Among ENs who were not administering medications there was a significant difference in intention to complete a MAP based on their willingness to do a MAP for increased pay. Of those ENs who would consider completing a MAP for increased pay, 38.2% were planning to do a MAP in the next 12 months. In contrast, of those who were not willing to complete a MAP for increased pay only 15.2% intended to do a MAP within the next 12 months (see Table 6).

Table 6

Relationships Between ENs' Willingness to do MAP for Increased Pay and Their Intention and Behaviour Related to Completing the MAP

Intention to complete a MAP	ENs' willingness to do MAP and IMA for increased pay			n	.χ ²	df	p
	Yes %	No %	Unsure %				
Next 12 months	38.2	15.2	28.6				
Not sure, Never	61.8	84.4	71.4				
				307	7.350	2	.025

Employment Prospects

There was a significant difference in intention / behaviour related to completion of a MAP based on ENs' belief that practicing IMA will improve their chances of employment prospects. Of those who believed ENs would have improved chances of future employment, 70.8% had either completed a MAP (52.4%) or were intending to complete a MAP (18.4%) within the next 12 months compared to just over half in the remaining two groups (see Table 7).

Table 7

Relationships Between ENs' Belief that Practicing IMA Will Improve Their Chances of Future Employment and Their Intention and Behaviour Related to MAP

Intention / Behaviour related to MAP completion	ENs' belief that practicing IMA improves future employment prospects			n	χ^2	df	p
	Yes %	No %	Unsure %				
Next 12 months	18.4	3.9	16.7				
Completed already	52.4	52.9	41.7				
Not sure, Never	29.2	43.1	41.7				
				686	12.097	4	.017

Confidence

There was a significant difference in intention / behaviour related to completion of a MAP based on ENs' confidence about practicing IMA. Of those who felt confident about practicing IMA, 73.2% had already completed a MAP (56.5%) or were intending to complete a MAP (16.7%) within the next 12 months. In contrast, of those who were neutral or did not feel confident about IMA, the percentages that had completed or were intending to complete a MAP was lower (see Table 8).

Table 8

Relationships Between ENs' Confidence About Practicing IMA, and Their Intention and Behaviour Related to MAP

Intention / Behaviour related to MAP completion	ENs' confidence about practicing IMA			n	χ^2	df	p
	Mildly to Strongly Agree	Neither Agree Nor Disagree	Mildly to Strongly Disagree				
	%	%	%				
Next 12 months	16.7	22.4	12.5				
Completed already	56.5	12.2	4.2				
Not sure, Never	26.8	65.3	83.3				
				696	71.914	4	.000

Fear About Drug Calculations

There was no significant difference in intention / behaviour related to completion of a MAP based on ENs' perception that fears about drug calculations are a barrier to ENs commencing a MAP (see Table 9).

Table 9

Relationships Between ENs' Perceptions that Fears About Drug Calculations are a Barrier to ENs Commencing a MAP, and Their Intention and Behaviour Related to MAP

Intention / Behaviour related to MAP completion	ENs' perceptions that fears about drug calculations are a barrier to IMA			n	χ^2	df	p
	Mildly to Strongly Agree	Neither Agree Nor Disagree	Mildly to Strongly Disagree				
	%	%	%				
Next 12 months	18.8	12.3	17.5	680	6.654	4	.155
Completed already	53.1	48.5	50.3				
Not sure, Never	28.2	39.2	32.2				

There was no significant difference in intention / behaviour related to completion of a MAP based on the perception that personal fear about drug calculations is a barrier that prevents the EN commencing a MAP (see Table 10).

Table 10

Relationships Between Personal Fears that Drug Calculations Would Prevent ENs from Commencing a MAP and Their Intention to Do MAP

Intention to complete a MAP	Personal fear that drug calculations prevent me from undertaking IMA			n	χ^2	df	p
	Mildly to Strongly Agree	Neither Agree Nor Disagree	Mildly to Strongly Disagree				
	%	%	%				
Next 12 months	32.7	22.7	39.8	331	4.985	2	.083
Not sure, Never	67.3	77.3	60.2				

Enthusiasm

There was a significant difference in intention / behaviour related to completion of a MAP based on ENs' enthusiasm regarding commencing a MAP. Of those who felt enthusiastic about commencing MAP, nearly a half (44.2%) intended to commence a MAP within the next 12 months. In contrast, those who were neutral or not enthusiastic about commencing a MAP were less likely to do so in the next 12 months (see Table 11).

Table 11

Relationships Between Enthusiasm Completing a MAP and the ENs' Intention to Do MAP

Intention to complete a MAP	Enthusiasm about completing a MAP			n	χ^2	df	p
	Mildly to Strongly Agree %	Neither Agree Nor Disagree %	Mildly to Strongly Disagree %				
Next 12 months	44.2	11.8	21.2	332	27.312	2	.000
Not sure, Never	55.8	88.2	78.8				

Role Expectations

There was a significant difference in intention / behaviour related to completion of MAP based on ENs' perceptions that IMA should be part of the EN role. Of those who agreed that ENs should do IMA as part of their role, 72.2% had either completed a MAP (55.6%) or were intending to complete a MAP (16.6%) within the next 12 months. In contrast, among those who disagreed fewer had completed or were intending to complete a MAP (see Table 12).

Table 12

Relationships Between ENs' Perceptions that Practicing IMA Should be Part of the EN Role, and Their Intentions and Behaviour Related to Completing a MAP

Intention / Behaviour related to MAP completion	ENs' perceptions that IMA should be part of the EN role			n	χ^2	df	p
	Mildly to Strongly Agree	Neither Agree Nor Disagree	Mildly to Strongly Disagree				
	%	%	%				
Next 12 months	16.6	15.2	25.0				
Completed already	55.6	36.4	9.4				
Not sure, Never	27.8	48.5	65.6				
				695	37.726	4	.000

There was a significant difference in intention/ behaviour related to completion of a MAP based on ENs' opinions that practicing IMA was a positive step for ENs. Of those who agreed that ENs practising IMA was a positive step, 69.5% had completed a MAP (52.5%) or were intending to complete a MAP (17.0%) within the next 12 months. In contrast, 75% of those who did not feel it was a positive step were unsure or did not intend to complete a MAP (see Table 13).

Table 13

Relationships Between ENs' Opinions that Practising IMA is a Positive Step for ENs and Their Intentions and Behaviour Related to Completing a MAP

Intention / Behaviour to complete MAP	IMA is a positive step for ENs			n	χ^2	df	p
	Mildly to Strongly Agree	Neither Agree Nor Disagree	Mildly to Strongly Disagree				
	%	%	%				
Next 12 months	17.0	19.0	12.5	699	12.719	4	.013
Completed already	52.5	28.6	12.5				
Not sure, Never	30.4	52.4	75.0				

Note. 4 cells (44.4%) had an expected count less than 5. The minimum expected count was 1.36.

Stress

There was a significant difference in intention / behaviour related to completion of a MAP based on ENs' opinions that administering medications is stressful for ENs. Of those who agreed that administering medications is stressful, 64.9% had either completed a MAP (46.4%) or were intending completed a MAP (18.5%) within the next 12 months. In contrast, among those who disagreed that administering medications was stressful, the percentage that had completed or intended to complete a MAP was higher (73.9%) (see Table14).

Table 14

Relationships Between ENs' Opinions that Practicing IMA is Stressful for ENs and Their Intentions and Behaviour Related to Completing a MAP

Intention / Behaviour related to MAP completion	Practicing IMA is stressful for ENs			n	χ^2	df	p
	Mildly to Strongly Agree	Neither Agree Nor Disagree	Mildly to Strongly Disagree				
	%	%	%				
Next 12 months	18.5	17.7	15.6				
Completed already	46.4	45.3	58.3				
Not sure, Never	35.1	37.0	26.2				
				694	11.089	4	.026

Perceptions of Quality of Care

There was a significant difference in intention / behaviour related to completion of a MAP based on expectations that the quality of care for patients would improve if ENs practised IMA. Of those who agreed that ENs administering medications would improve the quality of patient care, 71.0% had completed a MAP (54.8%) or were intending to complete a MAP (16.2%) within the next 12 months. In contrast, those who were neutral or disagreed that the quality of patient care would improve were less likely to intend to complete a MAP in the future (see Table 15).

Table 15

Relationships Between Expectations that the Quality of Patient Care Would Improve if ENs Practiced IMA, and ENs' Intentions and Behaviour Related to Completing a MAP

Intention / Behaviour related to MAP completion	ENs' perceptions that the quality of patient care would improve if ENs practiced IMA			n	χ^2	df	p
	Mildly to Strongly Agree	Neither Agree Nor Disagree	Mildly to Strongly Disagree				
	%	%	%				
Next 12 months	16.2	18.8	20.3				
Completed already	54.8	45.1	35.6				
Not sure, Never	29.0	36.1	44.1				
				699	10.736	4	.030

There was a significant difference in intention / behaviour related to completion of a MAP based on the perception that IMA allows the EN to deliver holistic care to the patient. Of those who agreed that practicing IMA allows the EN to deliver holistic care, 72.0% had either completed a MAP (55.2%) or were intending to complete a MAP (16.8%) within the next 12 months. In contrast, among those who were neutral or disagreed that IMA allowed the EN to deliver holistic care, over half were less likely to intend to complete a MAP or were unsure (see Table 16).

Table 16

Relationships Between ENs' Perceptions that IMA Would/Does Allow the EN to Deliver Holistic Care and the ENs' Intentions and Behaviour Related to Completing a MAP

Intention / Behaviour related to MAP completion	ENs' perceptions that IMA allows ENs to deliver holistic care			n	χ^2	df	p
	Mildly to Strongly Agree	Neither Agree Nor Disagree	Mildly to Strongly Disagree				
	%	%	%				
Next 12 months	16.8	17.7	20.0				
Completed already	55.2	24.2	28.0				
Not sure, Never	28.0	58.1	52.0				
				676	32.805	4	.000

Time

There was a significant difference in intention / behaviour related to completion of a MAP based on the ENs' belief that lack of time due to other commitments prevents them doing a MAP. Of those who agreed that they did not have enough time, or were neutral, more than 70% had no intention of doing MAP or were unsure, compared with 55.1% who did not believe that time was a problem (see Table 17).

Table 17

Relationships Between ENs' Belief that Lack of Time Prevents Them doing MAP, and the ENs' Intentions Related to Commencing a MAP

Intention to complete a MAP	Not enough time to complete IMA			n	χ^2	df	p
	Mildly to Strongly Agree	Neither Agree Nor Disagree	Mildly to Strongly Disagree				
	%	%	%				
Next 12 months	26.8	28.8	44.9				
Not sure, Never	73.2	71.3	55.1				
				330	10.692	2	.005

Relationships Between Subjective Norms, Intentions and Behaviour

The subjective norm variables that influenced intentions and behaviour related to IMA were examined using chi-square analysis. The data for item 1 (When do you plan to do a MAP?) was recoded by splitting the data into three groups as previously described. For some analyses to make sense Group B (those who had completed IMA) was deleted because the analysis was relevant to intention and not behaviour. The response variables for items 5 and 6 were recoded into three categories, yes, no and unsure. Responses for the remaining items related to the subjective norm variables were recoded into Group A = strongly to mildly agree, Group B = neither agree nor disagree and Group C = mildly to strongly disagree prior to chi-square testing.

Work Place Policy Regarding Independent Medication Administration

There was a significant difference in intention / behaviour related to completion of a MAP based on hospital policy for IMA. Of those who believed that their work place policy allowed them to practice IMA, 81.2% had either completed a MAP (67.0%) or intended to complete a MAP within the next 12 months (14.2%). Of those that were employed in a

hospital where the workplace policy did not allow them to practice IMA or they were unsure of the policy, over half were not planning to do a MAP or were unsure (see Table 18).

Table 18

Relationships Between the ENs' Work Place Policy on Administering Medications and the ENs' Intentions and Behaviour Related to Completing a MAP

Intention / Behaviour related to MAP completion	Work place policy regarding ENs practicing IMA			n	χ^2	df	p
	Yes	No	Unsure				
	%	%	%				
Next 12 months	14.2	25.1	20.8				
Completed already	67.0	14.3	16.7				
Not sure, Never	18.8	60.6	62.5				
				684	164.549	4	.000

There was a significant difference in intention / behaviour related to completion of MAP based on ENs being offered the opportunity to participate in a MAP by their employer. Of those whose employer offered the opportunity to complete a MAP, 47.6% were intending to commence a MAP within the next 12 months. In contrast, among those who were not offered the opportunity to do a MAP or were unsure, a lower percentage intended to do a MAP (see Table 19).

Table 19

Relationships Between the ENs Being Offered the Opportunity to Participate in a MAP by Their Employer and the ENs' Intentions and Behaviour Relating to Completing a MAP

Intention to complete MAP	Opportunity to participate in a MAP			n	χ^2	df	p
	Yes	No	Unsure				
	%	%	%				
Next 12 months	47.6	26.6	21.1				
Not sure, Never	52.4	73.4	78.9				
				335	16.851	2	.000

Support by Other Staff

There was a significant difference in intention / behaviour related to completion of a MAP based on the sense of support offered from other ENs. Of those who agreed that ENs were supported by other ENs when they practiced IMA, 71.8% had either completed the MAP (53.2%) or were intending to complete the MAP (18.6%) within the next 12 months. In contrast, among those who were neutral or disagreed that ENs were supportive fewer had done a MAP or were intending to do so (see Table 20).

Table 20

Relationships Between ENs' Sense of Support From Other ENs and Their Intentions and Behaviour Related to Completing a MAP

Intention / Behaviour related to MAP completion	Support by other ENs			n	χ^2	df	p
	Mildly to Strongly Agree	Neither Agree Nor Disagree	Mildly to Strongly Disagree				
	%	%	%				
Next 12 months	18.6	12.2	12.2	696	11.370	4	.023
Completed already	53.2	45.5	48.8				
Not sure, Never	28.2	42.3	39.0				

There was a significant difference in intention / behaviour related to completion of a MAP based on the sense of support offered from RNs regarding the practice of IMA by ENs. Of those who agreed that they were supported by RNs when they practiced IMA, 73.8% had either completed the MAP (56.8%) or were intending to complete the MAP (17.0%) within the next 12 months. In contrast, 42.3% who were neutral or disagreed that ENs were supported by RNs were unsure or never intend to do a MAP (see Table 21).

Table 21

Relationships Between ENs' Sense of Support From RNs and Their Intentions and Behaviour Related to Completing a MAP

Intention / Behaviour related to MAP completion	Support by RNs			n	χ^2	df	p
	Mildly to Strongly Agree	Neither Agree Nor Disagree	Mildly to Strongly Disagree				
	%	%	%				
Next 12 months	17.0	16.0	19.7				
Completed already	56.8	32.1	33.3				
Not sure, Never	26.3	51.9	47.0				
				695	33.934	4	.000

There was a significant difference in intention / behaviour related to completion of a MAP based on the sense of support likely to be received from Staff Development Nurses when completing the MAP. Of those who agreed that Staff Development Nurses would support ENs completing a MAP, 79.8% had either completed a MAP (63.6%) or were intending to complete a MAP (16.2%) within the next 12 months. In contrast, among those who were neutral or disagreed that Staff Development Nurses were supportive, higher percentages were not planning to do a MAP or were unsure (see Table 22).

Table 22

Relationships Between ENs' Sense of Support From Staff Development Nurses and Their Intentions and Behaviour Related to Completing a MAP

Intention / Behaviour related to MAP completion	Support by Staff Development Nurses			n	χ^2	df	p
	Mildly to Strongly Agree	Neither Agree Nor Disagree %	Mildly to Strongly Disagree				
	%		%				
Next 12 months	16.2	19.6	16.7	674	103.960	4	.000
Completed already	63.6	22.7	30.6				
Not sure, Never	20.2	57.7	52.8				

Work Place Support

There was a significant difference in intention / behaviour related to completion of a MAP based on the ENs' expectation that their workplace would support them if a medication error was made. Of those who agreed that their work place would support them, 77.7% had either completed a MAP (63.4%) or were intending to complete a MAP (14.3%) within the next 12 months. Among those that disagreed that the work place would support them if they made a medication error, 47.1% were not planning to do a MAP or were unsure (see Table 23).

Table 23

Relationships Between the ENs' Expectation that Their Workplace Would Support Them if a Medication Error was Made and Their Intentions and Behaviour Relating to Completing a MAP

Intention / Behaviour related to MAP completion	Work place will support the EN if an error is made			n	χ^2	df	p
	Mildly to Strongly Agree	Neither Agree Nor Disagree	Mildly to Strongly Disagree				
	%	%	%				
Next 12 months	14.3	21.4	17.4				
Completed already	63.4	41.8	35.5				
Not sure, Never	22.3	36.8	47.1				
				677	43.488	4	.000

Choice

There was a significant difference in intention / behaviour related to completion of MAP based on the ENs' perception that they had a choice about completing a MAP. Of those who agreed that they have / had a choice to complete a MAP, 78.7% had either completed a MAP (61.2%) or were intending to complete a MAP (17.5%) within the next 12 months. In contrast, of the ENs that were neutral or disagreed that they had a choice to complete a MAP, fewer had completed the MAP or intended to do so in the next 12 months (see Table 24).

Table 24

Relationships Between ENs' Perceptions that They had a Choice About Completing a MAP and Their Intentions and Behaviour About Completing a MAP

Intention / Behaviour related to MAP completion	Choice about completing MAP			n	χ^2	df	p
	Mildly to Strongly Agree	Neither Agree Nor Disagree	Mildly to Strongly Disagree				
	%	%	%				
Next 12 months	17.5	13.9	19.8				
Completed already	61.2	31.7	37.2				
Not sure, Never	21.3	54.5	43.0				
				667	59.797	4	.000

Relationships Between External Variables, Intentions and Behaviour

The following analyses to investigate the relationship between external variables, intentions and behaviours were done using chi-square. The data that were previously recoded for questionnaire item 1 were used. All the external variables required recoding.

The first item relating to education was EN qualifications. This was recoded into two groups, Group A = Hospital based training, Group B = Higher than hospital based training. The data for the second education item, (where did ENs complete their training) was recoded into two groups, Group A = Western Australia and Group B = Other. Age was recoded into three groups to make the age group sizes more similar. These groups were Group A = 19-40, Group B = 41 – 50, Group C ≥ 51.

The items concerned with the variable “experience” were identified as the number of years registered as an EN, years worked in nursing speciality and the years employed at their current workplace. The data for the amount of years registered was recoded into three groups, Group A = 0 – 19, Group B = 20 – 27, Group C = 28 – 45. The data for years worked in nursing speciality was recoded into Group A = 0 – 5, Group B = 6 – 15 and Group C = 16 – 45. The data for years employed at their current workplace was recoded into four

groups to allow for similar sized groups. These groups were Group A = 0 to 2, Group B = 3 – 6, Group C = 7 – 15 and Group D = 16 –45 years.

Two items that related to employment required recoding. The type of nursing speciality was recoded into Group A = Aged Care Services, Group B = Medical Services, Group C = Mental Health Services and other, Group D = Surgical Services and Group E = Multiple areas. Further education and enrolment into a conversion course was recoded. Group A = Already enrolled, Group B = within the next 12 months or sometime in the future, Group C = Not sure or never. The names of the organisations ENs worked for were recoded into Group A = Public, Group B = Private organisation.

Educational Qualifications

There was a significant difference between intention / behaviour related to completion of a MAP based on ENs’ education qualifications. Of those that had completed hospital-based qualifications, 70.7% had either completed a MAP (54.3%) or intended to complete a MAP (16.4%) within the next 12 months. In contrast among those with qualifications higher than hospital based, there were fewer who had completed or were intending to complete a MAP (see Table 25).

Table 25

Relationships Between the ENs’ Qualifications and Their Intentions and Behaviour Related to Completing a MAP

Intention / Behaviour related to MAP completion	ENs qualifications		n	χ^2	df	p
	Hospital	Higher than				
	based training	hospital based				
	%	training				
		%				
Next 12 months	16.4	22.0				
Completed already	54.3	38.1				
Not sure, Never	29.3	39.8				
			647	10.036	2	.007

There was no significant difference between intention / behaviour related to completion of a MAP based on where the ENs completed their training (see Table 26).

Table 26

Relationships Between Where the ENs Completed Their Qualifications and Their Intentions and Behaviour Related to Completing a MAP

Intention / Behaviour related to MAP completion	Where EN qualifications completed		n	χ^2	df	p
	Western	Other				
	Australia %	%				
Next 12 months	17.9	14.8				
Completed already	49.6	58.6				
Not sure, Never	32.4	26.5				
			686	4.036	2	.133

Age

There was no significant difference in intention / behaviour related to completion of a MAP based on the ENs' age (see Table 27).

Table 27

Relationships Between the Age of the ENs and Their Intentions and Behaviour Related to Completing a MAP

Intention / Behaviour related to MAP completion	Age of the ENs			n	χ^2	df	p
	19 ≤ 40	41 to 50	≥ 51				
	Years	Years	Years				
	%	%	%				
Next 12 months	20.6	18.2	14.1				
Completed already	44.3	53.2	51.5				
Not sure, Never	35.1	28.5	34.5				
				677	5.781	4	.216

Years Registered

There was no significance difference in intention / behaviour related to completion of a MAP based on the number of years registered as an EN (see Table 28).

Table 28

Relationships Between the Number of Years Registered as an EN and Their Intentions and Behaviour Related to Completing a MAP

Intention / Behaviour related to MAP completion	Years registered as an EN			n	χ^2	df	p
	0 to 19	20 to 27	28 to 45				
	Years	Years	Years				
	%	%	%				
Next 12 months	21.1	17.8	13.8	675	6.462	4	.167
Completed already	45.1	53.5	54.5				
Not sure, Never	33.8	28.9	31.7				

Years Employed in Nursing Speciality

There was no significant difference in intention / behaviour related to completion of a MAP based on the number of years the ENs had been employed in a type of nursing speciality (see Table 29).

Table 29

Relationships Between the Numbers of Years the ENs Worked in a Nursing Speciality, and Their Intentions and Behaviour Relating to Completing a MAP

Intention / Behaviour related to MAP completion	Years worked in nursing speciality			n	χ^2	df	p
	0 to 5	6 to 15	16 to 45				
	Years	Years	Years				
	%	%	%				
Next 12 months	19.7	18.1	14.1	664	4.047	4	.400
Completed already	52.4	51.0	51.1				
Not sure, Never	27.9	30.9	34.8				

Years Employed in Work Place

There was a significant difference in intention / behaviour related to completion of a MAP based on the number of years the ENs had been employed in the work place. Of those ENs who were employed in the workplace for up to two years, 73.3% had already completed a MAP (48.3%) or were intending to complete a MAP (25.0%) within the next 12 months. The 7 to 15 years group also had a high percentage (70%) of ENs who had completed a MAP or were intending to do so in the next 12 months. In contrast, among those in the 3 to 6 years and 16 to 45 year groups, the percentage who were unsure or never intended to complete a MAP was higher (see Table 30).

Table 30

Relationships Between the Numbers of Years the ENs were Employed in the Workplace and Their Intentions and Behaviour Related to Completing a MAP

Intention / Behaviour related to MAP completion	Years employed in work place				n	χ^2	df	p
	0 to 2	3 to 6	7 to 15	16 to 45				
	Years	Years	Years	Years				
	%	%	%	%				
Next 12 months	25.0	10.9	20.3	12.0	664	16.934	6	.010
Completed already	48.3	54.5	49.7	53.1				
Not sure, Never	26.7	34.6	30.1	34.9				

Gender

There was no significant difference in intention / behaviour related to completion of a MAP based on gender (see Table 31).

Table 31

The Relationship Between Gender and the ENs' Intentions and Behaviour Related to Completing a MAP

Intention / Behaviour related to MAP completion	Gender		n	χ^2	df	p
	Male	Female				
	%	%				
Next 12 months	19.0	17.1	681	.121	2	.941
Completed already	47.6	51.4				
Not sure, Never	33.3	31.5				

Location Employed

There was a significant difference in intention / behaviour related to completion of MAP based on location where the EN was employed. Of those ENs that were employed in the metropolitan area, 75.2% had either completed a MAP (61.4%) or intended to complete a MAP (13.8%) within the next 12 months. In contrast, among those that were employed in the rural / regional / remote area, 43.4% were not planning to do a MAP or were unsure (see Table 32).

Table 32

Relationships Between the Location of the ENs' Employment and Their Intentions and Behaviour Related to Completing a MAP

Intention / Behaviour related to MAP completion	Location of where the EN is employed		n	χ^2	df	p
	Metropolitan %	Rural/Regional/ Remote %				
Next 12 months	13.8	23.8	691	50.934	2	.000
Completed already	61.4	32.8				
Not sure, Never	24.8	43.4				

Type of Nursing Speciality Employed

There was a significant difference in intention / behaviour related to completion of MAP based on the type of nursing speciality in which the ENs were employed. A higher percentage of those employed in aged care and medical services had either completed a MAP or intended to complete a MAP within the next 12 months. Of those ENs who work in different speciality areas than aged care and medical services similar percentages were not planning to do a MAP or were unsure (see Table 33).

Table 33

Relationships Between the Nursing Speciality of the EN and the Intentions and Behaviour Related to Completing a MAP

Intention / Behaviour related to MAP completion	Type of nursing speciality the EN is employed					n	χ^2	df	p
	Aged	Medical	Mental	Surgical	Many				
	Care	Services	Health	Services	areas				
	Services	%	Services	%	%				
	%		and						
			Other						
			%						
Next 12 months	10.9	19.1	24.5	8.5	20.7				
Completed already	65.5	53.9	44.1	56.4	43.5				
Not sure, Never	23.5	27.0	31.5	35.0	35.9				
						678	27.406	8	.001

Type of Organisation Employed

There was no significant difference in intention / behaviour related to completion of MAP based on the type of organisation in which the EN was employed (see Table 34).

Table 34

Relationships Between the Type of Organisation In Which the ENs are Employed and Their Intentions and Behaviour Related to Completing a MAP

Intention / Behaviour related to MAP completion	The type of organisation in which the ENs are employed		n	χ^2	df	p
	Public %	Private %				
Next 12 months	18.3	13.9				
Completed already	50.0	57.8				
Not sure, Never	31.7	28.3				
			628	3.429	2	.180

Plans for Future Education

There was no significant difference in intention / behaviour related to completion of MAP based on future educational plans of the EN (see Table 35).

Table 35

Relationships Between ENs' Plan to Enrol in a RN Conversion Course and Their Intentions and Behaviour Related to Completing a MAP

Intention / Behaviour related to MAP completion	ENs plans to convert to RN			n	χ^2	df	p
	Already enrolled %	Within next 12 months / Sometime in the future %	Not sure/Never %				
Next 12 months	17.9	20.9	16.6				
Completed already	53.6	52.3	50.9				
Not sure, Never	28.6	26.7	32.5				
				690	1.848	4	.764

Enrolled Nurses Comments About Independent Medication Administration

A large percentage of the participants 61% (n=434) added comments in the space provided. Due to time limitations on this thesis only comments on relevant issues that were not previously raised in the questionnaire, were extracted to provide additional information about the ENs' thoughts and feelings regarding IMA. The complete data set will be analysed in greater depth at a later date using qualitative methodology.

Professional Development

Many ENs feel that the extra knowledge gained by completing the MAP is a positive step to develop professionally. After completing the MAP some ENs commented that they now have a better understanding of drug interactions, side effects, knowledge about medical conditions and how to care for their patients. On completion of the programme they reported they had more job satisfaction. However, a few ENs commented that medication administration was part of their initial training; therefore, they believed that they did not need to do the MAP to be deemed competent.

Several ENs acknowledged the importance of their hospital policy of two nurses checking medications, one of which is to be an RN, especially when neonates and children are involved. However they stated that they would like the opportunity to complete a MAP to gain more knowledge about medications but no MAP was available where they were employed. Some learning issues from the programme were identified. Many ENs felt that the course was very intense and requested that they have follow up education. Others requested that the Intravenous Medication Administration Programme that has been introduced at SCGH be available to all ENs on the completion of the MAP not only those that are Advanced Skills Level five. A few suggested a special course, endorsed by the Nurses Board of Western Australia to allow two ENs to administer Schedule Eight medications.

Concerns were expressed about pressure to do the MAP now that many ENs practice IMA. Others stated they were feeling compelled to complete a MAP and practice IMA when they have no interest in doing it. ENs commented that those who do not want to practice IMA should not be made to do the programme.

Some ENs stated that the opportunity to upgrade to RN should be more easily obtainable. The cost of doing a conversion course was considered far too expensive for many; some stated they did not consider it necessary for them to do a conversion course to upgrade as they are “doing an RN job already”. A view expressed by some ENs was the difficulty gaining a University placement for their RN conversion.

Employer policies

At the time of this study some hospital policies did not allow the ENs to do IMA. ENs employed by these hospitals expressed concern that this is unfair because they are not able to extend their scope of practice and develop professionally. Others felt that the employer only selected some to have the opportunity to complete the MAP. A comment was made suggesting those who have completed the MAP and practice IMA have more opportunity for agency work. Some health facilities when requiring agency staff request an EN that can practice IMA.

A small group felt that allowing ENs to practice IMA is an example of being used as “cheap labour”, being a cheaper alternative to RNs. It was suggested that those who practice IMA should be paid for the extra responsibility at the same rate as a first level RN.

Accreditation

Many ENs expressed concern that the MAP is not recognised between health facilities. It was stated that some health care facilities are strongly opposed to ENs attending other MAP instead of their own. Some felt that there should be only one universal course that covers all health care facilities and this should be controlled by the Health Department. One EN commented that she had to complete the MAP three times due to changes in employers. Some ENs requested that an external unit be developed that is accredited and recognised by all hospitals so that remote nursing ENs can complete the course. Others suggested that scholarships should be made available from the Health Department to pay for the programme. One suggested that those who completed the programme should be issued with an identification card that should be recognised in any health care facility.

Professional Relationships

Concern was expressed about what is required from the RN and EN roles, many expressing concern they are expected to practice IMA the same as the RN. There are some ENs who feel the increasing change of scope of practice of ENs is intimidating for some RNs, who are strongly opposed to ENs practicing IMA. A few ENs expressed concern that some RNs are waiting for them to make a medication error, enabling them to make an issue to management to stop ENs practicing IMA. This is creating a barrier to their professional development. Some ENs expressed concerns about what the RNs are doing while the ENs are practicing IMA as they feel that the workload for RNs will be reduced. Others feel that since completing the MAP and practicing IMA their professional relationships with colleagues and other members of the medical team have improved.

Quality of patient care

Safety issues were discussed by some of the ENs. They expressed concern that it was in the patients' interest to have two nurses checking the medication, regardless of whether they are ENs or RNs to prevent an increase of incidents of error. There were also complaints about the difficulty in reading doctors' handwriting on the medication charts as this could lead to potential medication errors. Several ENs were positive about practicing IMA as they felt that this gave them more control of patients' care. Some ENs commented that their time management skills have improved because they do not have to wait for a RN to administer their medications and their patients are getting better care because they are receiving their medications at the correct time. There were some complaints from a few of an increased workload and more responsibility now that they practice IMA because they are given the heaviest patients.

Scope of Practice

Some ENs suggested they are only being given the opportunity to increase their scope of practice by practicing IMA because of the nursing shortage, and expressed concern it will be taken away from them once the nursing shortage is over. These comments were substantiated by other ENs who made comments that rosters have changed since ENs commenced practicing IMA. There are less RNs rostered on the shifts when there are ENs on duty who practice IMA. There also appeared to be friction between ENs and Nursing

Assistants / Personal Carers. The EN scope of practice has increased, however in some nursing homes Nursing Assistants / Personal Carers who are not regulated are performing the scope of practice that the EN practices at a cheaper rate of pay. One EN commented that she is rarely rostered on penalty paying shifts because Nursing Assistants / Personal Carers are a cheaper alternative.

Responsibility of Patient Care

Some ENs felt that a few RNs do not understand who is responsible if a medication error is made. They felt that RNs should be made aware that if the EN has completed the MAP and is deemed competent to administer medications, when being delegated this duty the EN accepts this role and takes the responsibility.

Summary

The results from this study using the conceptual framework have identified variables related to Attitudes, Subjective Norm and External Factors that influence Intentions and Behaviour related to MAP and IMA.

Findings from this study identified 48.7% (n=336) of the sample of ENs as practicing IMA, while 17.0 % (n=119) intend to do the MAP programme within the next 12 months. Overall the results indicated that the majority of ENs thoughts and feelings about IMA are positive in supporting this scope of practice.

Analysis of relationships between Attitude and Intentions / Behaviour of the ENs about completing a MAP identified 11 significant relationships out of 13 tested. These are summarised in Table 36. The two items that did not show significant relationships with intention and behaviour were those concerning fear about drug calculations.

Table 36

Results for Relationships Between Attitude Variables and Intentions / Behaviour

Variables	n	χ^2	df	p
Significant relationships.				
ENs that practice IMA should be paid more.	682	18.970	4	.001
Would consider doing MAP if paid more.	307	7.350	2	.025
IMA improves further employment.	686	12.097	4	.017
Confidence about practicing IMA.	696	71.914	4	.000
Enthusiastic about MAP.	332	27.312	2	.000
IMA should be part of the EN role.	695	37.726	4	.000
IMA is a positive step for ENs.	699	12.719	4	.013*
IMA is stressful for ENs.	694	11.089	4	.026
Quality of patient care would improve if ENs practiced IMA.	699	10.736	4	.030
Practicing IMA allows the EN to deliver holistic care.	676	32.805	4	.000
Not enough time due to other commitments to complete a MAP.	330	10.692	2	.005
Non-significant relationships.				
Fear about drug calculations is a barrier for ENs.	680	6.654	4	.155
Fear about drug calculations prevents me doing MAP.	331	4.985	2	.083

Note. * Assumption violation.

Relationships between the Subjective Norm variables and Intentions / Behaviour of the ENs towards completing a MAP are summarised in Table 37. All relationships were statistically significant.

Table 37

Results for Relationships Between Subjective Norm Variables and Intentions / Behaviour

Variables	n	χ^2	df	p
Hospital policy allows ENs to practice IMA.	684	164.549	4	.000
Employees offered opportunity to commence MAP.	335	16.857	2	.000
ENs supported by other ENs.	696	11.370	4	.023
ENs supported by RNs.	695	33.934	4	.000
ENs supported by Staff Development.	674	103.960	4	.000
Work place would support if error made.	677	43.488	4	.000
Choice given to practice IMA.	667	59.797	4	.000

Analysis of the chi-square tests that tested relationships between External variables and Intentions / Behaviour of the ENs towards completing a MAP identified four significant relationships out of the 11 tested (see summary in Table 38).

Table 38

Results for Relationships Between External Variables and Intentions/ Behaviour

Variables	n	χ^2	df	p
Significant relationships.				
EN qualifications.	647	10.036	2	.007
Years employed at work place.	664	16.934	6	.010
Location employed.	691	50.934	2	.000
Type of nursing speciality.	678	27.406	8	.001
Non-significant relationships.				
Where EN training completed.	686	4.036	2	.133
Age.	677	5.781	4	.216
Years registered as EN.	675	6.462	4	.167
Years employed in speciality.	664	4.047	4	.400
Gender.	681	.121	2	.941
Type of organisation employed (public / private).	628	3.429	2	.180
Plans to convert to RN.	690	1.848	4	.764

CHAPTER SIX

Discussion

Introduction

This chapter is divided into eleven parts. The first part discusses the use of the conceptual framework. The next five parts discuss the results of the study in relation to each research question, identifying the ENs' experience with IMA and their thoughts and feelings about this role. In the final part the limitations of the study, facilitating factors and barriers related to MAP and IMA, recommendations for further research, and implications and recommendations for clinical practice are discussed. Since the commencement of this study at the beginning of 2004, many changes have taken place for the EN, especially the introduction of the new Enterprise Bargaining Agreement in December 2004 (Enterprise agreement information sheet, n.d.). These changes have been discussed in relation to results of this study.

Conceptual framework

Ajzen and Fishbein's (1980) conceptual framework based on the TRA was adapted for this study in an attempt to describe and understand the reason why a person decides to behave in a particular way. The TRA explains how a single action of behaviour can be predicted from the corresponding behavioural intention, and the relationship between attitude and intention, and subjective norms and intention. The strength of these relationships should provide accurate prediction of the intention. The strength of the intention-behaviour relationship should predict behaviour. Therefore, according to TRA, a person's behaviour is related to intention and the factors that determine the intentions, to provide an explanation for the particular behaviour (Ajzen & Fishbein, 1980).

The conceptual model provided an appropriate framework to direct this research. It demonstrated the relationship between factors that may influence the ENs thoughts and feelings about behaviour and intentions, related to IMA. In this study it was not possible to test the relationship between the concepts of 'Intention' and 'Behaviour' because the study was cross-sectional. However, appropriate relationships between either behaviour or intention and the remaining concepts in the TRA (attitude, subjective norms and external variables) were tested and identified. In addition the 16 variables that were associated with the concepts of Attitudes, Subjective Norms and External Factors were investigated to

discover whether there was a relationship between them and the Intentions and Behaviours of the EN towards IMA.

General Discussion

The first question in this study focuses on the percentage of ENs currently administering medications independently in WA. The number of ENs registered with the Nurses Board of WA was estimated to be 5000 in 2004 (Customer Service Officer, Nurses Board of Western Australia, personal communication, July 9, 2004) when this survey was completed. A sample of 706 ENs, all of whom were members of the union, responded to the survey. This equates to 14% of the total number of ENs registered in this state. Non-Union members represent 60% of the total EN population in WA. Results show that 360 ENs had completed the MAP in WA and are currently practicing IMA. Those that completed the programme at SCGH have described benefits such as increased job satisfaction, improved morale and self-esteem. This practice change has been described as a positive step for the hospital and the ENs (Kimberley et al., 2004).

The second question in this study identifies the percentage of ENs intending to complete the MAP. This study showed that 17.0% of ENs surveyed intended to complete the MAP within the next year with 51.4% (n=360) already having completed the programme. Assuming that these ENs will complete the MAP and that the findings of this study are generalisable to the wider EN population in WA, we can predict that there will be an increase in the number of ENs in WA having completed the programme by the end of 2005.

The third question in this study focuses on the attitudes and subjective norms of ENs towards IMA. Overall results indicate a strong positive attitude towards ENs doing IMA, with 95.7 % of ENs indicating that it is a positive step for ENs. In supporting this aspect of nursing practice, 85.6% of ENs indicated that it should be part of their role. This finding is also consistent with the results indicating that 51.4 % of ENs in this survey have already completed the MAP with most practicing IMA. Brand's (1993) research supports this view that ENs are positive about increasing the scope of nursing practice including medication administration. However, a large proportion of participants responded that wages should be increased accordingly. This research has revealed that many ENs have been waiting for an increase in salary prior to commencing a MAP, a few commented that they are meeting the RN scope of nursing practice by practicing IMA, and they will not commence the

programme until they are paid accordingly. It appears pay is not the only consideration influencing their decision to do MAP because only 38.2% of those who stated that they would be willing to do MAP and IMA for increased pay actually intend to do a MAP in the next 12 months.

The new Enterprise Bargaining Agreement, which commenced on the 19th January 2005, has addressed the wage situation, however, IMA is only part of several competencies required for an EN to gain advancement to a higher level where wages increase accordingly. A level four EN now has the same salary as a RN level 1 increment 1. In a higher EN position such as Advanced Skills Enrolled Nurse level five the salary is equal to a RN level 1 increment 2 (M. Hardmann, Joint Secretary, The Enrolled Nurses Association, personal communication, December 10, 2004).

Currently the union has negotiated with the State Government to increase the number of Advanced Skills Enrolled Nurse positions. At present about 15% of ENs hold this position and the percentage is expected to increase to 30% by June 2007. This will mean extra wages for more responsibility and consequently the intentions of some ENs to complete the MAP may change. At present the desirable requirement for the selection criteria for the position of Advanced Skills Enrolled Nurse in most public health services is competency in IMA, however, this will possibly change to an essential criterion when these positions become competitive. The review of the career structure for the EN commenced in February 2005 (Liquor, Hospitality & Miscellaneous Workers Union, n.d.).

A significant proportion of ENs, 83.5% in total, responded positively to the statement that being deemed competent to do IMA would improve their chances of future employment. It is estimated in WA that a significant number of ENs are working in nursing homes. An unregulated workforce is currently challenging ENs' employment prospects in this area of healthcare as they are more economically viable for employers. These workers are performing duties that in the past were part of an EN scope of practice. This situation makes it necessary for these ENs to upgrade their skills to complete a MAP and practice IMA including other competencies to protect their employment, and the quality of health care from unregulated employees (Holmes, 2002; M. Hardmann, Joint Secretary, The Enrolled Nurses Association, personal communication, March 5, 2004). Unregulated employees (nursing assistants/personal carers) do not require licensing by an authorised body such as

the Nurses Board of Western Australia. According to the most recently available Annual Report 2003-2004 that reviewed the Australian health workforce figures from 2001 there was a total of 19,492 ENs employed showing a decrease of 20.7% since the previous review in 1996. Compared to this, the total number of nursing assistants/personal carers employed in the Australian health workforce in 2001 was 50,658 an increase of 18.8% compared to 1996 figures (Australian Health Workforce Advisory Committee, 2004).

Strategic policies between the Health Department of Western Australia and the Nurses Board of Western Australia are having an impact on professional roles and boundaries in health and governing the way that nursing services are provided, affecting the career pathways, employment and educational opportunities available to individual nurses. The Health Department implemented the policy changes in the scope of nursing practice in order to best meet the patients' needs and the Nurses Board of Western Australia ensures that the policy operates within the legislative framework. A recommendation from the Australian Health Workforce Advisory Committee (2004) was that stakeholders develop a health workforce policy based on seven principles. One of these principles is as follows

To make optimal use of workplace skills and ensure best health outcomes, it is recognised that a complementary realignment of existing workforce roles or the creation of new roles may be necessary. Any workplace redesign will address health needs, the provision of sustainable quality care and the required competencies to meet service needs. (Australian Health Workforce Advisory Committee, 2004, p. 16)

The Health Department of Western Australia has assessed its current workforce and has found an area in which workplace skills can be utilised by changing the role of the EN. A framework has been implemented for policy changes to clauses in the scope of practice for ENs, which is being overseen by the Chief Nursing Officer of Western Australia. The scope of ENs' practice will have no limitations meaning that when the EN has been educated and deemed competent, and legally authorised to practise a particular nursing skill in a clinical setting, they can be delegated this duty by a RN using a Decision Making Framework (Nurses Board of Western Australia, 2004). The competencies gained will be transferable and recognised in all hospitals in WA (Department of Health, Western Australia, 2005).

Since SCGH empowered ENs to do IMA, RNs have reported decreased stress levels and workloads (Kimberley et al., 2004). RNs may be reporting this finding due to the fact

that these stress levels have transferred to the ENs now doing IMA and have an increased workload. Some ENs commented that since they commenced IMA they are still allocated the heaviest patients in the clinical setting, that is the patient with a higher acuity workload and now they have the extra burden of trying to manage their time to include administering medications, which adds additional stress. The hospital workplace is changing with patients being older, suffering more acute and chronic illness requiring more complex care, higher turnover with shorter lengths of stay increasing the workload and productivity of nurses (Australian Health Workforce Advisory Committee, 2004; Hospital in Australia, 2003). These changes require the role of the EN to change, possibly contributing to increased stress levels. Workplace stress in nursing is associated with factors of workload, leadership/management style, professional conflict and emotional cost of caring. These are the main sources of stress, which have been identified for nurses for many years (McVicar, 2004).

A study by Balas, Scott, and Rogers (2004) on 393 full time hospital nurses found that recurrent factors of high acuity levels, poor staffing levels and heavy workloads can result in stress and fatigued nurses leading to a higher incidence of medication errors. Wachter (2003) reported on key issues related to medication errors reported in hospitals in 2001 in the United States of America presented by Dianne Cousins, vice-president of United States Pharmacopeia for the Advancement of Patient Safety. The most common medication error was at the time of administration (37%) the main cause being an omission error (29%) followed by improper dose (21%). The most common contributing factors related to this error were distractions (46%) and increased workload by the nurse (24%) with a significant proportion of errors relating to staffing problems. These results were based on a voluntary reporting system and overall 97.6% of medication errors reported were not harmful to the patient. However a recent study by Deans (2005) of 79 RNs that worked in six clinical areas in a major regional hospital in Victoria over a four week time period found that the most common human factor causing medication error was stress / high workload (25.3%) and the most common environmental factor was interruptions and distractions (25.3%). The majority of nurses (89%) felt comfortable with reporting a medication error.

It was evident from the findings of this study that administering medications is considered stressful for some ENs. This was mainly from those ENs already practicing IMA and may be considered as a barrier that discourages others from considering the MAP,

especially if their workload is going to increase. Areas that are related to stress while the EN is administering medications should be identified and strategies put in place to help reduce this stress. Dean (2005) suggests that nurses need support when practicing IMA to reduce the human and environment factors that impact on staff during this time. A study by Pape et al. (2005) looked at innovative approaches to reducing nurses' distractions during medication administration, resulting in reducing stress as the nurse is vulnerable to multiple interruptions and distractions which affect the ability to concentrate and focus leading to medication errors. Pape et al. (2005) found that inexpensive simple tools such as protocol checklists and signage as reminders to reduce distractions for medication safety can reduce errors. Reduced stress is likely to lead to more enthusiasm and confidence in the EN completing a MAP and doing IMA.

The majority of ENs reported that they were confident (70.7%) and enthusiastic (74.4%), about completing a MAP and practicing IMA. Deans (2005) reported that 96% of the RNs in his study felt confident when administering medications yet 29% of participants agreed that they needed further training in medication administration. Some of the ENs commented they would like to have the opportunity to have further training in medication administration after completion of the MAP. Over half (54.9%) of the ENs in this study felt that drug calculations could be a barrier in completing the MAP, however, 63.6% felt that the fear of drug calculations would not prevent them from commencing a MAP. The ability of ENs and all nurses to calculate correct medication dosage has repercussions for patients' well being. A study by Weller (2000) of 202 undergraduate third year nurses enrolled in the Bachelor of Nursing Degree in Victoria in 1999 found that many participants were not confident about their drug calculation ability. It was acknowledged that participants should achieve an 80% proficiency level as being acceptable, however, of those participants only 36% achieved this result. In WA the Nurses Board of Western Australia requires 100% proficiency in nursing students' final medication calculation exam at the EN diploma level and the RN degree level (Nurses Board of Western Australia, 2005).

In this study the majority of ENs felt that if they were practicing IMA it would improve the quality of patient care. The work of Kimberley et al. (2004) supports this claim revealing that benefits to patients at SCGH with ENs doing IMA include greater continuity of care and better time management of medication administration. Deans (2005) reported that the most frequent error reported by RNs was administration of medications at the wrong

time. Deans also reported that the RNs perceived that if the medication is given up to an hour late it is considered normal practice and not a medication error.

This research identified some ENs claiming they were being limited in increasing their scope of nursing practice, including IMA, due to hospital policy. Thirty percent of EN participants in this survey could not do IMA in their workplace due to hospital policy and only 58% had been given the opportunity to participate in a MAP. However, this situation is currently being rectified, barriers are being removed giving all Health Services in WA a clear policy. This will allow the EN to practice within legislative and regulatory boundaries detailed in the Poisons Act 1964 and Poisons Regulations 1965, when they have gained the necessary competencies through education.

The EN who administers medication must follow the guidelines outlined by the Nurses Board of Western Australia in 2001 (Department of Health, Western Australia, 2005). Of the 58% of ENs given the opportunity to complete the MAP from their employer a large majority 51.4% took this opportunity with 47.5% now practicing IMA. At SCGH in August 2005 after an 18-month trial period Advanced Skills Enrolled Nurses were given the opportunity to gain competency in administering limited intravenous medications after completing a four-day course. Over two thirds of the 33 Advanced Skills Enrolled Nurses employed at the hospital had completed the course by the end of September 2005 (Enrolled Nurse Medications, 2005).

Baker commented that Australia should aim for a more flexible nursing workforce for the future, involving a better teamwork approach to patient care between RNs and ENs (Young, 2004). Part of the teamwork approach should mean that the workload is distributed fairly and other team members give support. The EN respondents from this study indicated that support was given by RNs (79.0%) and they also get support from other ENs (76.4%) when they do IMA. When completing a MAP only 70% of ENs indicated that they would get support from Staff Development Nurses. A recommendation from the Australian Health Workforce Advisory Committee (2004) was that stakeholders develop

a health workforce policy where all health care environments regardless of role, function, size or location should be places in which people want to work and develop; where the workforce is valued and supported and operates in an environment of mutual collaboration (Australian Health Workforce Advisory Committee, 2004, p. 16).

To encourage a teamwork approach between the multidisciplinary team and ENs an innovative idea at SCGH was introduced in 2005 to help liberate ENs from their strictly defined traditional roles. This idea was to change ENs uniforms from blue tops to white with blue epaulettes indicating their level of practice (J Catlow, Union Delegate, Enrolled Nurses Association, Sir Charles Gairdner Hospital, personal communication, January 5, 2006). White uniforms have been associated with uniting nurses as a team, increasing morale, increasing collaboration between nursing and other medical staff and identification of the professional nurse and competency (Scott, 2005, p. 25). Scott (2004) described how patients had refused to take medications because they were unsure of the identity and qualifications of the person administering them because they were not wearing a white uniform. The patient identifies the white uniform with a nurse, a symbol of professionalism (Mangum, Garrison, Lind, & Hilton, 1997). Traditionally RNs have worn white uniforms and ENs have worn a variety of other colours depending on the organisation they are employed by. Gibson and Heartfield (2005a) reported that one of the participants in their qualitative study of ENs on the contemporary role, function, competencies and educational preparations in Australia was required to change into the same uniform as an RN. This EN commented on how differently other members of the healthcare team treated her “as [though] I’ve got a brain” (Gibson & Heartfield, 2005a, p. 123).

A study of graduate nurses by Manias, Aitken, and Dunning (2005) recommended that a component of providing quality patient care is that experienced health professionals should provide peer support and act as role models demonstrating how effective protocol use can be when practicing medication administration. Participants in their study were more likely to follow protocols feeling they had a means of protection and a decreased chance that disciplinary action would be involved if a medication error were made. Deans (2005) discussed how it is essential that nurses base their clinical practice on Clinical Practice Protocols that set the minimum requirements for medication administration.

Less than half of the ENs surveyed indicated that they would have support from their work place if they made a medication error and some commented that it depended on the type of medication error and the patient’s outcome. The feeling of lack of support makes nurses report only a fraction of medication errors, because of fear of reprisal from employers and regulatory bodies such as the Nurses Board of Western Australia. This claim can be substantiated by a study completed by Osborne, Blais, and Hayes (1999) regarding nurses’

perception of medication errors. Osborne et al. (1999) completed a descriptive comparative study of 57 RNs and reported that 84.2% knew what constituted a medication error and 86% when an incident report should be documented. However 86% reported that medication errors are not reported because nurses are afraid and 57.9% stated they did not report a medication error unless they thought it was serious. Some of the RNs (25%) reported that they had been afraid of repercussions when they had made a medication error so it went unreported.

Clinical Governance is a policy introduced into the health care system in Western Australia, which is about placing legal obligations on employers to ensure that employees are fit for the role they perform. This system is about patient safety and improving services and monitoring the effectiveness of care. The data collected for improving safety of care are gained by careful documentation of episodes of care and analysis of particular adverse events on the Australian Incident Monitoring System (AIMS) forms. Adverse drug events should be documented on these forms. This system avoids the blaming of individuals for active errors and explores the latent errors that exist in a complex health care environment (Department of Health, Government of WA, n.d.). All staff are encouraged to report all medication errors making management aware of potential and actual adverse situations so that changes can be made to clinical practice. A study by Wakefield, Wakefield, Uden-Holman, and Blegen (1996) showed that nurses were more inclined to report an error if they felt safe in their workplace and the reporting system was easy to use. Deans (2005) emphasises the importance of using a no blame approach when a medication error occurs. However, in this survey less than half of the ENs felt they would be supported in their work place if they made a medication error. Results from a study by Runciman, Roughead, Semple, and Adams (2003) reviewing information about adverse drug events and medication errors in Australia using AIMS found that 26% of 27,000 hospital incidents reported in the Australian health system were medication related.

In this study just over half (58.8 %) of the respondents indicated that they had a choice about whether or not to complete a MAP. Young (2004) reported on key issues relating to medication administration for ENs for the Chief Nursing Officer of New South Wales (NSW). It was noted that it is not mandatory for ENs in that state to complete medication administration as part of the EN scope of practice and their right to refuse is respected. However if a health care provider has to choose between employing an EN that

practices IMA and one that refuses to update her / his nursing competency including IMA, it would be more economically viable to employ the better qualified EN for the position. In the current environment with increasing rates of salary and declining numbers of RNs, hospitals are aiming to provide a mix of grades of qualified nurses. If an EN meets the scope of practice, which includes IMA, employing an EN becomes a cheaper option. This is expected to keep the EN position in demand for the future (Blegen, Goode, & Reed, 1998; Holmes, 2002; McKenna, 1995; Milson-Hawke & Higgins, 2003; Young, 2004).

The fourth question focused on identifying the relationships between ENs' attitudes, subjective norms, and intentions / behaviour in relation to IMA. The results of this study revealed 11 out of 13 statistically significant relationships between attitude and intentions / behaviour of the ENs in relation to completing a MAP. In addition, all seven relationships between subjective norms and intentions / behaviour were statistically significant. These are discussed in more detail below.

ENs who had completed or were intending to complete a MAP and practice IMA were significantly more likely to expect more pay and believed that IMA improved their chances of future employment prospects. They believed that IMA should be part of the EN role and that practicing IMA improves the quality of patient care. These attitude variables from the conceptual framework were identified as facilitating factors that influence the ENs intention and behaviour towards completing a MAP and practicing IMA. Contrary to expectations, fear about drug calculations was not significantly associated with intention and behaviour of ENs in relation to completing a MAP, although 54.9% of ENs stated that drug calculations were a barrier to commencing a MAP.

In relation to attitudes towards payment for IMA some ENs commented that with the extra responsibility of administering medications they are entitled to more pay. Brand's (1993) survey of RNs in regard to ENs increasing their scope of practice expressed concern that the EN role could be exploited because they would be doing similar work as a RN for less pay. With the increase in salary from the new Enterprise Bargaining Agreement recently introduced in WA combined with the new career structure for ENs this may have a positive influence on ENs that in the past were unsure or never intended to complete a MAP.

Those ENs who believed their chances of future employment would improve if they were practicing IMA were more likely to have completed a MAP or were planning to complete a MAP identifying this attitude variable as a facilitating factor. However this study found the mean number of years that an EN had worked with their current employer was 9.6 years indicating that ENs are usually long term employees of a health facility and rarely seek new employment. Unless the EN is seeking new employment as an EN this would not be a positive influence for them to complete a MAP and practice IMA. Although many ENs (83.5%) indicated that being competent to practice IMA would improve their chances of future employment, several commented that their competency was not recognised by other health services. Yet for an EN to be competitive to gain a new position in an organization, an employer would consider if the EN had previously completed a MAP and was practicing IMA. This would show favourably that the EN was updating skills through competencies making them a better candidate for a position than an EN that had not completed the MAP.

At the time of data collection for this study there was no coordinated assisted approach of recognition of competency standards including IMA being transferable between all government hospitals in WA. Regardless of whether the EN had completed a MAP and was practicing IMA in the hope of future employment prospects, this competency was not transferable between health services. One EN commented that she had completed the MAP three times due to the competency not being transferable between health services. During the course of this study this problem was recognised by the Health Department of Western Australia as a barrier to ENs wanting to increase their scope of nursing practice and changes are being implemented to have only one policy for ENs being able to meet different scopes of practice including administering medications (Liquor, Hospitality & Miscellaneous Workers Union, n.d.).

Those ENs with negative attitudes towards IMA such as IMA being stressful and not having enough time due to other commitments to complete a MAP were significantly more likely to have not completed the MAP or to be negative or unsure about their intentions. These two variables were the only attitude variables from the conceptual framework considered to be barriers that influenced the ENs' intentions and behaviours towards IMA because of the substantial percentage of ENs who displayed these negative attitudes or were ambivalent in their response to these items. Administration of medications is one of the most frequently occurring high-risk procedures of nursing. Stress due to high workload and

fatigue due to lack of sleep are the main human factors reported by RNs that cause medication errors (Dean, 2005). It may be difficult for some ENs to juggle educational requirements to complete the MAP and conflicting family and domestic commitments. For others it is personal motivation to gain knowledge and self-esteem and improve their position. Those who intended to complete the MAP within the next 12 months felt they had enough time. Some ENs commented that their employers were supportive in helping to overcome the time issue to complete a MAP by rostering allocated paid study days to assist the EN with time management to complete the MAP. Other ENs complained that their employers expected them to complete the MAP in their own time, which made several ENs refuse.

Those ENs who had completed a MAP or were intending to complete a MAP and practice IMA were significantly more likely to have positive attitudes towards IMA such as being confident or enthusiastic. These ENs were also more likely to believe that IMA should be part of the role of the EN and the quality of patient care would improve if ENs practiced IMA. However while the majority were positive there was still a substantial minority with negative attitudes and therefore it is important to identify strategies that will assist in changing these negative attitudes. The analysis of the qualitative data may assist in understanding these negative attitudes, but further research may also be needed. These attitudes can have an effect on job satisfaction and morale in the working environment for those who have completed or are planning to complete a MAP within the next 12 months. According to Heartfield and Gibson (2005b) some ENs perceived that the only role difference between being a RN and an EN was that RNs administered the medications as part of their practice. Moreover, although ENs had a similar role to RNs, Gibson and Heartfield (2003) claim that the thought processes of ENs can often be different due to the level of education and role responsibility.

Heartfield and Gibson (2005b) discussed that previously WA ENs were limited in their scope of practice due to organisational policy. However the role of the EN in this state is presently changing making it evident that many will have to update their practice skills and competences. ENs are now required to engage in life long learning and they can provide evidence of this learning by gaining competencies in their scope of nursing practice. Documented evidence of this learning is required to be kept in a professional portfolio,

which can be audited by the Nurses Board of Western Australia (Nurses Board of Western Australia, 2005).

Milson-Hawke and Higgins (2004) commented that ENs determined their own scope of practice due to unclear boundaries. They appear to practice depending on the expectations of the RN who allocated the workload. According to Gibson and Heartfield (2005b) the blurring of boundaries between nursing assistants / personal carers and ENs and between ENs and RNs is a cause of friction and stress. Furthermore the expectation of the workload for the EN is determined by the staffing level, which is compounded by the inadequate staffing overall, causing further stress. In this study a few ENs complained that they had a heavy workload. The new Enterprise Bargaining Agreement introduced in WA has a clause intimating there will be no limitations placed on the scope of nursing practice for ENs (Liquor, Hospitality & Miscellaneous Workers Union, n.d.). If the EN is deemed competent in meeting a particular scope of practice after education and assessment and is willing to accept the delegated activity, using the Scope of Nursing Practice Decision-Making Framework, the EN is able to do a particular duty. This scope of practice not only includes medication administration but all the scopes of practice of an RN. This means that they will not be prevented from doing tasks or working in areas just because they are ENs (Nurses Board of Western Australia, 2004; Morrison, Thompson, & Fox Young, 2004). The process was implemented after this study commenced and is currently being monitored by the Chief Nursing Officer, who published a policy in July 2005, which all hospitals must implement (Liquor, Hospitality & Miscellaneous Workers Union, n.d.). Perhaps the reason this strategy is being introduced is to help decrease the impact of the future predicted nursing shortage as discussed by Cowin and Jacobsson (2003). However according to Heartfield and Gibson (2005b) funding constraints to health care facilities is also a contributing factor for the employment of ENs in health care settings.

ENs who had completed or were intending to complete the MAP were significantly more likely to have a hospital policy that allowed them to practice IMA, and to be given the opportunity to participate in a MAP. Both of these factors are subjective norm variables in the conceptual framework. They are identified in this study as facilitating factors that influence the ENs' behaviour and intentions to complete a MAP and practice IMA because the majority of ENs responded positively to the questionnaire items. Several health care services were identified in this study that did not allow ENs to practice IMA. During the

course of this study the problem was recognised by the Health Department of Western Australia as a barrier and changes have been implemented. All healthcare services were advised to remove all artificial barriers that would prevent the EN from reaching the full extent of their practice in the clinical area within legislative and regulatory boundaries (Department of Health, Western Australia, 2005). It is now the responsibility of both the organisation where the EN is employed and the EN to ensure that the individual is competent in IMA.

In this study the ENs who completed or were intending to complete the MAP were significantly more likely to believe that their work place would support them if a medication error was made. However, in the descriptive analyses, slightly under half of the ENs believed they would be supported and a large percentage neither agreed nor disagreed with the statement. Consequently, in this study, this factor is considered to be a barrier influencing the ENs' behaviour and intentions to complete a MAP and practice IMA. Osborne, Blais, and Hayes (1999) claim that nurses did not report most medication errors due to the fear of lack of managerial support. A finding of an Australian study by Walker and Lowe (1998) on nurses' views of reportable medication incidents found nurses were more likely to report errors if the patient's safety had been compromised. The major reason why nurses did not report errors was due to self-preservation. However Deans (2005) found that 89% of nurses felt comfortable with reporting a medication error.

ENs who completed or were intending to complete the MAP were significantly more likely to believe that other nurses would be supportive of ENs when they practiced IMA including RNs, ENs and Staff Development Nurses. The subjective norm variable 'peer support' has been identified as a facilitating factor that influences ENs' intention and behaviour towards completing a MAP and practicing IMA. In contrast, those ENs in this study that felt they had lack of support from other colleagues were more likely to be unsure about completing or never intend to complete a MAP. With this new process being introduced the importance of a team approach towards patient care between RNs and ENs and support between the levels of nursing will be extremely important. This potential barrier of lack of peer support from other nurses may also be present when ENs are required to update their skills to meet new scopes of practices different from IMA. Gibson and Heartfield (2005a) reported that teamwork and recognition by others of the contribution to healthcare delivery by ENs were two major themes of their findings.

The fifth question in this study focused on identifying the external variables, that affect the ENs' intentions / behaviour towards completing a MAP and practicing IMA. The following factors: ENs qualifications (hospital based or higher than hospital based training), years employed at their work place, location employed (metropolitan or rural/regional/remote) and the type of nursing speciality they worked in (aged care, medical services, mental health and other health services, surgical services) were significantly associated with completion of or intention to complete the MAP. However contrary to expectations, the following variables were not associated with intention and behaviour related to MAP and IMA: where the EN completed their training (Western Australia or other), age, years registered as an EN, years employed in speciality, gender, type of organisation employed (public or private) or plans to convert to RN. These results are discussed in more detail below.

In relation to ENs' educational qualifications, those ENs that had hospital-based qualifications were significantly more inclined to complete the MAP and practice IMA than those qualified elsewhere. One explanation for this finding is that those with hospital-based education qualifications would have been practicing longer and could therefore have more clinical experience and realise the importance of increasing their scope of nursing practice. However, there was no significant association between age or the number of years registered and the intention and behaviour of the ENs to practice IMA or commence a MAP within the next three to 12 months, a finding this study is unable to explain. The average years registered for the EN was 22 years and the average age was 46.4 years. This means that for some there has been a substantial period of time between completing their training and studying for an intense course such as the MAP.

According to the most recently available Annual Report 2003-2004 that reviewed the Australian health workforce figures from 2001 Australia has the largest health force in its history (Australian Health Workforce Committee, 2004) and now there are more nurses per patient than previously reported by the Australian Bureau of Statistics in 2001. However, the workforce is getting older with an average age of 43.1 years (Polimeni, 2005). According to the Australian Institute of Health and Welfare (2005) based on figures from 2003 half of all nurses in Australia worked part time with enrolled nurses working an average of 31.2 hours per week. If an EN is working part time this could possibly lead to less stress associated with

high workloads and fatigue, reducing human factors that create medication errors (Deans, 2005).

The location of employment (whether metropolitan or rural/regional/remote) has been identified as a factor that affects whether or not ENs complete a MAP and practice IMA. For those ENs employed in metropolitan areas the location is a facilitating factor whereas for those ENs employed in rural/regional/remote areas location is a barrier. Some ENs commented on the availability of MAP and Staff Development Nurses for those employed in the rural and remote areas suggesting an external unit be developed to enable them to participate in a MAP. This suggestion may help with retaining ENs in rural and remote areas of WA. A study by Hegney, McCarthy, Rogers-Clark, and Gorman (2002) investigated why nurses ($n=146$) chose to leave their employment in rural and remote areas in Queensland as these areas were reported to have a higher turnover rate than the state average between February 1999 and May 2000. When the study compared factors that influenced ENs' and RNs' decision to leave rural and remote areas the issues that had a higher percentage for ENs leaving were physical demands of work, management recognition for their work (also found by Heartfield and Gibson [2005a]), workload, and the availability of opportunities for education and training. Although the findings of Hegney et al. (2002) cannot be generalised to the Australian nursing workforce the study confirmed findings of previous Australian research.

In this study the average age of the EN was 46.4 years indicating there is a need for recruitment for the future. At the same time there is also a need to find strategies to assist in retaining ENs. According to the Australian Health Workforce Committee, (2004) in July 2004 the Australian Government announced that there would be more nursing places made available for nursing students including Enrolled Nursing, however, to meet the demand for supply it has been projected that Australia requires 5,734 new ENs in 2006 and the additional places that have been made available will not meet the projected demand. Strategies have been developed to help retain these new ENs in the workforce (Australian Health Workforce Committee, 2004). To help overcome the problem of retaining ENs in remote and regional areas of WA where there is a difficulty retaining nurses, an EN Online project was recently developed through TAFE to give aspiring students the same opportunities as those in Perth. These students will complete the course at Diploma level as recently approved by the Nurses Board of Western Australia (EN Online, 2005). There is currently a conversion course being

developed for ENs in WA with previous qualifications less than Diploma level to upgrade to Enrolled nurse diploma level (M. Hardmann, Joint Secretary, The Enrolled Nurses Association, personal communication, January 12, 2006).

The changes to the role of the EN in WA are similar to events of the past in the UK. The EN role is likely to become very similar to the RN role, but without career advancement prospects past a certain level. To address this problem it has been suggested by some ENs that the alteration of the title Enrolled Nurse should be changed to Division 2 Registered Nurse as in the UK and in Victoria (Allan & McLafferty, 1999; Griffiths & Forrester, 2002; Hembrough & Sheehan, 1989; Parry & Cobley, 1996). This would help alleviate the possible friction between the roles as discussed by Brand (1993) and Gibson and Heartfield (2003). There is currently a career pathway available for ENs to convert to RN in WA, however many respondents in this study stated this pathway is too long considering the experience ENs already have. They also stated it is very competitive to gain entrance and too expensive.

Limitations

The opinions of this sample of respondents may not reflect all ENs as only members of the union were given the opportunity to answer the questionnaire. Non-union members represent 60% of the total EN population in WA and these ENs may have different views on IMA to those expressed by union members.

The quality of data the researcher obtained from the questionnaire could be affected as an established network of communications in a hospital or nursing home is already present, an individual EN may be influenced by extremes of opinions from those who are negative or positive about the scope of practice in relation to administering medications. Participants were asked to express their own opinions and asked not to discuss their responses to the questionnaire with other ENs who had not yet completed it in order to limit this bias. However this bias cannot be ruled out, as it is impossible to monitor.

The questionnaire used for the study was newly developed and it was beyond the scope of this study to validate the instrument beyond testing for face and content validity, and test retest reliability.

There was a total of 434 participants (61% of all questionnaires returned on time) who added additional comments to the space provided in the questionnaire. Due to the time

restriction of this thesis, only comments providing additional information that was not already addressed in the questionnaire were reported in the results section. The entire data set of additional comments will need to be analysed in detail using qualitative methodology at a later date.

*Summary of Facilitating Factors and Barriers Related to Medication Administration
Programme and Independent Medication Administration*

This research explored ENs' attitudes, intentions and behaviour towards IMA, and also identified barriers and facilitating factors that affect their willingness and confidence to complete a MAP and practice IMA. The key findings of this study show that ENs' attitude overall is strongly positive about increasing their scope of nursing practice to include IMA; a large percentage feel that it is a positive step for ENs. The attitude, subjective norm and external variables that are facilitating factors and barriers are listed below.

Among the variables related to attitude, there were five facilitating factors. The first factor was 'wages'; there was an expectation that ENs would be paid more for practicing IMA. Those who had not completed a MAP would consider doing a MAP if they were paid more. The second factor was related to 'future employment'; there was an expectation that those ENs that are deemed competent to practice IMA have improved their chances of future employment. The third factor related to 'confidence'; most ENs felt confident and enthusiastic about practicing IMA. The fourth factor related to the 'role of the EN'. There was an expectation that ENs should administer medications independently as part of their role, therefore expanding the scope of practice giving their role a more positive step. The fifth factor related to 'quality of care'. There was an expectation that the quality of care would improve if ENs were independently administering medications. Most ENs believe that administering medications independently would /does allow them to deliver holistic care to the patient.

Interestingly, there was no significant association between intention or behaviour related to MAP and fear about drug calculations being a barrier to undertaking MAP. Nevertheless, the finding that a substantial percentage of ENs reported fear of drug calculations indicates that strategies need to be developed to reduce this fear (see Figure 4 and 5).

There were two factors related to attitude variables, identified as barriers. The first factor was related to 'stress for the EN'. There was a perception that administering medications independently is stressful for ENs. The second factor related to 'time' issues. Those ENs believing they did not have enough time due to other commitments to complete a MAP, were significantly more likely to have not completed the MAP or to be unsure about their intentions.

Among the seven variables related to subjective norms, there were two variables significantly associated with intention and behaviour towards IMA affecting the ENs' willingness and confidence to complete a MAP and practice IMA. The variable 'hospital policy' consisted of two items, one of which was considered a facilitating factor. Among those ENs employed in a work place where the policy allows them to practice IMA, if the employer offered the EN the opportunity to participate in an MAP they would be more likely to accept. The second variable was related to 'support'. This variable consisted of four items, three of which were considered facilitating factors. Most ENs believed they are generally supported by other ENs and RNs while they practiced IMA, most believed that Staff Development Nurses were supportive of ENs when they participated in the MAP. However, one item related to the 'support' variable was identified as a barrier. Many ENs believe their workplace would not support them if they made any medication errors (see Figure 18). Another variable identified as a facilitating factor was 'choice'; many ENs feel they do have a choice about whether or not to complete a MAP (see Figure 19).

Among the variables related to external factors there were three facilitating factors and one barrier identified. The first facilitating factor was 'education'; the item relating to EN qualifications. Those ENs with education qualifications that were hospital based were more likely to have completed a MAP and be practicing IMA or intending to complete a MAP than those that had qualified elsewhere. The second facilitating factor was 'experience'; the item relating to how many years the EN had been employed at their workplace. Those employed in the workplace longer were more likely to have completed a MAP and be practicing IMA or intending to complete a MAP within the next 12 months. The third facilitating factor was 'employment'; the item relating to the type of nursing speciality the EN was employed in. Those employed in aged care and medical services were more likely to have completed the MAP and be practicing IMA or intending to complete a MAP within the next 12 months than those working in other specialities. One item related to

the external variable factor 'employment' was identified as a barrier. The item related to location of employment. Those ENs employed in the non-metropolitan area were less likely to have completed a MAP and be practicing IMA than those employed in the metropolitan area.

Recommendation for Further Research

There are a number of specific recommendations arising from the results of this study in regard to future research in the area of IMA. It is recommended that further studies be undertaken to carefully examine factors identified as barriers for the EN to practice IMA and develop strategies in the clinical areas to help reduce these barriers. Current research needs to address issues relating to stress when the ENs administer medications to help reduce the risk of medication errors. Strategies need to be implemented by managers to allow time for the EN to complete a MAP in work time. Managers need to encourage a teamwork approach between the different levels of nursing staff so the ENs feel supported when they practice IMA and if a medication error occurs.

It is recommended that a study be conducted to assess the ENs' attitudes, intentions and behaviour relating to the changes in their role as the scope of nursing practice increases. The quality of patient care needs to be assessed due to these changes being implemented. Further research is also required to assess how RNs feel about ENs increasing their scope of nursing practice including IMA and whether friction is occurring due to unclear boundaries. Managers' attitudes regarding the employment of ENs who have no intention to practice IMA should also be studied.

Implications and Recommendations for Clinical Practice

In addition to the recommendations for further research described above there are a number of implications for practice arising from the results of this study. The number of ENs who want to complete the MAP is expected to increase significantly in the near future due to the ramifications of the latest Enterprise Bargaining Agreement. Additional places will be required on programmes, and ward areas will need to be able to accommodate the demand for these nurses to complete the practical component of the programme. With the expected increase in numbers completing the MAP this may cause difficulties for those not doing the programme putting them under a certain amount of pressure. Currently there is an advantage for those ENs who have completed the programme already, to be able to gain a position of

Advanced Skills Enrolled Nurse, because they will have a desirable requirement for the selection criteria.

All health care facilities in WA should allow the EN to practice IMA and make the MAP available to all, not just those selected by management. An external unit needs to be developed for those working in rural or remote areas to ensure these ENs are not discriminated against due to distance. A short refresher course for ENs on drug calculations needs to be developed for those that feel drug calculations are a problem. All ENs need encouragement to increase their scope of nursing practice skills not only by practicing IMA but other scopes of practice through education, assessment and competency, allowing them to develop professionally and obtain more work satisfaction and professional recognition.

The skill mix of nurses may change in the future with an increase of EN to RN ratio on the wards as the impact of the EN increasing their scope of practice becomes more noticeable. It will impact on the quality of care for the patient and the cost of health care in the future, and will need monitoring. ENs increasing their scope of nursing practice this will help reduce the future predicted nursing shortage in this state. Managers will need to promote a team approach towards patient care and help eliminate barriers between RNs and ENs if and when they become evident.

Only 20% of the ENs who participated in the questionnaire are currently doing or plan to do a conversion to RN in the future. This low number may be contributed to ENs being able to increase their scope of nursing practice including IMA and their current salary increase making it more viable to remain an EN. To help facilitate a pathway it is recommended that the title of Enrolled Nurse be changed to Registered Nurse Division 2 when a Diploma level of competency has been achieved. Once the EN has reached Registered Nurse Division 2 this should mean they have automatic entry into university to complete their Bachelor of Nursing qualification. Their employer should pay those studying to complete their Bachelor of Nursing qualification their normal EN rate while on Clinical Practice. The employer of the EN studying to upgrade to RN should accommodate them with rosters and annual leave that facilitate university studies. Generous scholarships from the Health Department should continue to help pay university fees. These recommendations will help in the process of articulating a pathway for ENs to upgrade to RNs for future career advancement recommended by the National Review of Nursing Education (2002).

Conclusion

The findings of this study have indicated that the ENs' attitudes, intentions and behaviour related to IMA are strongly positive with the majority agreeing that administering medications independently should be part of their role. Significant barriers have been identified that affect the intentions and behaviour of ENs towards completing a MAP and practicing IMA, which have an effect on clinical practice. These barriers include the perception that administering medications is stressful for ENs and time issues to complete a MAP. Workplaces need to be supportive if a medication error occurs. Those ENs employed in rural/regional/remote locations need to be provided with access to a MAP. Those ENs that believe drug calculations could be a potential problem for them completing a MAP should be given the opportunity to develop these skills prior to commencing the MAP. There will be many changes in the foreseeable future for the role of the EN as the scope of nursing practice changes. This will have an impact on health care provision. The most important thing to be monitored during these changes will be the quality of patient care.

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APPENDIX A

Cover Letter For Questionnaire

Edith Cowan University

School of Nursing and Public Health.

Project Title:

Enrolled Nurses' attitudes, intentions and behaviour related to independent medication administration

Introduction:

My name is Donna Sayers and I previously worked as an Enrolled Nurse for twenty years prior to commencing my Bachelor of Nursing at Edith Cowan University. I'm currently studying for the award of Bachelor of Nursing (Honours) and I require your help to complete a research study. My supervisors for this research are Dr. Sue Nikoletti of Edith Cowan University and Helen Myers Clinical Nurse Consultant, in The Centre for Nursing Research at Sir Charles Gairdner Hospital.

What is this Survey About?

The aim of this survey is to gather information about factors that influence the behaviour of Enrolled Nurses in relation to independent medication administration. Research is required as a significant number of Enrolled Nurses are undertaking an Enrolled Nurse Medication Program. The Australian Liquor, Hospitality and Miscellaneous Workers Union of Western Australia have kindly offered to distribute and pay for the return mail postage.

What are the Possible Benefits of Taking Part in This Research?

Independent medication administration is a change in the scope of practice for the Enrolled Nurse that eventually will be introduced nationally. This is the first survey of its kind in Western Australia giving you the opportunity to voice your opinion on an issue that is likely to have an impact on the role of all Enrolled Nurses.

What is Required of You?

This survey should take about ten minutes of your time to complete. Return mail is free, so all you have to do is complete the questionnaire and return it in the reply paid envelope.

Will My Taking Part in this Study be Kept Confidential?

No names are required and your participation will remain anonymous. To maintain confidentiality all questionnaires collected will be locked away in a secure place for a period of no less than five years and then destroyed by shredding. All Enrolled Nurses are invited to participate. However participation is voluntary and refusal to participate will involve no penalty or loss. The Edith Cowan University Faculty Ethics Committee has approved the research proposal.

If You Have Any Questions About the Research

Further details regarding this research study are available from Donna Sayers on 9346 2019 between 8am and 4pm weekdays. If you have any concerns and wish to speak to an independent person you may contact Associate Professor Kate White, Head of School, School of Nursing and Public Health, Edith Cowan University on 9273 8024. If you wish to comment on any question or qualify your answers please use the space provided on the back cover. A copy of the research results will be sent to the Australian Liquor, Hospitality and Miscellaneous Workers Union of Western Australia.

APPENDIX B

Questionnaire About Independent Medication Administration By Enrolled Nurses

QUESTIONNAIRE ABOUT INDEPENDENT MEDICATION ADMINISTRATION BY ENROLLED NURSES

This questionnaire is designed to find out your experience with independent medication administration and your thoughts and feelings about this role for Enrolled Nurses. When answering the questionnaire please use a black pen to completely fill in the appropriate circle that best describes your response to the question. **Please return the questionnaire in the reply paid envelope (no stamp required).**

Example Question

	Everyday	Weekly	Monthly	Rarely	Never
How often do you shop for groceries ?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

PART A. These questions relate to your experience with EN Medication Administration.

1. When do you plan to do a Medication Administration Programme?

- | | |
|-------------------|-----------------------|
| Next 3 months | <input type="radio"/> |
| Next 6 months | <input type="radio"/> |
| Next 12 months | <input type="radio"/> |
| Not Sure | <input type="radio"/> |
| Never | <input type="radio"/> |
| Completed already | <input type="radio"/> |

2. How often do you administer medications independently?

Every Shift ☐

Weekly ☐

Monthly ☐

Rarely ☐

Never ☐

Please completely fill in the appropriate circle that best describes your response to each question.	Yes	No	Unsure	Not Applicable
3. Do you think that ENs should be paid more money if they administer medications independently?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. If you are not already administering medications, would you consider doing an education programme and administering medications independently if you were paid more money?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Does your work place policy allow for ENs to administer medications independently?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Has your employer offered you the opportunity to participate in an EN Medication Administration Programme?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Do you feel that ENs that are deemed competent to administer medications independently have improved their chances of future employment?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please completely fill in the appropriate circle that best describes your response to each question.	Strongly Agree	Mildly Agree	Neither Agree Nor Disagree	Mildly Disagree	Strongly Disagree
8. I feel confident about administering medications independently.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. ENs should administer medications independently as part of their role.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Administering medications independently is stressful for ENs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. The quality of care for the patient would improve if ENs were independently administering medications.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. ENs are generally supported by other ENs when they give medications independently.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. ENs are generally supported by RNs when they give medications independently.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. Expanding the scope of practice by allowing ENs to administer medications independently as part of their role is a positive step.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please completely fill in the appropriate circle that best describes your response to each question.	Strongly Agree	Mildly Agree	Neither Agree Nor Disagree	Mildly Disagree	Strongly Disagree
15. Staff Development Nurses support ENs when they do the medication administration programme.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. Fear about drug calculations is a barrier to ENs commencing a medication administration programme.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. Fear about drug calculations prevents me from commencing a medication administration programme.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. My work place would support me if I made any medication errors.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19. I don't have enough time due to other commitments to complete a medication administration programme.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20. I feel that I have/had a choice about whether or not to complete a medication administration programme.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21. I feel enthusiastic about completing a medication administration programme.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22. Administering medications independently would/does allow me to deliver holistic care to the patient.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

PART B: These questions ask you about demographic information.

23. Where are you employed?

Metropolitan area ☐

Rural/Regional/Remote area ☐

24. What are your Enrolled Nurse Qualifications?

Hospital Based Training ☐

Associate Diploma ☐

Certificate IV ☐

25. Where did you complete your training?

Western Australia ☐

Other ☐ (please state location) _____

26. Are you planning to enrol in a course to convert from an Enrolled Nurse to Registered Nurse?

Already enrolled ☐

Within the next 12 months ☐

Sometime in the future ☐

Not sure ☐

Never ☐

27. What is your age? _____ years

28. For how many years have you have been registered as an Enrolled Nurse?

29. What is your gender?

Male ☐

Female ☐

30. What type of nursing speciality are you employed in?

Aged Care Services ☐ Surgical Services ☐

Medical Services ☐ Mental Health Services ☐

Other ☐ Please state _____

31. How many years have you been employed in this type of nursing speciality? _____

32. What is the name of the organisation that you work for?

33. How many years have you been employed at this workplace? _____

Please write any other comments about Enrolled Nurse medication administration in the space provided.

Your contribution to this survey is very greatly appreciated

If you have any queries about this survey please contact Donna Sayers at the Centre for Nursing Research on (08) 9346 2019.

APPENDIX 3

Cover Letter For Face And Content Validity Appraisal

FACE AND CONTENT VALIDITY APPRAISAL

Enrolled Nurses' Attitudes, Intentions and Behaviour Related to Independent Medication Administration

Dear Colleague,

Thank you for agreeing to review the attached questionnaire for a research project exploring Enrolled Nurses' attitudes, intentions and behaviour in relation to independent medication administration. Can you please rate the relevance to the research topic of each item in the questionnaire using the following score guide.

1 = Question not relevant

2 = Unable to assess question relevance without major revision

3 = Question relevant but needs minor alteration

4 = Question very relevant

If you think that there are any items that are relevant to the research topic but not covered in the questionnaire please write in the space provided at the end of this review form. On the questionnaire, please make any changes that you believe are necessary to improve the clarity or presentation of the questionnaire. Please return this appraisal form and the questionnaire to me via the internal mail.

Thank you for your assistance with this research project.

Sincerely,

Donna Sayers.

Question Number	Question not relevant	Unable to assess question relevance without major revision	Question relevant but needs minor alteration	Question very relevant
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				

Question Number	Question not relevant	Unable to assess question relevance without major revision	Question relevant but needs minor alteration	Question very relevant
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
31				
32				
33				

Items that should be added to the questionnaire

APPENDIX D

Cover Letter For Test Retest Reliability

Dear Colleague,

You are one of 30 Enrolled Nurses at Osborne Park Hospital who has been randomly selected from the ward roster to participate in assessing the reliability of this questionnaire.

Project Title:

Enrolled Nurses' attitudes, intentions and behaviour related to independent medication administration.

Introduction:

My name is Donna Sayers and I previously worked as an Enrolled Nurse for over twenty years prior to commencing my Bachelor of Nursing at Edith Cowan University. I'm currently studying for the award of Bachelor of Nursing (Honours) and I require your help to complete a research study. My supervisors for this research are Dr. Sue Nikoletti of Edith Cowan University and Helen Myers Clinical Nurse Consultant, in The Centre for Nursing Research at Sir Charles Gairdner Hospital.

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What are the Possible Benefits of Taking Part in This Research?

Independent medication administration is a change in the scope of practice for the Enrolled Nurse that eventually will be introduced nationally. This is the first survey of its kind in Western Australia giving you the opportunity to voice your opinion on an issue that is likely to have an impact on the role of all Enrolled Nurses.

What is required of you?

This survey should take about ten minutes of your time to complete. All you have to do is complete the questionnaire and return it in the internal mail to the researcher. A second questionnaire will be distributed one week after completion of the first questionnaire.

If you do not want to participate?

If you do not wish to participate in the study, extra names will be drawn from the list until the required number of Enrolled Nurses is reached. Participation is voluntary and refusal to participate will involve no penalty or loss. If you do not want to participate can you please contact the researcher on extension 8345 to be withdrawn and your ID number will be re allocated to another staff member.

Will My Taking Part in this Study be Kept Confidential?

To maintain confidentiality all questionnaires collected will be locked away in a secure place for a period of no less than five years and then destroyed by shredding. The Acting Co-director Mr Graham Boardley has given verbal approval for this requirement of my research to be carried out at Osborne Park Hospital. The Edith Cowan University Faculty Ethics Committee has approved the research proposal.

If You Have Any Questions About the Research

Further details regarding this research study are available from Donna Sayers on extension 8344 or 9343 1675. If you have any concerns and wish to speak to an independent person you may contact Associate Professor Kate White, Head of School, School of Nursing and Public Health, Edith Cowan University on 9273 8024. If you wish to comment on any question or qualify your answers please use the space provided on the back cover.

Please return completed questionnaires via internal mail to Donna Sayers, Wing One, The Lodge.

Thank you for your assistance with this research project.

Sincerely,

Donna Sayers.

APPENDIX E

Copy Of Letter To Union Delegates

ENROLLED NURSES

CORRESPONDENCE TO P.O. BOX 414 SUBIACO 6904

61 Thomas Street
Subiaco WA 6008
Ph: (08) 9388 5400
Fax: (08) 9382 3986
Country Callers:
1800 199 890
email: lhmuwa@lhmu.org.au
website: www.lhmu.org.au
ABN: 82 525 323 080

ASSOCIATION

25 October 2004

Dear Delegates,

RE: QUESTIONNAIRE ABOUT INDEPENDENT MEDICATION
ADMINISTRATION BY ENROLLED NURSES.

The LHMU, in conjunction with Donna Sayers a former Enrolled Nurse and active member of the union, has undertaken this project to obtain valuable information from our Enrolled Nurse members regarding your opinions and experiences about medication administration.

Last week all union members were sent out the questionnaire and I am now asking you as Delegates to please remind all of the Enrolled Nurses at your workplace to complete and return the survey.

As conveyed in the questionnaire all information will remain anonymous and should you or any of your colleagues have any further questions I urge them to contact Donna Sayers on 9346 2019 or myself at the union office on 9388 5400.

Yours truly,

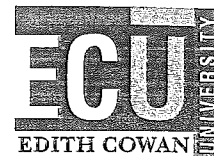


Merissa Hardman
JOINT SECRETARY
THE ENROLLED NURSES ASSOCIATION

APPENDIX F

Copy of Ethical Clearance

15 September 2004



Donna SAYERS
PO Box 63
HERNE HILL WA 6056

Student # 3013822

JOONDALUP CAMPUS

100 Joondalup Drive,
Joondalup
Western Australia 6027
Telephone 134 328
Facsimile (08) 9300 1257

ABN 54 361 485 361

Dear Donna,

Course: **Bachelor of Nursing – Honours**

Thesis Title: **Enrolled nurses' attitudes – intentions and behavior related to independent medication administration**

Date Proposal Approved: **20 August 2004**

Date Ethics Approved: **14 September 2004**

Please be advised that your application for Ethics Clearance has been approved by the Faculty of Computing, Health and Science Ethics Sub-Committee for the conduct of Human Research.

This approval is granted **SUBJECT TO** the procedure/s as outlined in your application and the conditions, if any, as outlined by the Committee in the attached memorandum. **Please note that the collection of data for your research must adhere to these conditions.**

As you received approval for your Honours proposal on the 20th August 2004 **you are now authorised to commence data collection.**

If you have any queries or need assistance during the course of your study please contact the Administrative Officer - Higher Degrees on **6304 2593**.

Further guidance and information can be obtained from the Faculty of Computing, Health and Science *Honours and Masters by Coursework Handbook* that is available from the following web address: <http://www.chs.ecu.edu.au/org/rhd/admin.html#higher>

I wish you all the best in your studies.

Regards,

Professor Linda Kristjanson
Associate Dean (Research & Higher Degrees)
Faculty of Computing, Health and Science
Phone: 08 9273 8617
Fax: 08 9273 8882
Email: l.kristjanson@ecu.edu.au

cc. *Student File*
Ethics File
University Ethics Committee
Supervisor – Sue Nikoletti
Postgraduate Coordinator – Sue Nikoletti

EDITH COWAN UNIVERSITY **MEMO**
FACULTY OF COMPUTING, HEALTH AND SCIENCE

Human Ethics Subcommittee

TO: Rebecca Treloar-Cook, Admin. Officer, Higher Degrees
FROM: Angus Stewart, Chair, Faculty Human Ethics Subcommittee
SUBJECT: Human Ethics Clearance Application/s
DATE: 14th September, 2004

Rebecca,

The following human ethics application has been approved:

Donna Sayers

ENROLLED NURSES' ATTITUDES,
INTENTIONS AND BEHAVIOUR RELATED
TO INDEPENDENT MEDICATION
ADMINISTRATION.

Subject to the following condition(s) Nil.

Category 1 – Additional material was requested and sent.

Angus Stewart.
Chair,
Faculty CHS Human Ethics Subcommittee