September - November 2009
Volume 27 Number 1

AJAN

australian journal of advanced nursing

An international peer reviewed journal of nursing research and practice

27:1

IN THIS ISSUE

RESEARCH PAPERS

SCHOLARLY PAPERS

THE AUSTRALIAN JOURNAL OF ADVANCED NURSING

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email: ajan@anf.org.au
http://www.ajan.com.au

ISSN 1447-4328

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The AJAN is indexed in the CINAHL (Cumulative Index to Nursing and Allied Health Literature) Database, Current Contents, International Nursing Index, UnCover, University Microfilms, British Nursing Index, Medline, Australasian Medical Index and TOC Premier.

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AJAN
australian journal of advanced nursing

September - November 2009
Volume 27 Number 1

CONTENTS

RESEARCH PAPERS

SCHOLARLY PAPERS

AUSTRALIAN JOURNAL OF ADVANCED NURSING REVIEW PANEL: AUSTRALIA

Jenny Abbey, RN, PhD, Queensland University of Technology, Kelvin Grove, Queensland

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Reflections on nursing

EDITORIAL

Lee Thomas

AJAN Editor, and
Assistant Federal Secretary
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I can't quite remember at what point in my life I decided I wanted to be a nurse but I do remember that it was my second choice.

Throughout my childhood I had wanted to be a hairdresser, my mother worked hard to discourage me from this career, protesting that I would spend too much time on my feet! Funnily enough I do remember that when I finally announced that I was considering nursing there were no similar protests about being on my feet too much, and how today that makes me smile.

My parents were working class people, today we would describe them as aspirational. They wanted me to achieve more than they and clearly in my mother's mind hairdressing just wasn't going to cut it.

I do recall in year 10 we needed to decide what our top three priorities for work experience were. I only put one on the paper, hairdressing! When the teacher collected the form she looked at my choice, looked at me, handed back the paper and said try again. I learned many years later that they were all in cahoots together but never the less I made three choices nursing, teaching and yes hairdressing!

My work experience was chosen and I by some miracle scored a week at the Children's Hospital in Adelaide. I loved it.

It was much easier in year 11 when I was asked for my work experience choice, I only put nursing and as luck would have it managed to again get my choice. I spent another exciting and interesting week in a private nursing home very close to our home. It became my first experience at paid employment and I worked happily there for three years while I waited for a vacancy to become available to commence my registered nurse education.

I was educated in the hospital system during a time when there were more nurses than were needed and the competition for jobs post registration was fierce. I was lucky; from the first moment I walked into the hospital I knew I was in the right place. Nothing phased me, well almost nothing.

It was during our six week preliminary training block prior to being let loose on real patients that I joined the union. Back then there was none of this freedom of association nonsense. Unionism was never presented to us as an option, but a necessary part of working life. Something that today I believe even more than then. My aspirational parents of course had a different view. Unlike many of my union colleagues, whose parents were trade union families, mine was not. In fact one of my most vivid memories is my father coming home one night cursing loudly about b****y unions. Today when I remind him about this he smiles and says quietly it's done you no harm! And of course he is right.

I was educated in a time when laparoscopic surgery was just a dream, when transplantation of organs was not as commonplace and the cure rate for cancers was much lower than it is today.

Life was a bit simpler back then but today the advances in medical science are amazing.

I went on to complete my midwifery education and work with tiny pre term infants.

It was during the 1980s to 90s that I became more involved in the union. I marched in South Australia with thousands of other nurses to protest the lack of a nursing career structure.

That was it! I was hooked. I was part of changing the history of nursing in South Australia and I learned about the power of the collective. It was the beginning of my second career and in 1997 I started working in the union office, went on to be elected the state secretary where I stayed for close to ten years and then when it was time for me to move on I was fortunate enough to have the opportunity to continue working for the union and the professions that I love.

I have often said if you're going to be union leader then make sure it's for the 'nurses', the most trusted and respected profession in Australia for the last 15 consecutive years.

I have loved every minute of my many years as a paid union official, I suspect one day it will come to an end, but that's ok too because I am now preparing for my third career.

Not content with being a wife, mother and grandmother and slipping quietly into the background, at the beginning of 2009 I started a law degree! My aspirational parents are delighted, my husband shakes his head a lot and I even think sometimes I am a bit crazy, but hey with Rudd wanting us all to work until 67, I've got to have something else to do. And let's face it if I have as much fun doing that as I have had as a nurse and union leader it will be another fantastic career move.

Australian practice nurse immunisation scholarships: an evaluation study

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KEY WORDS

Practice nursing, immunisation, scholarships, evaluation research, continuing education

ABSTRACT

Objective

This paper reports on an evaluation of an Australian Government program to improve immunisation services in primary care settings through the provision of scholarships to support access to education for Practice Nurses (PNs).

Design

The study used a constructivist evaluation methodology to evaluate satisfaction with and effectiveness of a scholarship program to support PNs access to immunisation education and changing nursing immunisation practice.

Setting

Australian Divisions of General Practice and General Practices

Subjects

Twenty seven PNs who had received immunisation scholarships completed an online survey. Sixty four Division of General Practice (DGP) staff, representing state and territory, urban and rural regions of Australia, participated in telephone focus group interviews.

Results

The scholarships and scholarship processes were viewed positively by PNs. The access to scholarship information, the selection process and the time the scholarship allowed to complete an immunisation course were rated highly. Online learning was seen as an effective means to undertake immunisation education particularly for PNs in the rural sector. Overall, there was overwhelming support for the continuation of scholarships to assist PNs access to education opportunities to improve immunisation services. These opportunities were reported to improve their knowledge and skills which lead to changes in immunisation practice and the quality of care they provided to patients. They also helped overcome geographical and professional isolation.

Conclusions

As PNs emerge as key players in the improvement of immunisation services in Australia, the provision of government assistance for continuing education is an important strategy to produce this appropriately skilled workforce.

INTRODUCTION

Immunisation is acknowledged worldwide as an effective public health measure to reduce the incidence and severity of vaccine-preventable diseases (VPD's) (Smailbegovic et al 2003). Immunisation coverage rates, however, continue to fall short of World Health Organisation recommendations, and short of targets determined by national governments (Petousis-Harris et al 2002; Gore et al 1999). Australia has been successful in eliminating and/or controlling some of the common vaccine-preventable diseases (Department of Health and Ageing 2006a). This success is contributed to the national Immunise Australia Program established in 1997 which aims to increase national childhood immunisation rates so as to reduce the incidence of vaccine preventable diseases in the Australian community.

In Australia, general practices provide 71% of all childhood immunisations and are the major providers of immunisation services. Other major providers are councils (17.1%) and community health centres (8%) (Medicare Australia 2008a). PNs working in general practice, many of whom are key immunisation providers, are in a strategic position to increase vaccination coverage rates and to do this they need support and assistance to undertake continuing education.

Practice Nurses and immunisation

Globally, nurses play a fundamental role in immunisation practice, whether in mass community immunisation programs, workplace or school-based programs, or maternal and child health centre-based programs. All immunisation programs must aim to safely and effectively immunise 100% of a country's population, however, to control vaccine preventable diseases, 'a rate of 95% immunisation coverage is necessary' (Lawrence et al 2004 p 568).

In Australia, the PN role is undergoing significant growth in contributing to the provision of health care in general practice (Britt et al 2008). It is evolving from a task-orientated role assisting general practitioners to, reportedly, a professional role where they make informed nursing decisions and take responsibility for their own competence (Keleher et al 2007).

At the end of 2005, nearly 5,000 PNs were employed in Australia (Sweet 2006) and this has continued to grow by 59% over the past two years. Having nurses practising in primary care settings is now recognised as an indispensable and increasingly critical part of keeping Australia healthy (APNA 2008). In building their capacity to better respond to population health needs, PNs have diverse responsibilities and roles, encompassing 'immunisation, health assessments, care plans, health promotion, triaging, wound management, chronic disease management and preparing for practice accreditation' (Sweet 2006 p12). This is particularly so in rural and remote regions where the rapidly expanding role has been labelled a 'quiet revolution' (Sweet 2006).

The introduction of Medicare Benefit Schedule (MBS) item numbers in Australia in 2004 played an important part in the expansion of practice nursing. These items allow General Practitioners (GPs) to claim for specific activities such as immunisation, performed by a PN under general practitioner direction (Britt et al 2008). In 2006 there were 3.4 million claims against the PN Medicare item number (Keleher et al 2007 p108) with approximately 58% of these claims for immunisation services (Medicare Australia 2008b).

Immunise Australia—an Australian Government initiative

The Immunise Australia Program and the General Practice Immunisation Incentives Scheme, were designed to provide financial incentives to encourage general practitioners to improve immunisation rates for children under the age of seven (Department of Health and Ageing 2006a). Success was highlighted in May 2003, when the target of 'at least 90% of practices to achieve 90% proportions of full immunisation' was achieved (Medicare Australia 2007).

The expansion of the PNs' role and the ageing PN workforce raised questions about education to support nurses in this role (Keleher et al 2007). In response, the Department of Health and Ageing funded scholarships through the Nursing in General Practice Training and Support Initiative: 2005-09. The scholarships were to equip PNs with the knowledge and skills to meet workforce needs, including support to undertake immunisation education. Benefits of the scholarships included reimbursement of course costs and fees and financial assistance meeting course requirements such as travel to attend workshops (Department of Health and Ageing 2006b).

AIMS

This study was a component of a larger evaluation examining the effectiveness of wound management and immunisation education for PNs and was part of the Nursing in General Practice Training and Support Initiative: 2005-09.

The aims were to evaluate:

- satisfaction with and effectiveness of scholarships to support PNs' access to immunisation education
- effectiveness of scholarships to support changing nursing immunisation practice.

METHOD/METHODOLOGY

The study design was constructivist evaluation methodology (Guba and Lincoln 1989), incorporating a mixed method approach primarily qualitative with a descriptive quantitative component. Constructivist evaluation is a democratic framework that provides for the elicitation of stakeholder 'claims, concerns, and issues' and the establishment of knowledge as to how pervasive these are by identifying levels of consensus among the target group (Guba and Lincoln 2001).

This mixed method approach involving a combination of online surveys and telephone focus groups was used to add rigour and credibility to the study. It also provided data from multiple sources offering 'thick descriptions' (Johnstone 2004) as well as descriptive statistical accounts about the activities, features and outcomes of the PN scholarships and immunisation education.

Participants

Using a purposeful sampling technique, an open invitation was sent to all recipients of the Australian Practice Nurse Association (APNA) Practice Nurse Scholarship Scheme. Invitations were sent through the PN and general practice communication networks including government and non-government communication networks such as e-News and the Friday Fax, published by the Royal Australian College of General Practitioners. Invitations were also posted on the APNA website. From 136 successful applicants for immunisation scholarships, 27 PNs responded to the online survey.

For the telephone focus groups, an invitation to participate was extended to DGP staff in practice nurse support, and continuing education coordination positions. There were 64 focus group participants from the 115 Divisions of General Practice in Australia with distribution by state and territory, urban and rural representation.

Data collection

There were two phases to data collection. The first took place through an online survey of PNs; the second through telephone focus groups with DGP staff.

Online survey of practice nurses

The online survey included a combination of a four-point Likert scale, and closed and open-ended questions. PNs rated their satisfaction with, and effectiveness of, the scholarships they received to support their access to immunisation education. They rated the logistical elements of the scholarship applications, which included access to scholarship information, quality of the application material, selection process, and amount of time provided by the scholarship to complete an immunisation course. The survey was made available on the APNA website to all respondents (N=27) with the opportunity to complete the survey in hard copy and return by post, if desired.

Telephone focus groups

The researchers conducted eight telephone focus groups, each consisting of eight participants (N=64). Questions included:

- effectiveness of the provision of scholarships in supporting PNs' access to education (including the scholarship advertising and application process)
- suitability of scholarships (covering course requirements, accreditation, completion rates, timing, course information, and accessibility)
- effectiveness of immunisation courses funded by the scholarships in changing immunisation practice.

Ethical considerations

Approval from the University of South Australia Ethics Committee was granted prior to conducting the study. Information about the study and a letter of invitation to participate in the online surveys and focus group interviews were posted on the APNA website. Information sheets stated that participation was voluntary with potential participants having the opportunity to speak to any or all members of the research team to discuss or gain additional information regarding the study before they agreed to participate. Participants were informed that they could withdraw from the focus groups at any stage without penalty. Consent to participate was indicated by completion and return of the survey or voluntary attendance at the focus group interviews. Privacy was respected at all times during the advertisement, recruitment, conduct and reporting stages of the study.

Data analysis

Data analysis was guided by the project aims. Quantitative analysis involved preparation of descriptive statistics to present frequencies of responses to all survey items. Qualitative data from focus groups and open-ended survey questions were read as individual data sets at the time they were generated, to identify emerging issues and themes related to the research aims.

Rigour

Validity and credibility were established by use of triangulation of method (survey and focus group interviews); triangulation of sources within the same method (different groups and individual participants within the survey group, and within focus groups); and analyst triangulation (review of findings by multiple analysts).

FINDINGS

The total sample for this component of the study comprised 64 DGP staff and 27 PNs. The PNs who participated in this study all received a scholarship to support immunisation education. The findings presented here report the outcomes of the study as they relate to the study's aims of satisfaction and effectiveness.

Satisfaction with and effectiveness of scholarships

The scholarships and the scholarship processes were viewed very positively by PNs as indicated by Table 1.

Table 1: Practice Nurses levels of satisfaction with the immunisation scholarship processes (N=27)

Item	Very satisfied (%)	Satisfied (%)	Not very satisfied (%)	Not satisfied at all (%)
Access to information about the scholarships	55.56	40.74	3.70	0
Scholarship selection process	70.37	25.93	3.70	0
Amount of time provided by the scholarship to complete a course	51.86	44.44	3.70	0
Scholarships as an effective way to support practice nurses access to education	85.18	14.82	0	0

They rated highly the logistical aspects associated with access to scholarship information, the selection process and amount of time the scholarship allowed them to complete an immunisation course. Additionally, scholarships were seen as an effective way to support nurses' access to further education, especially for those working in rural and remote locations. Four percent of respondents expressed concerns about operational matters. The application process and forms were lengthy, complicated and not easily accessible. The APNA website for application was difficult to navigate and PNs were asking the Divisions of General Practice to provide hard copies of the application form. There were problems with the timing as 4% of participants found that scholarships ended prior to the completion of some courses. The breadth of scholarship advertising was highlighted as an issue for 18% of participants and there was some confusion about who was eligible to apply for a scholarship and how it could be used.

PNs' satisfaction with the effectiveness of scholarships related to the quality of the immunisation course, particularly, the modes of course delivery, course content and opportunities for regular continued immunisation updates. Most participants highlighted the value of choice and multiple modes of delivery of immunisation courses. Online learning was regarded as an effective means to access and complete immunisation education. Eighty six percent of PN respondents indicated online courses provided an opportunity to extend their knowledge and skills in immunisation, while also enhancing their information literacy skills. All these participants indicated they would undertake another course in this mode. PNs in the rural sector, requested more funding for non face-to-face learning opportunities to assist in overcoming the constraints of geographical isolation as illustrated in the following response:

I live in the country and this online course made it possible to do the course from home without having to travel too much. [It] helped to broaden my computer and internet skills of finding information [and] was great for interaction with other participants.

The quality of the various immunisation courses was an issue for the DGP staff. All these participants, highlighted confusion about the consistency and application of various service delivery and course accreditation regulatory requirements at national, state and territory levels. One participant captured this succinctly, stating that '*If [the course is] not accredited nurses will not touch it*'. With the exception of the participant who thought nurses should have optional levels of practice as *'…not all nurses want an independent level of practice so maybe it is OK to have non accredited course'*, the majority of participants were aware that immunisation best practice was research and policy driven.

Division staff described the need for sustainable expertise and development of the practice nurse role suggesting that continuing education opportunities should be provided as part of an award or university course. This approach had the potential to expand the role of PNs, providing them with the knowledge and skills to take the initiative and make informed, evidence-based decisions, rather than continue the traditional, delegated-task approach that prevails in Australian general practices (Halcomb et al 2006).

Scholarship supporting change to nursing immunisation practice

PNs recognised that undertaking a scholarship supported immunisation course lead to changes in immunisation practice, as evidenced by the quality of care they provided to patients. The following statements are examples of ways their practice changed:

- *'was able to make more independent decisions',*
- *'can now provide better information to clients',*
- *'am able to demonstrate improved assessment skills',*
- *'have improved documentation and evaluation skills'.*

For one PN, support to undertake immunisation education had identifiable results that were *'… very effective, very important skills that need to be regularly updated with evidence-based research to facilitate up-to-date clinical practice'.*

Improvements in immunisation practice had a flow-on effect, where expertise developed by those who had completed immunisation courses was passed on to others:

I am the first nurse in our organisation to receive (or apply for) a scholarship. However, I believe the information I will now be able to pass on to all our health services will ensure best practice. This should apply to all nurses who have access to these Scholarships.

Support received from General Practice staff including GPs also influenced practice change. While 70% of PNs acknowledged existing support from general practice staff, 30% of respondents identified tensions between the demands of their private sector employment and meeting their continuing education needs. They described poor recognition of their value to primary care provision at the local level suggesting the following reasons; low levels of financial reimbursement, limited employment of PNs in ratio to the numbers of GPs lack of GP awareness or support for continuing education needs of PNs and medical dominance. One participant described *'a lack of voice in a lot of practices of practice nurses'* with another participant suggesting it was necessary to *'make waves'* to get appropriate education. One participant suggested it was *"ok to have standards but not if they were not supported by the GPs - [as this was] a waste of time"*. Others suggested the need for better information and assistance for general practitioners to help them assist PNs meet their continuing education needs.

DISCUSSION

Scholarships were highly rated as a satisfying and effective means of support for PNs to access immunisation education (table 1) because they provided a previously unavailable opportunity. This helped to improve their knowledge and skills about immunisation service delivery and computer use, change things they could do for patients and the way they worked with GPs and thus provide more accessible and better services.

Geographical isolation has long been recognised as a significant factor shaping the working lives of health professionals and health care delivery in Australia (Gibson and Heartfield 2005). Participants in this study also described how the scholarships helped PNs in country areas access education, although issues of computer access, lack of technological skills and limited broadband access were challenges for these PNs. These findings were consistent with other studies that found lack of computer competence (Harris et al 2003; Mamary and Charles 2000) and technical difficulties (Bennett et al 2004) were barriers to the online delivery of continuing education programs, and suggest the need to up-skill PNs in the use of computer technology, particularly since for many this was the first time they had undertaken an online course.

Both PNs and DGP staff recognised the importance of immunisation education opportunities in improving knowledge and skill acquisition and the quality of services they provide to the community. Levett-Jones (2005 p229) found investing in continuing education for nurses not only resulted in 'enhanced knowledge and skills' but also found a 'positive correlation between professional development and factors such as staff satisfaction, staff retention and quality patient care'.

In considering the broader issues of role development, it is interesting to return to the recently released 2006-2007 data about general practice claims and PN activity. Britt et al (2008) report that the majority (91.9%) of reported PN activity was procedural in nature with over a quarter (28.1%) of all PN activities involving such things as giving injections, doing dressings or incisions, drainage or aspirations. Only 9% of PN activities met the Medicare clinical treatments category, with examples including giving advice, education or counselling. While this data implies an expansion in PN activities, it is unclear whether expansion in procedural activities constitutes role development.

The scope of nursing and midwifery practice is internationally recognised as not limited to specific tasks, functions or responsibilities (International Council of Nurses 2004) and includes 'direct care giving and evaluation of its impact, advocating for patients and for health, supervising and delegating to others, leading, managing, teaching, undertaking research and developing health policy for health care systems' (International Council of Nurses 2004 p1). Immunisation is an area of nursing practice amenable to all of these roles and requires ongoing continuing education opportunities. There is the possibility of growth in this more broadly conceptualised role for PNs in Australia. In reports that of 3.66 million claims for practice nurses in 2006-2007, a further 1.3 million services provided and claimed for as PN activities were conducted independently of any general practitioner - patient consultations (Britt et al 2008). While clearly not denying the benefits of interprofessional and collaborative practice, perhaps such details signal an emerging professional role for PNs.

Limitations of the study

The study was limited to evaluating satisfaction and effectiveness of a scholarship program from the perspectives of PNs and Divisions of General Practice staff. General practitioners and practice managers, though invited to participate, did not take up the offer: their input would have contributed other dimensions to understanding changes to immunisation practice. Online surveys and telephone focus groups, though effective in bringing together a disparate population and generating satisfaction ratings and descriptions, inhibited the ability to gather detailed data about immunisation practice changes and in particular, changes in the behaviour of scholarship recipients. According to Kirkpatrick (1994), evaluating practice behaviour changes is difficult and requires the use of observational data collection strategies conducted over a sustainable period of time. If the necessary time and scope to gather observational data had been available for this study, insight into practice behaviour changes would have been strengthened. Emphasis on data collection by surveys has also limited the detail available about some of issues raised by PNs.

CONCLUSION

In Australia, GPs have traditionally been the key health providers of immunisation services. Growing numbers of PNs employed in general practice, recent government initiatives to provide continuing education support and Medicare rebates provide a context for PNs to play an increasingly key role in improving immunisation coverage. The majority of practice nurses in this study were satisfied with the Scholarship program. Both PNs and DGP staff acknowledged the positive impact the educational opportunities offered through Scholarships, had on the quality of services provided to the community. Apart from some of the logistical aspects associated with the Scholarship process, online learning was regarded as an effective mode of delivery. However, issues of computer access, lack of PNs technical skills and limited broadband access were major inhibitors. This study highlights the achievements and areas of improvements for the Australian Government scholarships offered through the Australian Practice Nurses Association. The success of this program will only be realised as more PNs are awarded Scholarships to gain access to continuing education and further studies undertaken to determine the impact Scholarships have on practice change and improving primary care through general practice.

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Cardiac arrest resuscitation policy and practice: a survey of Western Australian hospitals

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Acknowledgements

This research is supported by the Olive Anstey Postgraduate Nursing Scholarship funded by Sir Charles Gairdner Hospital. Funding for the cost of printing and postage of the survey was provided by the School of Population Health at the University of Western Australia. The costs of administering the 2001 survey was financed by the Laerdal Foundation for Acute Medicine (Norway) which played no role in the design, conduct or analysis of the study or in preparation of the manuscript.

Conflict of interest

None declared. This research is part of a broader PhD study examining the epidemiology of in-hospital cardiac arrest.

KEY WORDS

advisory external defibrillation (AED), cardiac arrest, cardiopulmonary resuscitation (CPR), nurse, survey

ABSTRACT

Objective
To determine if cardiopulmonary resuscitation (CPR) policy and practice in Western Australian (WA) hospitals changed since the release of an operational directive from the WA Department of Health.

Design
Cross sectional postal survey conducted in 2008 compared to the results of the 2001 survey.

Setting
Western Australian public hospitals containing ten or more beds.

Subjects
66 WA hospitals in 2001; 59 WA hospitals in 2008.

Main outcome measures
Characteristics of defibrillators; CPR and defibrillation training and assessment; who was permitted to undertake defibrillation; type of cardiac arrest management team, whether data was routinely collected on cardiac arrests and outcomes and any other issues related to resuscitation policy and practice.

Results
There was a 15% increase in the number of hospitals with AEDs (15% difference; 95% CI 10%, 29%; p= 0.04) and an increase in proportion of hospitals that allowed nurses to defibrillate from 74% to 98% (24% difference; 95% CI 14%, 34%; p<0.001). There was an increase in the uptake of ARC guidelines (15% difference; 95% CI 5%, 25%; p<0.01).

Conclusions
Since the release of the operational directive following the 2001 survey more hospitals have purchased AEDs and there has been an increase in the proportion of hospitals ‘allowing’ nurses to defibrillate. However, given the overwhelming evidence that time to defibrillation is the major determinant of likelihood of survival in cardiac arrest, it is indefensible that that not all hospitals can provide first responder defibrillation 24 hours per day, seven days per week.

INTRODUCTION

Despite cardiopulmonary resuscitation (CPR) having been first described in the 1960s (Kouwenhoven et al 1960), the proportion of patients surviving a cardiac arrest remains poor; namely 7% to 11% in out-of-hospital arrests (Holler 2007; Finn 2001) and 17% of in-hospital arrests (Peberdy et al 2003). Nonetheless we do know the likelihood of survival is influenced by; prompt initiation of CPR, the quality of CPR and early defibrillation for ventricular fibrillation (VF) or ventricular tachycardia (VT) arrests (Deakin and Nolan 2005; Jacobs and Nadkarni 2004; Valenzuela et al 1997). Advances in technology, such as advisory external defibrillators (AEDs), have sought to minimise the time to defibrillation by reducing the training requirement for rescuers (Handley et al 2005).

Advisory external defibrillators are capable of analysing the underlying cardiac rhythm, advise that defibrillation is indicated and deliver such shock. These devices are of particular advantage as they do not rely on the rescuer having rhythm recognition skills in order to provide defibrillation. Accordingly, health professionals who infrequently encounter cardiac arrest are now in a position to provide defibrillation. For these reasons, the provision of AED is recommended by the Australian Resuscitation Council (ARC) as part of basic life support (Australian Resuscitation Council 2006a).

In hospital cardiac arrests, nurses are ideally placed to provide early CPR and defibrillation provided they have access to, are trained in and are permitted to use the equipment (Handley et al 2005). A survey conducted in 2001 of Australian hospital resuscitation policy and practice demonstrated that 97% of hospitals had a defibrillator on site; however, 16% of nurses were not permitted to undertake defibrillation and 9% were not permitted to use an AED (Finn and Jacobs 2003) . In response to these findings the Department of Health in Western Australia (WA DoH) issued an operational directive requiring that all nurses “must be trained in CPR and defibrillation” and “have access to a defibrillator 24 hours per day” (Government of Western Australia 2003 pp1-2).

The aim of this study was to determine if CPR policy and practice in Western Australian hospitals had changed since the 2001 survey and release of the operational directive and in particular if nurses were now permitted to use AEDs.

METHODS

A postal survey of all public hospitals with ten or more beds in Western Australia was undertaken in 2008. Private hospitals were not included as the operational directive affected public hospitals only. The survey instrument was based on that previously reported (Finn and Jacobs 2003). The instrument consisted of 16 items aimed at identifying the characteristics of the defibrillators, basic life support assessment, who was permitted to undertake defibrillation, composition of the cardiac arrest team, data collection and outcomes on cardiac arrests and any other issues related to resuscitation policy and practice. Respondents were required to answer ‘tick box’ or ‘free response’ questions. The responses from both surveys were collated and categorised according to the identified themes. The survey was piloted on resuscitation coordinators employed at three teaching hospitals in Perth and modified for face validity.

The Australian Hospitals Directory (The Australian Hospitals Directory 2007-2008) was used to identify hospitals meeting the inclusion criteria. The questionnaire was sent to the ‘Director of Nursing’ or ‘Health Service Manager’ and included a reply paid envelope. If no response was received within one month of the closing date a follow up survey was sent.

The Australian Bureau of Statistics ‘Accessibility/Remoteness Index of Australia’ (ARIA+) was used to determine levels of remoteness of the hospital. This index categorises locations into either Major Cities of Australia, Inner Regional Australia, Outer Regional Australia, Remote Australia and Very Remote Australia (National Key Centre for Social Applications of Geographic Information Systems 2003).

The study was approved by the Human Research and Ethics Committee at the University of Western Australia.

Statistical analysis

Results are presented as proportions of the total number of hospitals that responded to each survey and the Pearson's chi square analysis was used to determine differences between proportions (with p values and 95% confidence intervals reported) . The Fisher's exact test was used for examining differences in categorical variables that had cell counts with five or fewer. Statistical significance was accepted at $p<0.05$. SPSS version 15.0 was used for the analysis (SPSS for Windows, Version 15.0.1.1 2006). Respondents were asked to comment on resuscitation issues. The comments from both surveys were collated and categorised according to the themes that became evident during the analysis.

FINDINGS

Responses were received from 59 (80%) of the 74 hospitals invited to participate in the 2008 survey, compared to 66 (90%) of the 73 hospitals invited in 2001. This was not a statistically significant difference. In 2008, the size of hospitals ranged from 10 to 833 beds (median beds 26) and two thirds of hospitals had less than 50 beds (Table 1). For hospitals that did not respond to the 2008 survey, bed size ranged from 16 to 130 beds (median beds 29) and 80% had less than 50 beds.

Table 1: Characteristics of the WA hospitals responding to the 2001 and 2008 surveys

Characteristic		2001 survey (%)	2008 survey (%)	Difference	p value
Response rate		66/73 (90)	59/74 (80)	0.1 (95% CI; 0.07, 0.27)	0.07
Bed numbers (median; IQR)		47; 21 - 107	26; 18 - 83		
Locality	Major Cities	21 (32)	13 (22)		
	Inner Regional Australia	10 (15)	6 (10)		
	Outer Regional Australia	24 (36)	21 (36)		
	Remote Australia	9 (14)	10 (17)		
	Very Remote Australia	2 (3)	9 (15)	χ^2 7.22 (df 4)	0.13
	Total	66 (100)	59 (100)		

Most hospitals in 2008 (78%) were located in regional or remote areas which is slightly higher than that observed in the 2001 survey (Table 1). In 2008, over half (53%) of the hospitals that did not respond to the survey were located in regional areas. There was no significant difference in the distribution of remoteness categories among the 2001 and 2008 surveys.

All respondents to the 2008 survey indicated that a defibrillator was located on site compared to 97% in 2001, but this was not a statistically significant difference compared to the 2001 survey results. There was a difference in the proportion of hospitals with AED capability in 2008 (86%) compared to 71% in 2001 (15% difference; 95% CI 10%, 29%; p= 0.04) (Table 2). In 2008, registered nurses were permitted to operate AEDs at 98% of hospitals where these devices were available compared to 74% in 2001 (24% difference; 95% CI 14%, 34%; $p<0.001$).

All hospitals in both surveys indicated CPR training was provided for registered nurses. In 2008, further details about CPR training was sought that showed training was conducted every 12 months in 86% of hospitals. One hospital offered CPR training every three months whereas three hospitals (7%) indicated that nurses were not required to attend CPR training. The 2008 survey demonstrated that nurses were likely to undertake practical rather than written CPR assessments (93% versus 68% respectively) (Table 2). This was not measured in the 2001 survey.

Training in combined (AED and manual) defibrillation for nurses was undertaken in 95% of hospitals in 2008 and in 85% of hospitals in 2001; however, this was not a statistically significant difference. There was a marked improvement in the proportion of nurses required to undertake solely AED training in 2008 (92%) compared to 2001 (52%) (40% difference; 95% CI 26%, 54%; $p<0.001$) (Table 2).

A medical emergency team (MET) was available in (34%) of hospitals in 2008 whereas the remainder indicated their cardiac arrest team comprised of either staff on duty or staff on call. A similar proportion of MET systems operated in 2001 (38%). An additional question in 2008 that did not appear in the 2001 survey about the availability of staff trained in defibrillation, found that competent staff were available 24 hours a day 7 days a week in 85% of hospitals. All of the sites without the ability to provide 'round the clock' defibrillation in 2008 were located in regional or remote areas. Over half (56%) of these hospitals commented that they retained an 'on call' system that summoned a nurse and / or doctor from home if required. A further half of these hospitals also did not have AED capability.

In 2008, the current ARC guidelines were used in 98% of hospitals compared to 83% in 2001 (15% difference; 95% CI 5%, 25%; p<0.01). Routine data collection on cardiac arrest events and outcomes were collected in 56% of hospitals in 2008 and 41% of hospitals in 2001.

Half of the respondents provided comments to the 2008 survey which are presented in Table 3. Categories that emerged from both surveys included training and assessment, resuscitation policy, staffing levels and equipment issues. The proportion of comments about training and assessment and equipment were similar for both surveys. There were twice as many comments about staffing and resuscitation policy in 2001 compared to 2008. Themes that emerged from the 2001 survey solely were; ethical issues and training challenges associated with the infrequent nature of medical emergencies.

Table 2: Comparison of 2001 and 2008 survey results

Category	2001 survey 66 (%)	2008 survey 59 (%)	Difference in percentage (95% CI)	p value
Hospitals with defibrillators:				
Defibrillator of any description	64 (97)	59 (100)	3 (-1, 7)	0.28
Solely AED	35 (53)	14 (24)	29 (13, 45)	<0.001
Solely manual defibrillator	52 (79)	7 (12)	67 (54, 80)	<0.001
Combination defibrillator	15 (23)	40 (68)	45 (26, 64)	<0.001
AED capability using any type of defibrillator	47 (71)	51 (86)	15 (1, 29)	0.04
Hospitals that require nurses to complete CPR training and assessment:				
Training	66 (100)	58 (97)	3 (-2, 8)	0.47
Written test	not surveyed	40 (68)	na	na
Practical test	not surveyed	55 (93)	na	na
Hospitals that require nurses to train in defibrillation:				
Solely AED	34 (52)	54 (92)	40 (26, 54)	<0.001
Solely manual defibrillator	48 (73)	39 (66)	7 (-15, 29)	0.42
Combination defibrillator	56 (85)	56 (95)	10 (-1, 10)	0.07
Hospitals that permit nurses to defibrillate:				
AED	49 (74)	58 (98)	24 (14, 34)	<0.001
Manual defibrillator	44 (67)	43 (73)	6 (-10, 22)	0.45
Combination defibrillator	not surveyed	58 (98)	na	na
Hospitals with a MET system	25 (38)	20 (34)	4 (-13, 21)	0.64
Hospitals that collect resuscitation data	27 (41)	33 (56)	15 (-2, 32)	0.09
Hospitals that use current ARC guidelines	55 (83)	58 (98)	15 (5, 25)	<0.01

Table 3: Categories used and comments made on surveys

Training and assessment	**Total sites***
2001	14 (34%)
Lack of access to up-to-date training Confusion regarding AEDs Difficult to arrange training on site and maintain competencies RNs refusing to be trained in defibrillation	
2008	19 (32%)
Staff attendance poor unless mandatory; unsure of staff competency levels Lack of training resources Attempts to implement accredited ARC course as a standard for MET training hindered by limited availability of accredited instructors	
Resuscitation policy	
2001	16 (39%)
Difficulty establishing a ‘not for resuscitation’ policy Difficulty using current ARC policy / procedures Standard policies required for all hospitals We do not have policies	
2008	12 (20%)
Difficulty establishing a ‘not for resuscitation’ policy No particular department has responsibility for resuscitation policy, making changes difficult and time consuming	
Staffing	
2001	16 (39%)
Staff turnover high and large proportion of locum and agency staff Poor skill mix; limited availability staff competent in defibrillation No onsite doctors	
2008	12 (20%)
Difficulty obtaining funding for resuscitation officer Inadequate resources to release staff from clinical duties to attend training No staff development nurse to assess competencies Poor skill mix Do not always have a doctor onsite	
Equipment	
2001	5 (12%)
Lack of equipment Mix of different defibrillators onsite	
2008	7 (12%)
Limited training equipment Resuscitation area is small and does not have piped oxygen	
Ethical issues (appeared in 2001 survey only)	
We are required to resuscitate all patients, even if families object because we do not have an NFR policy	5 (12%)
Frequency of events (appeared in 2001 survey only)	
Few cardiac arrests Confidence in managing medical emergencies is low	5 (12%)

* Percentages add up to more than 100% due to multiple responses possible for each category.

LIMITATIONS

Although there was a good response rate, 15 hospitals did not return completed surveys in 2008. There was some confusion about the question related to resuscitation training. The question sought to establish training provisions for each category of staff such as nursing, medical and allied health. Some respondents did not answer for all categories and as a result there was missing data.

DISCUSSION

This study was conducted to compare the results of resuscitation policy and practice surveys obtained in 2001 and 2008. In particular we sought to ascertain if there had been an improvement in the nurses' access to using AEDs following the WA DoH operational directive. Our results confirm that there were changes in resuscitation policy and practice within the period between the surveys. Specifically, there was an improvement in the number of hospitals with AEDs, the proportion of hospitals that allowed nurses to defibrillate and the uptake of ARC guidelines.

All hospitals had a defibrillator of some description. Eight-six percent of respondents to the 2008 survey stated their hospitals had one or more defibrillators with AED capability. This is a 15% improvement since the 2001 survey but was not statistically significant. The increase in hospitals with AEDs was possibly an effect of the operational directive and promotion of defibrillator access by the ARC, although it must be noted there has been greater acceptance of the safety and efficacy of the devices over time.

It was pleasing that 98% of the surveyed hospitals in 2008 permitted nurses to operate AEDs compared to 74% in 2001. However, a distinction is made between having access to defibrillators and being permitted to use them. One respondent to the 2008 survey indicated that staff did not have access to the AEDs located at their hospital. At the time of survey, the defibrillators would not be installed in the clinical areas until the resources could be secured to facilitate the relevant training. It is disappointing training issues were cited as the reason for not implementing AEDs at this hospital considering these devices are designed to be self explanatory and used by lay rescuers (Handley et al 2005).

According to the 2008 survey results, CPR training was offered by all hospitals in Western Australia; however, not all sites required nurses to attend (7%). This is a slightly worse result compared to the 2001 survey result but was not a statistically significant difference. Some respondents indicated they did not have the time and resources to provide the recommended training. The operational directive mandates that all staff having patient contact should be competent in performing CPR (Government of Western Australia 2003). Given that training is commonly used to measure competence, it is a concern that not all hospitals can meet this provision.

For the hospitals that required nurses to complete assessment, most sites performed CPR assessment at least annually, which is in accordance with the current recommendations (Australian College of Critical Care Nurses 2006; Australian Resuscitation Council 2006b; Baskett et al 2005) The decision by the hospitals that offered three or six monthly assessments could be attributed to the lack of evidence on the optimal time frame for assessment and that degradation of skills and knowledge occurs soon after training (Australian Resuscitation Council 2006b). No comparison is made to the 2001 survey as questions about assessment were not included.

Almost all (98%) respondents in 2008 indicated the current ARC guidelines were used in the workplace compared to 83% in 2001. It is possible that increased uptake was influenced by the decision of the ARC to make its guidelines more readily accessible from their website.

Irrespective of the type of emergency management in place, it is a major problem that some sites (15%) cannot provide immediate defibrillation for patients in cardiac arrest and rely on 'on call' staff to perform defibrillation. This is of particular concern given the delays likely to be associated with calling in staff and the clear evidence that every minute of delay reduces the likelihood of survival (Valenzuela et al 1997). Lay rescuers can be effectively trained in providing shock advisory defibrillation, it is surprising that these sites have not implemented a first responder approach toward defibrillation for the staff members that are on site (Valenzuela et al 2000).

The comments made by respondents were similar for both surveys with the exception that the 2001 survey included statements on the implementation of AEDs and reluctance of some nurses to be trained in defibrillation. This is explained by the timing of the survey. The early 2000s was a period when many sites were installing AEDS for the first time.

CONCLUSIONS

Our survey has demonstrated that CPR policy and practice in Western Australian hospitals has improved since the 2001 survey and release of the operational directive from the WA DoH. Although improvement has occurred, it is indefensible that not every nurse employed at the hospitals surveyed in 2008 is permitted to defibrillate using AEDs. It is a serious omission and concern that not all hospitals can provide immediate defibrillation 24 hours per day, seven days per week and that a proportion of these sites also do not have AED capability.

RECOMMENDATIONS

Nurses have been identified as the likely first responders to a cardiac arrest in the hospital setting; it has been recommended training and access to AEDs occur at every site (Government of Western Australia 2003; Kenward et al 2002). Training and policy must emphasise early defibrillation for VF/VT arrests improves the chance of survival of the patient in cardiac arrest.

Hospitals that do not have a trained staff member on duty to perform immediate defibrillation 24 hours a day, seven days per week are urged to consider a first responder approach towards early defibrillation in order to improve the chance of survival for patients who sustain cardiac arrest.

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Effectiveness of an advanced practice emergency nurse role in a minor injuries unit

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KEY WORDS

emergency service, emergency department, patient discharge, advanced nursing practice, emergency nursing, patient discharge education

ABSTRACT

Objective
To evaluate the effect of an emergency department discharge initiative (EDDI) nurse on discharge processes and patient transition outcomes.

Design
Prospective comparative study of two groups of patients, aged 18-70 years discharged from a minor injuries unit.

Setting
Emergency Department Minor Injuries Unit at a large tertiary hospital in South East Queensland, Australia.

Subjects
In total 337 patients were eligible and 231 were included in the study. Participants were recruited into two groups one before the introduction of the intervention (n= 103) and one after the introduction of the intervention (n=128).

Intervention
Introduction of an EDDI nurse (an advanced practice role) focusing on improving patient pre-discharge care and transition home.

Main outcome measures
Data were collected pre-discharge and one week post discharge, using self reports of discharge planning processes and the Care Transitions Measure (CTM) Questionnaire.

Results
Patients seen by the EDDI nurse were significantly more likely to receive written discharge information, a discharge letter, information on equipment, information on medication side effects and have follow-up arranged, than those not seen. The intervention group also had a better understanding of post discharge healthcare management with a mean CTM score of 83.3 out of a possible 100 compared with the pre-intervention mean of 64.4. ($p<0.001$).

Conclusions
The introduction of an EDDI nurse in the minor injuries unit improves discharge information provision and follow-up and leads to an improvement in post-hospital care transition from the patient's perspective.

INTRODUCTION

Recently, various expanded or advanced practice roles for nurses in the Emergency Department (ED) have been developed (for example, Nurse Practitioner, Specialised Emergency Nurses or Advanced Practice Emergency Nurses) and there is a growing body of evidence that suggests these roles are both effective and acceptable to patients (Wilson and Shifaza 2008; Carter and Chochinov 2007; Derksen et al 2007). These advanced practice roles mainly focus on managing patients with minor injuries and have been evaluated based on process and service outcome measures such as the rate of patients who left without being seen, patient waiting times, patient satisfaction and cost, compared to medical officer care (Wilson and Shifaza 2008; Derksen et al 2007; Nash et al 2007). One systematic review of nurse practitioners in the ED included studies that assessed the quality of care, as well as these other variables, and concluded, 'The results of this review suggest the addition of a staff member dedicated to seeing minor treatment patients will improve wait times for these patients as well as improve patient satisfaction, with little or no impact on quality of care' (Carter and Chochinov 2007, pp. 294).

One of the key elements of care for patients being treated for minor injuries in an ED is discharge planning that incorporates the provision of information to assist with transition home and self-care once discharged. Hospital discharge planning is credited with such beneficial effects as reduced length of hospital stay, improved quality of home care, increased patient satisfaction and a reduction in unplanned hospital readmissions (Holland et al 2003; Payne et al 2002; Parkes and Sheppard 2001; Driscoll 2000; Naylor 2000). Contributors to unexpected readmissions include sub-optimal medical management, lack of sufficient home support, failure to comply with prescribed therapy and unexpected side effects of medications (Einstadter et al 1996). In the ED, use of multidisciplinary teams for discharge planning has been shown to reduce the rate of readmission to hospital for at risk groups (Moss et al 2002). However, few studies of advanced practice nursing roles in ED focus on discharge planning and patient transition.

EDs vary widely in the information given to patients on discharge (Taylor and Cameron 2000a). Studies have demonstrated that patient recall and understanding of diagnosis, treatment and follow up plans are poor (Taylor and Cameron 2000b). The compliance of recently discharged emergency patients is directly related to their comprehension (Clarke et al 2005). Poor comprehension may be due to the stressful environment of the emergency department, poor English or reading ability or the desire to leave quickly after a long wait (Clarke et al 2005). A research study of patients discharged from an emergency short stay unit found they felt they received adequate information and were satisfied with the level of care, however, a large proportion still required subsequent medical care for the presenting problem after discharge (Arendts et al 2006). A preliminary audit in the Gold Coast Hospital emergency department (ED), undertaken as part of in-house quality control processes, suggested that many patients received inadequate information prior to discharge and that discharge processes had room for improvement.

Patient understanding of self care instructions and the quality of the patient's transition from hospital to home are difficult to quantify. To date there have been few measures developed that focus on this transition from the patient's perspective (Coleman et al 2005). In 2005 an American research team developed a measure called the Care Transitions Measure (CTM) which was based on four focus group derived domains. These domains relate to how well patients understood and felt capable of managing aspects of their own care once discharged. It was found to be able to discriminate between patients discharged from hospital that did and did not require a subsequent ED visit (Coleman et al 2005). While the CTM was developed based on data from older adults discharged from medium stay units rather than ED patients, it is currently being applied to a broad range of populations by over 1000 different groups of clinicians and researchers. The WHO Regional Office for Europe is sponsoring a hospital quality improvement project that will incorporate the CTM in the indicator set to be used in up to 200 hospitals in 10 countries (Coleman et al 2007).

The quality of transition to home and the nurse's role in discharge planning for patients admitted to ED are rarely explored in the literature. Patients treated in a minor injuries unit may easily have their individual discharge needs overlooked as, by the nature of the unit, patient stays are of short duration. While the use of a multidisciplinary team for discharge planning may reduce the rate of readmission to hospital for at risk patients (Moss et al 2002), lack of clarity as to who is responsible for discharge planning and patient education as well as time pressures may hinder effective discharge processes (Watts and Gardner 2005; Guttman et al 2004). Clarifying responsibility for aspects of care with other members of the health team is important in order to provide optimal care and prevention of harm (ANMC 2006). Studies have identified the need for a key worker, such as a transition nurse, to ensure successful co-ordination of post-discharge services (Bristow and Herrick 2002; Einstadter et al 1996).

The purpose of this study was to evaluate the effect of an emergency department discharge initiative (EDDI) nurse on discharge processes and patient transition outcomes. Specifically, the intervention focussed on the provision of discharge information, the provision of work certification and the arrangement of follow-up appointments with other health care providers.

METHOD

This was a prospective, comparative study incorporating a before and after design. The study was undertaken in the emergency department of the Gold Coast Hospital (GCH), a major metropolitan hospital on the east coast of Australia. The department sees 65,000 patients per year and serves a large local population of over 500,000 as well as a seasonal influx of tourists.

The minor illness and injury unit is geographically separate from the main emergency department and has been operational since 2004. It is typically staffed from 0730 hours to 2230 hours with one to two doctors and a nurse. The unit sees an average of 40 patients per day. Patients are allocated to the unit by a triage nurse on the basis of specific criteria. Patients attending the unit are primarily discharged following treatment.

PARTICIPANTS

All patients treated in the minor illness and injury unit and discharged to their place of residence, between the hours of 0800 to 1600 Monday to Friday, were eligible for the study. Mental health patients and patients less than 18 years of age or over 70 years of age were excluded as they were managed in different areas or by different teams.

Intervention - Emergency Department Discharge Initiative (EDDI) nurse

The intervention was the establishment of an Advanced Practice Nursing Role in the ED. Gardner et al (2007) developed a research informed model of the service parameters of the Advanced Practice Nursing Role that differentiates the role from Nurse Practitioner in Australia. The Advanced Practice Nurse is an experienced specialist registered nurse who has the knowledge and ability to provide expert clinical care and advice to patients (Gardner et al 2007; ANMC 2006). In this study the role was established to provide care and education to patients who were discharged from the minor injuries unit of the ED. The EDDI Nurse had over five years of ED nursing experience and had a background in home care. This meant that he had a comprehensive knowledge base involving expertise in the care of conditions, such as but not limited to, chronic diseases, soft tissue injuries, head injuries, medication advice, alcohol and drug dependence as well as being familiar with the community services and referral agencies available.

The initial four weeks of the study comprised the pre-intervention period. During this time patients received the normal standard of discharge care. This consisted of verbal or written instructions from the emergency doctor or nurse. A discharge nurse with additional qualifications and clinical experience was available on an ad hoc basis but was only consulted as deemed appropriate by the medical team. For some shifts this discharge nurse was the same individual who eventually occupied the EDDI Nurse role during the intervention period.

During a second four week period (the intervention period), between the hours of 0800 and 1600 Monday to Friday, the EDDI Nurse reviewed the patients, following assessment and treatment prescription by the emergency medical team. The EDDI nurse made an assessment of the patient's needs, coordinated the episode of care and provided discharge information, medication and equipment advice and arranged follow up with other health care practitioners as appropriate.

Table 1 provides a comparison of care provided in the pre-intervention and intervention periods.

Table 1: Comparison of roles and responsibilities for patient care in pre-intervention and intervention periods

Roles and Responsibilities for Patient Care	Pre-intervention	Intervention
Patient assessment	Emergency doctor	Emergency doctor
Ordering of diagnostic tests and treatments	Emergency doctor	Emergency doctor - EDDI Nurse review
Coordination of diagnostic testing and timely review by medical team	Emergency doctor	EDDI Nurse
Provision of written instructions to assist with post-discharge self-management	Emergency doctor	EDDI Nurse
Provision of follow-up care appointments or referral to community services	Emergency doctor	EDDI Nurse
Provision of equipment e.g. crutches	Emergency doctor/ Physiotherapist	EDDI Nurse
Provision of medication prescription	Emergency doctor	Emergency doctor - EDDI Nurse review
Provision of medical certificates	Emergency doctor	Emergency doctor - EDDI Nurse review

DATA COLLECTION INSTRUMENTS

Data were collected using two interview instruments (one pre and one post discharge) and a diary was given to participants to aid recall for the post discharge interview. The pre-discharge interview was developed by the research team and consisted of a 25-item checklist that focused on which information, equipment, medications, medical certificates and follow-up/referrals the patient had received and from whom. This interview was conducted by the research assistant (RA) attached to the project. The RA was trained to use the interview checklist and the first five patients were interviewed by both the RA and one of the investigators resulting in a 100% agreement in data collected.

The post discharge interview schedule included the Care Transitions Measure together with some additional items related to health care practitioner visits within the past week. The CTM focuses on patient understanding of self care instructions and discriminates between patients discharged from hospital that did and did not have a subsequent ED visit (Coleman et al 2005). The CTM is made up of 15 questions that measure the quality of preparation for care transitions (Coleman et al 2005). Responses are graded from one (strongly disagree) to four (strongly agree) and a cumulative total is translated to give a score out of 100. A higher score indicates a better 'transition' from the hospital to the community. The CTM has a high internal consistency and reliability with one study recording a Cronbach's alpha of 0.93 (Coleman et al 2005). Again the RA w as trained in the administration of the CTM and the extra items related to service access.

A diary was provided to the study participants and they were asked to record any problems they had once they returned home and access to health professionals including ED representation or access to allied health/community care, or General Practitioner.

DATA COLLECTION PROCEDURES

Just prior to discharge patients were interviewed by the RA using the interview checklist. The RA was a nursing student who was not involved in the care of the patients. One week post-discharge the patients were interviewed, at home, by telephone at a time convenient to them. This second interview was conducted by the same RA. If the participants could not be contacted one week post-discharge attempts were continued until the tenth day. Both pre and post-intervention cohorts were blinded to their treatment group as they were informed that the study was investigating perceptions of discharge.

ETHICAL CONSIDERATIONS

Ethical approval was gained from the hospital Human Research Ethics Committee. A data collector consented patients at the point of discharge. Indigenous support workers and translators were available on an on-call basis.

DATA ANALYSIS

Data were collected and entered onto an Excel database then transferred with no patient identifiers to the SPSS statistical software program. Demographic characteristics of the sample were analysed using descriptive statistics. CTM scores between the groups were compared using Mann-Whitney U tests for non-parametric data. Other between groups comparisons were analysed using Chi square measures. The level of significance was considered to be p <0.05.

FINDINGS

During the study period 1,761 patients presented to the minor injuries unit. Three hundred and thirty seven patients were considered eligible for the study. Of these 70 refused to consent and were excluded. Thirty six patients were subsequently lost to follow up. In total 231 patients were included in the study, 103 in the pre-intervention groups and 128 in the post-intervention group.

The pre and post intervention groups were similar in terms of age, sex and diagnostic group (see Table 2). In addition there were no statistically significant differences in age, sex and diagnosis between study participants and those lost to follow up.

Table 3 provides a comparison of patient discharge processes between the pre and post-intervention groups.

Table 2: A comparison of the demographic characteristics and diagnostic groups of the pre and post intervention groups included in the sample

	Pre-intervention (n=103)	Post-intervention (n=128)	p-value
Age [median (IQR)]	33 (20)	36 (26)	0.23
Male [n (%)]	66 (64.1)	80 (62.5)	0.81
Presenting condition			
Laceration, minor injury [n (%)]	48 (46.6)	73 (57.0)	0.59
Minor fracture [n (%)]	27 (26.2)	23 (18.0)	
Eye and ear problem [n (%)]	10 (9.7)	14 (10.9)	
Bites and stings [n (%)]	3 (2.9)	3 (2.3)	
Infections [n (%)]	3 (2.9)	3 (2.3)	
Minor burn [n (%)]	3 (2.9)	1 (0.8)	
Other [n (%)]	9 (8.7)	11 (8.6)	

The provision of information, organisation of follow-up appointments and the provision of work related certificates all improved following the intervention. Some of the between group differences did not reach statistical significance because either the groups were too small or the pre-intervention frequency was high.

Table 3: Comparison of provision of discharge planning between pre and post-intervention groups

Discharge Planning	Pre-intervention n (%)	Post-intervention n (%)	P value
Information provision			
Given information specific to diagnosis	20 (19.4)	73 (57.0)	<0.001
Provided with discharge letter	13 (12.6)	84 (65.6)	<0.001
Provided with verbal information	89 (86.4)	120 (93.8)	0.06
Provided with written information	42 (40.8)	107 (83.6)	<0.0001
Provided with information on equipment when required	24 (64.9)	89 (98.9)	<0.001
Medication information provision			
Given information on purpose of medication	32 (84.2)	50 (90.9)	0.33
Given information on side effects of medication	18 (46.2)	37 (67.3)	0.04
Given information on frequency of medication	23 (59.0)	40 (74.1)	0.12
Follow up arrangements			
Follow up appointment with healthcare professional arranged	49 (47.6)	81 (63.3)	<0.001
Provision of work related certificates			
Medical certificate required but not received	9 (8.7)	0 (0.0)	N/A
Workers compensation certificate required but not received	3 (2.9)	0 (0.0)	N/A

The CTM score represents an outcome measure for transition from hospital to home. It is calculated out of 100 where a higher score indicates a better transition post discharge from hospital (Coleman et al 2005). The Cronbach's alpha for the CTM result in this study sample was 0.95. Results of Mann-Whitney U tests comparing average CTM scores showed that the pre-intervention group (n=103) had a median care transitions measure score of 64.2.(IQR =11.36) while the post-intervention group (n=128) had a higher median score of 83.3 (IQR =27.2) and the differences between the two groups reached statistical significance (p<0.001).

The participants were asked to keep a diary of any difficulties they experienced once home and of visits to health professionals related to the reason for emergency department presentation. The post-intervention group was more likely to have follow up appointments made before they left the emergency department compared to the pre-intervention group (63.3% v 47.6%; p<0.001). While a smaller proportion of the post-intervention group, compared to the pre-intervention group, required an unscheduled visit to a health care provider following discharge, this difference did not reach statistical significance (17.5% v 12.6%; p=0.31).

DISCUSSION

The provision of written discharge information (12.6 %) and discharge letters (40.8%) were poor pre-intervention. This contrasts with other studies such as Arendts (2006) where the majority of patients felt that they received adequate discharge information and 80% of patients received written instructions. This may reflect a system failure in this department or poor education of the medical team in discharge planning practices. However, the improvement in all outcomes, including the CTM score, post-intervention indicates that an EDDI nurse can improve post-hospital care transition.

Patients attach great importance to information on illness and treatment (Suhonen et al 2005). In this study the provision of information specific to the diagnosis was significantly improved in the post-intervention group. This was also found by Byrne et al (2000) where patients seen by a nurse practitioner were significantly more likely to receive discharge information and written instructions (McKenna et al 2000). Studies of information provision in Australasian EDs have suggested that preformatted instructions should be provided to all patients (Taylor and Cameron 2000a). The results of this study suggest that patients seen by an EDDI nurse are more likely to receive such information.

Few patients in the study required medical or workers compensation certificates so the numbers were too small for between group comparison. All of the patients seen by the EDDI nurse, who required certification, received it. The provision of such certificates after the point of discharge provides frustration for patients attempting to gain compensation and for emergency administration staff trying to retrieve medical records from storage.

The provision of information on medication purpose and frequency showed no significant difference between the two groups. However patients seen by the EDDI nurse were more likely to be given information on the side effects of medications. In a study of doctor-patient communication Crane (1997) found that 74.6% of discharged emergency patients understood the function of their medication but only 25.8% understood the schedule or frequency. The favourable results of this study may reflect that only a limited range of medications, often simple analgesics, are prescribed from the unit.

Patients who had contact with the EDDI nurse were more likely to have appointments made for follow up care. These results concur with studies of inpatient discharge planning where patients seen by a nurse co-ordinating the discharge process were more likely to have follow-up appointments made (Einstadter et al 1996).

The percentage of patients requiring an unscheduled visit to another health care practitioner was 17.5% in the pre-intervention group and 12.6% with the EDDI nurse. Although this was not a statistically significant difference, the study only recognised a one week period for unscheduled returns. A longer period of observation may have detected more patients representing unnecessarily. Interventions in elderly patients discharged from EDs have shown a reduction in representation from 22.2% to 16.5% (Suhonen et al 2005). Similarly a multidisciplinary care coordination team in Melbourne found only 2.1% of elderly patients assessed by them had an unplanned representation (Moss et al 2002). Little data exists though as to what is an acceptable rate of representation to a minor injuries unit.

Few validated tools exist to assess the quality of care transitions from the patient's perspective (Coleman et al 2005). The Care Transitions Measure has been shown to have a high internal consistency and to discriminate between patients who did and did not have a subsequent rehospitalisation for their index condition (Coleman et al 2005). The measure was formulated using a small sample of inpatient focus groups in a northwest American centre with patients that had complex medical problems. As such it is not specifically designed to be applied to ED patients with minor injuries. Despite this it could clearly discriminate between these two groups of ED patients who received very different levels of discharge preparation.

Other limitations of the study include the number and types of patients lost to follow up and patients excluded from the study. Two to three attempts were made to contact patients by phone for follow-up. The patients in the non-responding group were not found to have a significantly different demographic profile nor range of diagnostic group. However the loss of these patients introduces bias as this group may have been less able to manage their health care problem or been unsatisfied with the service provided. A small number of non-English speakers were included in the study group but all were lost to follow up. These patients have been shown to have poorer comprehension of discharge instructions (Clarke et al 2005) and pose a challenge for future successful discharge processes. Their loss means that the results cannot be generalised to include this group.

The benefits of discharge planning have been acknowledged in the literature particularly in the setting of transition from inpatient care to the community (Einstadter et al 1996; Laing and Behrend 1998), as well as with at risk, elderly patients in the ED (Naylor et al 1995; Moss et al 2002; Caplan et al 2004). Many of the problems with providing adequate discharge planning relate to a lack of co-ordination and communication between professionals and poor provision of information to patients and their carers (McKenna et al 2000). The results of this study suggest that the effectiveness of discharge planning can be transferred to the ED for patients discharged from a minor injuries unit.

CONCLUSIONS

The results of this study indicate the use of an EDDI nurse leads to an improvement in the provision of written discharge letters and information, the provision of information specific to the diagnosis, the provision of information on side effects of discharge medications, the arrangement of follow up with other health care providers and overall in post-hospital care transition. This study provides beginning evidence for the utility of an EDDI nurse whose role would be patient education and co-ordination of a multidisciplinary discharge team. Future research may incorporate randomised controlled trial design as well as testing alternative interventions such as a discharge education program for medical staff.

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Developing the Nurse Practitioner role in a rural Australian hospital - a Delphi study of practice opportunities, barriers and enablers

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Acknowledgments

The authors acknowledge the support of the Victorian Department of Human Services Nurse Policy Branch for financial assistance in the development of this manuscript.

KEY WORDS

rural, Nurse Practitioners, Delphi study

ABSTRACT

Objectives

To gain a consensus view of potential roles for Nurse Practitioners (NPs) in a rural Australian hospital and identify the barriers and enablers in their development and implementation.

Design

A three round Delphi study.

Setting

A rural hospital.

Participants

Twenty eight nurses, five doctors, four consumers, two health service managers, two allied health practitioners, one midwife, three community workers, two administrators and three others with hospital affiliation.

Main Outcome Measures

Consensus at 75% level of agreement or greater, identifying service gaps which might benefit from NPs and the barriers and enablers impacting on the success of developing and implementing the role.

Results

Introduce mental health, aged and critical care NPs initially. Barriers and enablers identified as impacting on the development and implementation of the role were:
Educational access for isolated rural nurses - local cohort learning with employment contracts encompassing fee assistance and designated study time.
Acceptance from doctors - supported role provided the proposed service is sustainable. Small teams of NPs would achieve this.
Inappropriate Recruitment - NP role matching service need, not individual.
Policy and Funding Constraints - clients are best served by NPs working across the care continuum. Co funding by acute and community providers could overcome the current constraints of commonwealth/state payment.

Conclusion

In developing and implementing NP roles at a rural health service the issues of access to tertiary education, creating a sustainable number of NP positions and financial cooperation from community and acute providers must be taken into account. Only then can nurses who wish to take on this NP role in a rural health service have the possibility of success.

INTRODUCTION

Australians living in regional and remote areas have poorer health than metropolitan populations (AIHW 2008). They are disadvantaged with regard to educational and employment opportunities, income and access to goods and services. This impacts not only on the community seeking health care, but on the health care staff who support that community in particular nurses (Smith 2007; Mahnken 2001). It is not surprising therefore that the Australian Productivity Commission (2005) reports serious challenges to recruitment, professional development and retainment of workers across rural health.

The potential value of Nurse Practitioners (NPs) in the Australian rural setting has previously been discussed (Turner et al 2007; Roberts 1996), however the organisational acceptance and recognition that we cannot recruit tailor-made people to fulfil these roles in an already depleted rural workforce has not been adequately explored. The implementation of NPs in rural health is thwarted by many obstacles -some covert and some overt (Turner et al 2007).

Acceptance of NPs is increasing (Pearson and Peels 2002; Offredy 2000), however the growth of NPs in rural Australia has been slow despite state efforts to cultivate and support organisations in placing the position into their services (Gardner 2004). Currently in Victoria forty-seven Nurse Practitioners are endorsed, forty -one in metropolitan settings and six rural (Nurses Board of Victoria 2009).

In 2005 as part of their goal to develop the NP role, the Victorian Department of Human Services (DHS) requested the development of organisational service plans to implement NPs. The Delphi Study was one of the approaches used to determine such a plan in a rural setting.

AIMS AND OBJECTIVES

The aim was to gain a consensus view of the opportunities for practice and the barriers and enablers which would inform the development of a service plan for the implementation of NPs at a rural hospital in Victoria. We also aimed to provide a platform for engaging key clinical and health service leaders in discussion and understanding of the possible NP roles.

METHOD

A Three Round Delphi study was utilised. This design was chosen for its capacity to gain consensus from health care practitioners and consumers on issues relating to the local implementation of NPs. This method gathers group opinions about a complex issue without face-to-face interaction (Rayens and Hahn 2000). Stakeholders generally considered as being expert about the topic or issue to be discussed are formed into a panel. As described by Rayens and Hahn (2000) the panel are anonymous to one another throughout questionnaire rounds. Commonly three to four rounds occur before consensus is reached.

The use of the Delphi technique within nursing research to forecast and to gain consensus, has been steadily increasing (Lofmark and Thorell-Ekstrand 2004). It is well known for engaging clinicians who are traditionally difficult to organise into mutually agreeable meeting times to discuss and agree on issues and actions (Keeney et al 2006; Hasson et al 2000). The Delphi method has precedent in NP policy research. It was used by Roberts-Davis and Read (2001), to establish the similarities and differences between NPs and Clinical Nurse Specialists and in identifying the activities of NPs in primary care (Holcomb 2000).

In addition to the organisational advantages, the iterative approach of the Delphi was a useful means for the participants to learn about NPs, as those with less of an understanding of the detail of the role and endorsement criteria learnt from those who had this knowledge.

The study was approved by the local NHMRC Human Research Ethics Committee.

Expert Panel

Fifty-one experts were invited onto the Delphi Panel. Fifty people agreed. They were purposively selected by the project steering committee from within the organisation, from other health agencies in the region and from a consumer advisory group (Table 1). Of the fifty experts who agreed to participate 48 returned the first questionnaire, thus establishing the panel at 48 members. In keeping with the notion of the panel being experts 58.3 % (n = 48) of the participants had twenty years or more experience in health care and held senior clinical or administrative positions. Some junior clinicians who had been identified as leaders were also included. All panellists were actively working in or were consumers of rural health services.

Table 1: Delphi Panel Participant Characteristics

	Frequency	Percent
Role		
Consumer	4	8.3
Acute Care Nurse	9	18.8
Nursing Administration	3	6.3
New Graduate Nurse	1	2.1
Community Nurse	5	10.4
Mental Health Nurse	4	8.3
Medical Specialist	2	4.2
Palliative Care Nurse	2	4.2
Aged Care Health Professional	3	6.3
GP	3	6.3
Nurse Academic	1	2.1
Allied Health Professional	2	4.2
Community Health Worker	3	6.3
State Health Policy Maker	2	4.2
Midwife	1	6.3
Other	3	6.3
Total	48	100
Years of Practice		
Ist Year	1	2.1
2-5 years	5	10.4
6-10years	3	6.3
11-20 years	8	16.7
>20 years	28	58.3
N/A	3	6.3
Total	48	100
Age groups		
20-30	2	4.2
31-40	8	16.7
41-50	28	58.3
51-60	7	14.6
61-70	3	6.3
Total	48	100

Round One

Broad questions were asked to generate initial discussion (Table 2). Reminder letters were sent out to all panel members one week after the return date for the questionnaire in each round.

Table 2: Round 1 Questions

1.	Please identify clinical areas where there are gaps in service delivery that might be improved with the introduction of Nurse Practitioners
2.	What do you see as the barriers to implementing Nurse Practitioners into our health service?
3.	What could be done to overcome these barriers and enable the success of Nurse Practitioner roles at our health service?

All responses were entered verbatim into the NVIVO 7© (QSR 2007) software program where content analysis and inductive reasoning (Trochim 2006) elicited key themes. Agreement around the coding and identification of themes was achieved through examination of the text by the principal researcher and members of the steering committee.

Round Two

The second round used statements under the themes developed from responses to the first round questionnaire utilising the panellists own words. The panel was then asked to rate their level of agreement on each statement on a 1 to 5 Likert scale with 1 being agree strongly and 5 being disagree strongly. An arbitrary level of consensus was agreed to by the steering committee and set at 75% prior to the commencement of the study (Keeney et al 2006, Hasson et al 2000, Roberts-Davis and Read 2001; Rowe et al 1991).

The panel was provided with feedback indicating where their opinion sat in relation to the group. Many Delphi studies report results using central tendencies and levels of dispersion (Keeney et al 2006) however given there is contention in the literature (Hasson et al 2000) around reporting Likert Scales as interval data, the Likert responses in this study were considered ordinal and we chose not to represent the data with the standard deviation, instead presenting our panellists with the descriptive statistics including the median and mode. This was represented as bar graphs and percentages showing the member where their opinion sat in relation to the rest of the panel.

Round Three

The panel reviewed the statements where consensus had not been achieved and rated them again on the Likert Scale. The Delphi was halted after round three as very little shifts had occurred. Consistent with recommendations to enhance Delphi findings (Powell Kennedy H, 2004), supplementary stakeholder interviews (individual and group) were held to explore the findings of the Delphi and further inform recommendations for the service plan using deductive reasoning (not reported here).The Panel was provided with a comprehensive report of the findings and a copy of the final service plan report. No incentives were offered.

FINDINGS

Three rounds were needed to reach consensus on the key barriers and enablers and the clinical areas where service gaps might be addressed. Response rates for the three rounds were 96%, 96%, 72%, respectively (n= 48).

Round 1: Seven themes (Table 3) emerged from the initial broad questioning under which forty-four statements were generated.

Table 3: Round One Themes

1.	2.	3.	4.	5.	6.	7.
Communication of the Role	Acceptance/ Rejection from doctors	Difficulty in accessing education and training	Organisational Need Vs. Individuals career desire	Recruitment	Sustainability including Evaluation	Commonwealth /State funding

Round 2: Consensus on thirty-two of the initial forty-four statements was achieved.

Round 3: Aged Care, Mental Health, Critical Care and Emergency Department (ED) were the areas identified with significant service gap however no agreement could be reached on the client group to be targeted in the ED thus it was eliminated.

Six more statements reached consensus giving - a total of thirty-eight of the initial forty-four. No significant shift in the remaining six statements which included issues of NP role evaluation, clinical supervision, conflict and peer jealousy, occurred. The thirty- eight statements were further consolidated from the original seven themes into four key barriers with suggested enablers as described below forming the basis of the DHS requested service plan.

Educational Access for isolated rural nurses

The median age of our local nursing workforce (45 years), the tyranny of distance to universities, the loneliness of on-line learning and economic disadvantages associated with living in a rural community all hamper tertiary study. Combining Masters Education and the development of competence in extended clinical practice with an already overloaded professional and private life was seen as onerous for the rural nurse. In addition many nurses are already financially burdened by the cost of supporting their children studying away from home.

The panel proposed developing a supportive culture for learning, including an employment contract with information on tertiary scholarships, regular study time to complete the Masters and the opportunity to work with mentors. The contract would limit the candidacy to an agreed period of time for completion and guarantee the effort would be ‘worth it’ with a NP job upon endorsement. If teams of NP candidates were appointed then a cohort community of learning approach would address the difficulty of isolated, distance study.

Acceptance from Doctors

Every member of the panel raised the issue of acceptance of the role by the medical profession. It was perceived that doctors would be opposed to NPs. When stratified out, the responses from the doctors on the panel reflected a more positive attitude. While the major Australian professional medical body actively opposes much of the NP role (AMA 2005), this study showed a more pragmatic outlook from doctors with agreement that NPs working in areas of Aged Care and Mental Health would lift the burden of rural practice for GPs.

Important to the success of the NP/Doctor relationship was a surety that once established these new roles would be sustained and could meet the referral demand.

Small teams of NPs should be developed rather than individual roles which would prevent burnout and provide a reliable service model.

Appropriate Recruitment
To be sustainable from a service delivery perspective, NP roles need to evolve from an existing or projected service gap. Aged Care, Mental Health and Critical Care were agreed to be the starting point. Developing the scope of practice and establishing a formal candidate position to recruit to from organisational and community need rather than matching an individual's particular skill set to a new NP position, was favoured. Communicating these new roles by the respective clinical executive directors was seen as important to addressing the confusion that exists about what NPs do, ensuring this new role is understood and fits with the overall workforce strategy and service profile.

Flexible Models of Practice
The full benefit of NPs would be seen if they could practice in the acute and community setting, following the patient journey. Lack of access to Medicare Benefits Schedule (MBS) and Pharmaceutical Benefit Schedule (PBS) were a major concern. Co-funding of NP positions between the local health service state funded acute inpatient services and commonwealth funded community services could work in overcoming some current restrictions to practice.

LIMITATIONS

The principal researcher was responsible for undertaking the preliminary education sessions about the study and engaging the Delphi Panel. This could have introduced bias as many of the panel attended these sessions. While this study focused on one health service, the underpinning economic and workforce conditions are resonated across small rural or regional locations as evidenced by the Indicators of Health Service Performance (AIHW 2008). The findings therefore have wide relevance across the rural health sector.

DISCUSSION

ED is the most common practice setting for metropolitan NPs (Nurses Board of Victoria 2009). No consensus could be achieved on the NP scope of practice in the rural ED and it was therefore rejected as one of the first places to start developing the role. This may point to some key differences in the rural and metropolitan ED contexts. The metropolitan emergency NP roles were established to better manage lower acuity patients and reduce wait times. The rural ED in this study is staffed with junior doctors with limited access to emergency physicians. The most experienced nurses, including NPs, may in fact be needed with higher acuity patients.

Critical Care as a practice setting also differs from the metropolitan experience to date. Metropolitan Critical Cares are largely closed units with access to medical intensivists. Continuity of critical care expertise lies with the nurses in the rural setting who manage care in collaboration with various disciplines from the medical team. NPs were seen as strengthening the governance and timeliness of interventions in this context.

While this Delphi study took place in 2006, local consensus that NP roles should be first developed in Aged Care and Mental Health is now consistent with subsequent Commonwealth policy priority areas for NP (Commonwealth Department of Health and Aging 2008).

The findings point strongly to the importance of supporting members of the existing nursing workforce financially with scholarships and dedicated study time. Recognition of family commitments, lack of time, both personally and professionally remain a key barrier to rural nurses taking up further study and professional responsibility. This finding is consistent with the literature around rural workforce recruitment, retainment and satisfaction (Francis et al 2001; Hegney 2000; Hegney et al 1997). Rural nurses in Australia consistently report that employer support for further education and training is not widely available to them for reasons of financial constraint or unsatisfactory management practices (Haslam McKenzie 2007). Rural nurses frequently experience extended shifts and on call, no breaks during shifts and requests not to leave the locality during off duty hours (Mahnken 2001). A call for supported education and training combined with a mindfulness of a workforce under significant social and professional pressure is a finding well supported by the literature and is applicable to any rural nurse attempting education as a NP.

The consistency of responses questioning how doctors would view this new role was not surprising given the well publicised reactions of professional medical bodies such as the Australian Medical Association (2005). What was surprising though was this same opinion was not a view shared by the doctors on the panel. This discussion on medical acceptance was very valuable as it lead to a key enabler, in so far as the sustainability of the role could be achieved by developing teams of NPs rather than solo roles.

Recruiting to an area of service need rather than finding a role to fit an individual is consistent with the current policy direction of the Victorian Department of Human Services (2009). Confusion around what the NP is and is not has been a hall mark of NP development (Gardner 2004; Gardner et al 2007). Building NPs into the overall workforce strategy and the engagement of executive directors as champions, is crucial to ensuring the NP role is understood and communicated to all staff within the organisation.

Access to MBS and PBS has been called for repeatedly since the emergence of the Australian NP. Subsequent to the time of this study the Australian Government policy has changed to accommodate this, effective 2010 (Kearney et al 2009). This groundbreaking change to the Australian health system will allow NPs to work in community and acute settings as was called for in this study. In addition to this however, the research identified opportunities for providers funded by state and commonwealth to co fund NP roles thus allowing the NP to follow the patient journey.

The areas where consensus was not achieved will perhaps only be resolved with the implementation of the role when the candidates begin to explore the opportunities for clinical supervision, experience peer jealousy or conflict and can demonstrate key indicators of effectiveness.

The high response rates were most likely achieved because of the time allowed for initial engagement of the panel, an observation also described by Keeney et al (2006). It may also indicate the high level of interest in the NP role and the desire of the panel to have a voice in development.

Further follow-up to the findings to ensure applicability and external validity (Powell Kennedy 2004) occurred with individual and group interviews to check that the four policy action statements could be achieved at an organisational level and led to an enthusiasm to implement the research findings.

CONCLUSIONS AND RELEVANCE TO CLINICAL PRACTICE

This Delphi Study identified mental health, aged care and rural critical care as the initial areas for developing NPs. The fundamental importance of actively supporting the educational needs of potential rural NPs in an environment under significant workplace and community stress is highlighted. Teams of NPs will not only offer a sustainable service but will provide a cohort of candidates that will lessen the loneliness of long distance learning.

Doctors will accept the role providing it functions reliably. Cooperation between providers of state and commonwealth funded services can facilitate the NP moving in and out of the acute service model. Further, the Delphi approach served as an effective vehicle for engaging with health care professionals and consumers in communicating and facilitating subsequent understanding of the NP role.

Additional studies are required to provide information on the impact of the rural NP, the availability of clinical supervision to rural candidates, experiences of inter-professional conflict or jealousy and the best use of NPs in the rural ED.

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The breast or bottle? Women's infant feedings choices in a subsequent birth after a previous Caesarean Section

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KEY WORDS

birth, Caesarean Section, breastfeeding

ABSTRACT

Objective
The objective of the study was to explore, from mothers' perspectives, the experiences and decision-making associated with a subsequent birth following a Caesarean Section (CS) of which feeding their newborns was a specific focus. This article presents the sub-set of findings on infant feeding choices.

Design
A qualitative methodological framework, utilizing descriptive phenomenology.

Setting
A maternity hospital in Brisbane, Australia.

Participants
Twenty women who had given birth at Redland Hospital after experiencing a previous CS were invited to participate.

Data Collection Techniques
Tape recorded interviews were conducted six weeks postpartum.

Results
The findings identify that mothers fell into three different attitudinal groups regarding their decision-making with respect to feeding their newborn. The first perspective was based on a strong commitment to breastfeeding, which was often maintained in the face of quite significant difficulties. The second perspective was a complete refusal to breastfeed and a clear decision to bottle feed made prior to the birth and adhered to irrespective of alternative advice or persuasion. The third perspective was an initial desire to breastfeed that was easily thwarted by difficulties. The findings emphasise the importance of facilitating for CS births an environment that promotes bonding and breastfeeding by ensuring, where possible, that there is no separation of mother and baby after the birth, maximum opportunity for skin-to-skin contact, time for the mother to breastfeed the baby in the period immediately after the birth and no supplementation of breastfeeding with formula.

Conclusions
The success of the midwife or maternity nurse in relation to supporting breastfeeding was, in part, impacted on by the mother's pre-determined approach to feeding the newborn. Breastfeeding support for attitudinal groups one and three were most likely to be successful, while the second group was refractory to nursing breastfeeding assistance.

INTRODUCTION

The benefits of breastfeeding for the health and emotional well-being of children, and the health of mothers, have been well documented (Day 2004). The medical and sociological literature overwhelmingly supports and encourages breastfeeding wherever possible. This is an issue of recognised global significance, with the position of the World Health Organisation (2008) as follows:

Breastfeeding is an unequalled way of providing ideal food for the healthy growth and development of infants; it is also an integral part of the reproductive process with important implications for the health of mothers. As a global public health recommendation, infants should be exclusively breastfed (1) for the first six months of life to achieve optimal growth, development and health (2). Thereafter, to meet their evolving nutritional requirements, infants should receive nutritionally adequate and safe complementary foods while breastfeeding continues for up to two years of age or beyond.

In Australia, breastfeeding is an issue of national significance, although the states and territories have varied in their translations of this recommendation. In Queensland, the current State Government (Queensland Health) recommendation is that babies be breastfed exclusively for the first six months of life, with family foods introduced at this age in addition to continued breastfeeding to at least 12 months and after that for as long as mutually desired (QH 2008).

Yet despite these clear recommendations and guidelines, the chances of an Australian infant receiving optimum nourishment in their first years of life is presently less than one per cent.[1] Grille (2005) argues the global retreat from breastfeeding is one instance in which evolution in parenting has gone backwards. This is concerning, given the documented benefits of breastfeeding for both infants and their mothers and thus the association between full-term breastfeeding and reduced public health costs (Palmer 1988).

This paper presents the findings of research which explored the experiences and decisions, from mothers' perspectives, of feeding their newborns following a birth subsequent to a birth by Caesarean Section (CS). The findings identified mothers as being of one of three pre-disposed approaches with respect to feeding their newborns. It is anticipated that an understanding of these different attitudinal groups will enhance midwives' ability to tailor their care of such mothers in the initial post-partum period insofar as such care pertains to assisting mothers with the feeding of their infants.

METHODS

The Research

The study was conducted by a senior research fellow at the Central Queensland University (CQUniversity) in association with the then Director of Obstetrics and Gynaecology at Redland Hospital (Hospital), Queensland. The study was funded by a Hospital/ CQUniversity Industry Grant.

Aims and Objectives

The aim of the research was to explore from the mothers' perspective the experience and process of decision-making associated with a subsequent birth after a previous CS. The focus on the birth experience included the topic of feeding the newborn. The findings from the study are rich and dense and will be published separately as a number of articles. The findings presented in this article are from the data that describes the mothers' experience with feeding their baby following the birth. The objective in presenting these findings and identifying different attitudinal groups, is to enhance midwives' ability to tailor their assistance of mothers with feeding their infants in the initial post-partum period.

Methodology

Descriptive phenomenology was chosen as the theoretical framework as it underpins a research method that explores the 'lived experience' of people from the 'inside' perspective of the individuals involved in the experience (Holloway

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[1] The Australian Bureau of Statistics has documented that only one per cent of children are breastfed until two years of age (ABS 2003). This is the minimum length of time that is considered 'full term' breastfeeding by the World Health Organisation (WHO 2008).

2008). As Spiegelberg (1975) explains, descriptive phenomenology is the 'direct exploration, analysis, and description of particular phenomena, as free as possible from unexamined presuppositions, aiming at maximum intuitive presentation'. In this case, the phenomenon is mothers' lived experience with regard to the experience and decision-making associated with delivery and newborn feeding for a subsequent birth following a CS. As inductive, phenomenological, qualitative work, the reporting of findings is based on a commitment to the participants' point of view with the researcher playing the role of co-participant in the discovery and understanding of what the realities are of the phenomena studied (Sorrell and Redmond 1995; Streubert and Carpenter 1995).

Participants

Twenty women who gave birth at a maternity hospital in Brisbane were invited to participate in the study in June 2008. Women were eligible to participate if they had experienced a Caesarean Section subsequent to this pregnancy. The sub-section of findings presented in this article are from interviews with all of the 20 women, conducted in June 2008, six weeks after the subsequent birth. Of these 20 women, two had vaginal births (VBAC), two attempted VBAC and 16 chose elective CS (EC).

The participants were enrolled through the Project Officer for the study who was under contract with CQUniversity and thus independent of the Hospital. The mothers were notified of the study by a letter from the Head of the maternity department. The Project Officer was provided by the hospital with a list of mothers who fitted the criteria, along with their telephone numbers. The participants were consecutively enrolled from this list, through an initial telephone call, followed by the Project Officer providing written Project Descriptions of the project and an invitation for voluntary participation in the research. At this stage signed consent forms from the participants were collected and enrolment occurred. There was no screening of participants. Prior to interviewing, participants were again informed of their ethical rights (e.g., informed consent, confidentiality, right to withdraw). Ethical consent to conduct the study was obtained from the CQUniversity Human Research Ethics Committee and the HREC of the Hospital. Participants were verbally informed of their rights in research and written consent was obtained for participation in the research.

Demographics

Prior to this last birth experience, 13 women had experienced an emergency CS and seven had an EC. At the time of the interview, 17 mothers had two children, one mother had four children and two mothers had three children. All participants were either married or in a de-facto relationship at the time of birth. The participants' mean age was 32 years, with an age range of 26 to 38 years. All of the women lived in the geographical catchment area of the Hospital.

Interviews

The data collection was conducted through an iterative, phenomenological, qualitative research methodology using open-ended interviews conducted at the time and location of each participant's choice (Holloway 2008). The interviews were conducted by a psycho-social researcher employed by CQUniversity and thus independent of the Hospital. The interviews were informed by the principles of 'phenomenological reflection' as outlined in the work of Van Manen (1990). The line of questioning included the techniques of probing, paraphrasing and silence to explore each participant's experience. The interviews lasted for approximately one hour and were audio-recorded. The interviews were transcribed verbatim by a research assistant independent of the Hospital.

Analysis

The language texts were then entered into the QSR NUD*IST computer program and analysed thematically. All of the participants' comments were coded into 'free nodes' which are category files that have not been pre-organised but are 'freely' created from the data. Thus the data analysis is driven by all of the participants' insights, not by selected pre-assumptions of the coders. The research team did not mediate the findings but rather developed code titles that directly reflect the participants' statements ensuring the final analysis directly describes the phenomenon (birth decision-making) from the participants' perspective. The coding was established by an experienced qualitative researcher and completed by a team of research assistants who have extensive experience coding qualitative data. There was complete agreement on the coding and emergent themes. The list of codes was then transported to a Word Computer Program (Word XP) and organised under thematic headings. The findings presented in this article are from the data that describes the mothers' experience with feeding their baby following the birth.

FINDINGS

The women's descriptions about their experience of feeding their newborn are easily divisible into three attitudinal groups. The first set of descriptions provided are from women who were strongly motivated to achieve a vaginal birth and to breastfeed and were prepared to overcome early difficulties with establishing feeding. The second set of descriptions are from mothers who prior to the birth were determined not to breastfeed, with this position maintained irrespective of professional or other advice. The third group initially attempted breastfeeding but quickly elected to artificially feed their baby after the birth when faced with obstacles. For clarity, the statements from the different groups will be presented separately. In order to enrich the presentation of findings, the mode of birth of the mother making the statements will be indicated as follows - elective Caesarian (EC); initially tried for VBAC but ended in emergency Caesar (TVBAC); Vaginal Birth After Caesarean (VBAC).

Group 1 - Strong desire to breastfeed

The mothers in the first group strongly expressed views that they considered breastfeeding a positive experience that helped to address a sense of disappointment associated with a birth by CS. Such mothers attained satisfaction from breastfeeding, as the following response demonstrates:

- (TVBAC) And I'm back at work now but I'm still feeding so I'm really happy that I can do that [breastfeeding]. Yes, so if nothing else I have that. So I'm happy about that [laughs].

The mothers in this group expressed their satisfaction with the provision of help and support for breastfeeding and found the initial assistance from midwives at the hospital very helpful:

- (TVBAC) Yes I'm still feeding. Yes, [the midwives were] really good and they didn't mind coming to help me with how to put her on and show me exactly how it worked. It was good, yeah.

In comparison to the reports of bottle feeding mothers, provided below, who preferred ease and convenience, the stories of the breastfeeding mothers were characterized by perseverance and a continuing commitment to breastfeeding. An appreciation of the support of midwives in initiating breastfeeding was evident. These characteristics are summed up in the following statement:

- (TVBAC) Ah, no, they [midwives] did help. I had a lot of attachment issues too. Like either I wasn't attaching him properly or he couldn't attach - you know how their mouths are so little. And of course my nipple was so big that, yeah, there was a lot of problems with that. And I had like bleeding, sore sort of nipples. But I persevered, we got there eventually [laughs].

There were descriptions from this group of mothers of being well-informed on the topic of breastfeeding. Associated with this was an expressed disappointment that hospital staff did not emphasise enough the negative impact of a CS on breastfeeding; for example:

- (VBAC) I've just read so much... But there's certain things that sometimes, I guess, like breastfeeding issues that they don't often tell you it can be harder to do when you've had a caesarean.

For this group of mothers, a key factor in their consideration of how to feed their newborn is what is best for their baby. The following comment is indicative of the sentiments of this group in this regard:

- (VBAC) Certainly, it is about giving your baby a better chance.

Group 2 - Decision not to breastfeed from the start

There were many mothers who made clear and definite statements that they did not even entertain the idea of breastfeeding. As the following examples demonstrate, for these mothers their intent was always to bottle feed:

- (EC) Yes I did decide right from the start that I would go straight to the bottle with this baby.
- (EC) Yes I did indicate that I wanted to bottle feed from the beginning this time and I felt so much happier this time round.

As can be seen by the following description, for these women the decision is final and not subject to what they perceive as pressure to breastfeed, even from close friends or family, as the following responses exemplify:

- (EC) But they [friends] just did say 'do you not want to try? Are you sure you don't want to try and breastfeed them'. You know, every day I was having to say, 'No, you know, I've made my mind up'.
- (EC) My mother-in-law had a bit of chip about the breastfeeding. But she couldn't help herself. She's a bit like that. I just ignore her [laugh].

Some mothers in this group reported that electing to artificially feed their infant did not diminish their self-esteem in their mothering role:

- (EC) And I haven't felt insignificant or less of a woman because of it [bottle feeding]. That sort of thing never bothered me, I've been lucky there. I know it gets to a lot of women... But, no, it didn't get to me.

However, some mothers perceived that others who believed in breastfeeding may not be approving of their approach and this impacted upon them:

- (EC) ... you can be really made to feel like you've got to breastfeed. Some people made me feel like I was copping out of it or I should go through that feeling tired [this mother primarily associated breastfeeding with feelings of tiredness].

The mothers from this group did not appreciate any pressure from the midwives to breastfeed, as one participant stated:

- (EC) They said to me 'oh your son is ready for a feed' and they popped him on me. I said 'no, no I'm bottle feeding' and the midwife said 'don't you mean artificial feeding?' I just thought, 'oh well who are they to tell me what to do anyway really'.

Similarly, another participant stated:

- (EC) And I also wanted to bottle feed, not breastfeed so I had that rammed down my throat from nursing and medical staff as well which really annoyed me.

Group 3 - Quickly turned to bottle feeding when faced with obstacles

The third group of mothers were initially motivated to try breastfeeding but elected to cease breastfeeding when they found bottle feeding easier. The general sentiments in relation to the importance of opting for the easier process expressed by this group are summarised by the following response:

- (EC) But I just gave up the ghost in the end and I thought 'na, it's not worth it', not fair on her [toddler] and it's not fair on me... [toddler] running around while I'm trying to breastfeed her. And it was just too much easier to put her [newborn] on the bottle.

This group of mothers communicated a sense of lack of knowledge about breastfeeding:

- (EC) I think that was because I didn't know how to look after my breasts and such things I suppose.

When they experienced the common problems associated with establishing breastfeeding such as blisters or bleeding nipples and concerns about quantity and quality of milk supply, the response to these problems was not to persevere but rather to change to the easy option of bottle feeding. As one participant stated:

- (EC) But he just wasn't getting enough, my milk wasn't coming through. And then they suggested to me that I could keep trying and trying and trying and eventually it will come through. But because it was very stressful. Just put him on the bottle.

Like other mothers, some mothers in this group were given inappropriate advice about breastfeeding, lacked support from family, or were encouraged by family members to give up breastfeeding for the 'easier' option of bottle feeding.

There was a clear message from this group of mothers that breastfeeding was not enjoyable:

- (EC) Then trying to get me to breastfeed and in the end I, after a few days, put him on the bottle. I didn't enjoy any of it.

Some of the third group of mothers who discontinued breastfeeding at an early stage reported that the midwives were helpful in their approach to breastfeeding, for example:

- (EC) They did help me with the breastfeeding and I did breastfeed for the five days.

However, most were very negative about the perceived pressure they felt from the midwives to breastfeed:

- (EC) And you know they do push sometimes. So everywhere you look - you walk into hospital everywhere you look posters: 'Breast is Best'. And you know pictures of the babies feeding. And how you're supposed to do it. They give you big manuals on how to do it. And it's like 'oh gee it's very daunting'. Some nurses are great, they'll say 'it's your choice'.

It was reported, to avoid the pressure of midwives, some mothers initially breastfeed in hospital and changed to artificial feeding immediately upon discharge:

- (EC) I think a lot of mothers breastfeed in the hospital purely so they don't have to listen to it. You know what I mean? A few of my friends have come out of hospital or breastfed for the two weeks and then 'oh stuff this' and put 'em [baby] on a bottle.

Others avoided the midwives' assistance:

- (EC) I don't know what happened but something went wrong so I just gave up in the end. I didn't consult nurses or midwives or anyone 'cause they all try and get you to breastfeed too much.

Some participants indicated that, although preferring breastfeeding, the midwives could be accommodating of bottle feeding mothers:

- (EC) They're [midwives] are a lot better about it. They are a lot more accommodating now than when I had my first child. They sort of refused to help me back then. Whereas now they were more likely to assist me if I needed it.

Bottle feeding seen as easier and more convenient option

For mothers in the second and third groups, bottle feeding was preferred on the basis that it was seen as easier and more convenient for the mother:

- (EC) Much, much easier I think because I was a bit more in control... I wouldn't be battling away trying to feed him while I was tired with stitches.

Reasons proffered by the mothers as underpinning their consideration in this regard included the belief that conditions ranging from tiredness to post-natal depression were less likely to be suffered, physical discomfort associated with breastfeeding and ease in management of young siblings. As one participant explained:

- (EC) See so many mums really struggling with their [breast] feeding and just being so tired and crying and getting depressed [after a vaginal birth]. I didn't want that with a two year old around. I guess I just took the approach that I knew was going to cause the least problems and was comfortable.

For another participant, bottle feeding allowed the mother to take 'breaks' from their infant more easily and thus minimised tiredness:

- (EC) ... but you know if I was tired I could drop him off somewhere with a bottle and just say: 'I need a break'.

Factors associated with the experience of a CS that impact on breastfeeding

The mothers listed a number of factors associated with the Caesarian experience which interfered with breastfeeding. These factors were brought about by the medicalised nature of a CS birth, which precluded the mother from engaging in a more 'natural' birth experience of which breastfeeding was part. First was the delay in putting the baby to the breast for the first time:

- (EC) I couldn't feed him obviously for a very long time until I was completely myself kind of thing. So I don't think he got fed until the second day at the hospital.

As another mother stated, the delay in putting the infant to the breast, coupled with the separation from the baby, was seen as contributing to problems with establishing breastfeeding:

- (EC) Probably had an effect mainly I felt because it was… I couldn't breastfeed. Like I tried to breastfeed, I thought that maybe if he would have been put up on me straight away I might have been able to have the skin-to-skin contact and he might have been able to breastfeed.

Secondly, by the time the baby was given to the mother for the first breastfeed, the baby was in a stressed state:

- (EC) … and I tried to feed her but she was screaming so [laugh]…

Thirdly, during the initial separation from the mother after the birth, the baby could have already been bottle-fed elsewhere:

- (EC) They put her in a humidicrib. I was going to try and breastfeed but because she'd had a bottle by the time she got to me, which was the nighttime, she didn't want to breastfeed.

If there is a long enough delay the mother will be engorged with milk interfering with the first time attachment:

- (EC) She didn't want to feed, I was too hard. It's like I was hard.

Many mothers stated that they bottle-fed both of their children born by CS as their milk did not 'come in':

- (EC) 'Cause I haven't been able to breastfeed with either of them either. My milk just hasn't come in and they just need food so I put 'em on a bottle.

DISCUSSION

The insights provided by the participants are easily divisible into three approaches as regards mothers' decision-making with respect to feeding their newborn. The first perspective is based on a strong commitment to breastfeeding, which is often maintained in the face of quite significant difficulties. The second perspective is a complete refusal to breastfeed and a clear decision to bottle feed made prior to the birth and adhered to irrespective of alternative advice or persuasion. The third perspective is an initial desire to breastfeed that is easily thwarted by difficulties. The overarching consideration for the latter two approaches is the ease and convenience of bottle feeding for the mother. This identification of the existence of different, pre-determined approaches as regards maternal decisions about feeding infants resonates with research by Sheehan, Schmied and Cooke (2003), who explored through qualitative research the baby-feeding decisions of a group of Australian women prior to birth. The authors found that women based antenatal decision on how to feed their newborns on a variety of sources and could be classified into the following four thematic groups: 'assuming I'll breastfeed'; 'definitely going to breastfeed'; 'playing it by ear' and 'definitely going to bottle feed'. The research reported in this article builds on this work with the presentation of findings of research on a more specific group, being mothers who had previously birthed by CS. Our research identifies the existence of three key groups, with the overarching considerations articulated by mothers in determining their fit within each group that of 'ease' and 'convenience' on one hand and what is perceived to be best for their baby on the other. While the findings demonstrate that decisions about the mode of birthing were often directly related to a prior birth experience, preferences with respect to the mode of feeding their newborn was more innate - the participants did not link their decisions and experiences with feeding their newborn to their prior birth experience.

Breastfeeding is seen as a positive experience for the first group of mothers and the satisfaction with natural feeding goes some way to addressing any sense of disappointment experienced at not being able to deliver the baby vaginally. It is interesting to note that this group of mothers was committed to achieving, where possible, a natural birth, as demonstrated by the fact that all women in this group either attempted or achieved a VBAC.

Recent qualitative research by Beck and Watson (2008) has established that the mode and experience of birthing by the mother can result in starkly different outcomes with respect to feeding their infants. For some, a traumatic or medicalised birth can crystallize a strong commitment to breastfeeding, whilst for others such a birth curtails breastfeeding attempts and results in artificial feeding of their infants. For women in the former group, a perceived ‘failure’ to birth vaginally led to a resolve to do something ‘right’, with descriptions provided by such mothers of their tenacity to succeed at breastfeeding linked to ‘proving’ themselves as mothers (Beck and Watson 2008, p 232-233). Establishing a successful breastfeeding relationship was considered a way to ‘make amends’ with their baby after a difficult arrival and helped mothers to mentally heal from a difficult or disappointing birthing experience (Beck and Watson 2008, p 233).

The support of midwives with establishing breastfeeding is appreciated by this first group of mothers. Characteristically, the first group of mothers show perseverance in the face of obstacles associated with establishing breastfeeding, including such experiences as milk supply and attachment problems and associated blistering and bleeding of the nipples. These mothers are likely to be well informed about breastfeeding and bonding and a key consideration guiding their decision-making is their perception of what is best for their newborn.

Research by Manhire et al (2007), found that birth by CS has a negative physical effect on breastfeeding but that this can be overcome by persistence and commitment on the part of the mothers. The mothers in the first group identified in the study demonstrated such tenacity. In assisting such mothers, it is of paramount importance that resources are invested in ensuring they receive adequate information, assistance and support in creating an environment conducive to bonding with their infant and establishing a successful breastfeeding relationship. Particular attention should be directed to assisting such mothers to lessen the impact of or overcome obstacles to breastfeeding created by CS births, for example, facilitating initial skin-to-skin contact, allowing the mother time to feed her baby for the first time and assisting breastfeeding where physical limitations brought about by a surgical delivery may pose difficulties.

The second group of mothers made firm decisions to bottle feed before the birth of their child by CS. This decision was often made and adhered to in the face of pressure from friends, relatives and/or health professionals to breastfeed. Satisfaction with breastfeeding is not valued by this group of mothers who express a sense of ease with bottle feeding. Any pressure to breastfeed is not appreciated by mothers with this approach and they spoke very negatively about and expressed intolerance of any comments by midwives that affirmed the importance of breastfeeding. The mothers comprising this group demonstrated their refractory attitudes to breastfeeding and the fact that such attitudes are deeply ingrained and resistant to alternative persuasion, whether from family, friends or health professionals. Strategies designed to promote breastfeeding are least likely to succeed with this group.

The third group of mothers typically engaged in initial attempts to breastfeed in the early hours or days after birth. However, any obstacles were quickly seen as a reason for changing to bottle feeding. This group of mothers described obstacles associated with the process of establishing breastfeeding including lack of knowledge about the process, lack of enjoyment with breastfeeding, blistering and bleeding of the nipples, problems with establishing their milk supply, a sense of not having a sufficient quantity or quality of breastmilk to offer their baby, infant distress created by breastfeeding problems and lack of support from family members. In contrast to breastfeeding mothers there was not a sense of satisfaction associated with mastering the art of natural feeding and a lack of concern about any disapproval associated with bottle feeding. Some of the third group of mothers appreciated the help of midwives who supported their initial breastfeeding attempts, but most expressed negative feelings about receiving pressure to breastfeed. Descriptions of experiences from this group of mothers indicate that some will avoid contact with midwives, hide the fact that they are bottle feeding or convert to bottle feeding upon leaving the hospital. The findings pertaining to this group resonate with research by McFadden et al (2007), which found that low breastfeeding rates can be attributed in part to deficits in breastfeeding knowledge, including ignorance about national breastfeeding guidelines and policies. The work of Dykes and Griffiths (1998) also resonates with this group, as they stress the significance of socio-cultural influences in determining modes of infant feeding.

The mothers described obstacles associated with the birth experience of a CS including factors such as the delay in placing the newborn to the breast, separation from and lack of initial skin-to-skin contact with the newborn, the distressed state of the baby after the experience of a Caesar, the baby being given a bottle in the nursery prior to being presented to the mother and engorgement of the mother's breasts from delay in contact.

Beck and Watson (2008) reported descriptions from some mothers in their study who considered breastfeeding to be a further physical violation after a traumatic birth, with breastfeeding imposing further physical pain on the mother. Other birth-related impediments to breastfeeding were considered to be perceived inadequate milk supply, distressing 'flashbacks' from the birth and a sense of being 'distanced and detached' from their infant.

Research shows that these factors can, in most cases, be relatively easily overcome with provision of appropriate information, assistance and support at the critical time. Such obstacles are not unique to mothers who have birthed by CS, but are reported as usual problems associated with the initial breastfeeding of an infant irrespective of the mode of birthing. As the findings reveal this group is the most vulnerable to persuasion in either direction as regards the feeding of their infant, it is critical that factors dissuading this group of mothers from breastfeeding their infants be addressed if breastfeeding rates are to improve in Australia. Recent research has confirmed that the vast majority of Australian mothers should be able to breastfeed their infants, providing the existence of conditions amenable to establishing a successful breastfeeding relationship. Their published statement on this issue is as follows (WHO 2008):

> Exclusive breastfeeding from birth is possible except for a few medical conditions, and unrestricted exclusive breastfeeding results in ample milk production.

Some of the barriers to breastfeeding posited by the mothers as physical issues, such as low milk supply, are in fact most often attributable to sociological and environmental influences rather than physical bodily attributes, such as prolonged separation after birth, lack of opportunity for skin-to-skin contact, facilitating time for the mother to breastfeed the baby in the period immediately after the birth and supplementing breastfeeding with formula. Such practices were reported to be the norm by participants in the study, yet are not consistent with the recommendations of leading expert bodies including the Academy of Breastfeeding Medicine (2003), the American Academy of Pediatrics (2005), the American College of Obstetricians and Gynecologists (2007), the Association of Women's Health, Obstetric and Neonatal Nurses (2000), the International Lactation Consultant Association (1999) and the World Health Organisation (1998). Rather, these bodies are uniform in their calls for the universal promotion of skin-to-skin contact and 'rooming-in' and their opposition to the routine separation of mother and infant after birth. Indeed, Dykes and associates (Dykes 2002; Dykes and Williams 1999) have recorded the important influence of Western biomedical science in the construction of an 'inadequate milk syndrome' or 'perceived breast-milk inadequacy' amongst lactating mothers.

Drawing on expert recommendations, Crenshaw (2007) reports that the final care practice, of six care practices that support normal birth recommended by Lamaze International, must be that there is no separation of mother and baby, with unlimited opportunities for breastfeeding. She encourages women to, wherever possible, arrange for a birthing experience that excludes routine separation of mother and infant, facilitates early and frequent skin-to-skin contact and encompasses 'rooming-in' of mother and baby (Crenshaw 2007).

RECOMMENDATIONS

The authors acknowledge and respect the present recognition in the medical and sociological literature of the desirability of increasing the present rates of exclusive breastfeeding in Australia. With a view to increasing the incidence of exclusive breastfeeding in Australia, there are a number of key factors that emerge from the findings that can be addressed. The key recommendation is that an understanding of the three different attitudinal groups can be used to inform strategies midwives use in supporting breastfeeding. Such knowledge can be used to reinforce the sensitive care that is needed to support mothers' efforts to breastfeed - sensitive care based on a partnership that respects the different experiences and perspectives that mothers bring to their approach to infant feeding. This is consistent with recent research by Schmied et al (2008), which emphasised the crucial need to listen to each woman and their needs and tailor midwifery care to meeting these individual needs if effective hospital-based postnatal care is to be provided.

From a practice perspective, this requires, for the first group of mothers (those with a strong commitment to breastfeeding), support and information to reinforce their decision and practical assistance to overcome any early breastfeeding difficulties encountered by the mother, particularly those that have arisen as a consequence of the birthing experience.

For the second group of mothers (those with a strong aversion to breastfeeding), respect for their decision, expressed by minimal intervention, is reported to be most helpful. The findings establish that this group is likely to be refractory to persuasion to breastfeed.

For the third group of mothers (those with an initial desire to breastfeed that is easily thwarted by difficulties), midwives can assist by providing information, both as to the benefits for mother, child and society to be gained by breastfeeding as well as the potential difficulties to be encountered and ways to overcome such difficulties. Practical assistance to overcome any early breastfeeding difficulties encountered by the mother, particularly those that have arisen as a consequence of the birthing experience, is of paramount importance. It is in this group that the most energy may need to be invested if positive outcomes are to be achieved.

It must be emphasised that most of these factors are of critical importance in the period immediately after the birth, during the mother's stay in hospital and, for the first and third attitudinal groups, it is important that efforts are made to engage the mother in discussion and to support the mother in establishing a successful breastfeeding relationship prior to the mother's discharge from hospital. For the mothers in this study who have experienced a CS it is essential to build a birth situation that promotes bonding and breastfeeding by ensuring where possible that there is no separation of mother and baby after birth, maximum opportunity for skin-to-skin contact and time for the mother to breastfeed the baby in the period immediately after the birth, and no supplementing breastfeeding with formula.

CONCLUSION

The findings presented in this paper identified three attitudinal groups with respect to mothers' approaches to feeding their newborns. It is anticipated that an understanding of these different attitudinal groups will enhance midwives' ability to tailor their breastfeeding support for mothers during the initial post-partum period.

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Farewell to the handmaiden? Profile of nurses in Australian general practice in 2007

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KEY WORDS

general practice, practice nursing, primary health care

ABSTRACT

Objective
To describe the characteristics of nurses working in Australian general practice, including their backgrounds, working environments, tasks and duties.

Design
National cross-sectional survey.

Setting
General practices in all regions of Australia.

Subjects
104 registered and enrolled nurses working as practice nurses (PNs).

Results
Participants were predominantly registered nurses (93%); all female; and had been in general practice for an average of 6.2 years. They were generally working part time (average 26.2 hours per week), with pay ranging from $18 to $45 per hour. Registered nurses had higher rates of pay but there was no clear relationship between rate of pay and years in general practice. The majority (86%) had completed one or more short courses, and one in six (16%) held or were undertaking postgraduate studies in practice nursing. PNs in the sample worked in practices where there was an average of one PN for every 2.43 GPs. Almost half (47%) worked in practices which employed allied health professionals, and 90% employed practice managers. All undertook duties relating to direct patient care, coordination of care, and management of the clinical environment. 90% undertook practice management and administration tasks, including 57% who provided some reception or secretarial support.

Conclusions
Although some differentiation of roles within the PN workforce was apparent, there were few discernable differences in nurse or practice characteristics associated with these different profiles, and they were unrelated to experience and remuneration. Findings highlight the need for development of career pathways and better monitoring of the PN workforce.

INTRODUCTION

Nurses have worked in general practice in Australia for many decades, but in recent years there has been significant growth and evolution in this sector of the nursing workforce. A key catalyst for this is the Australian Government's Nursing in General Practice Initiative, which commenced in 2001. This was designed to: address shortages in the general practitioner workforce; improve prevention and management of chronic disease; and improve access to, and the quality and integration of, patient care (Australian Government Department of Health and Ageing 2006). The Australian practice nurse (PN) workforce was estimated to total 7,824 in 2007, with some 58% of general practices employing at least one nurse (AGPN 2008). Past estimates of the size of the PN workforce indicate 59% growth since 2005 (see ADGP 2006); and 140% growth since 2004 (see Hordacre et al 2007). Prior to this there are no reliable estimates of workforce size, although there was an estimated 30% to 40% increase in the number of practices with a PN between 2002 and 2004 (Healthcare Management Advisors 2005).

The characteristics of the Australian PN workforce have been described in a number of reports. They are predominantly registered nurses (usually degree-qualified), with approximately one in five or one in six (15%-18%) holding certificate or diploma level qualifications (enrolled nurses) (AGPN 2008; ADGP 2006; Pascoe et al 2005). The vast majority (98.6%) of PNs are female, and most are aged over forty, with almost half (41%) in their forties and over one third aged 50 years or more (AGPN 2008).

Despite constituting a small proportion of the Australian nursing workforce, PNs comprise a significant and growing proportion of the primary care workforce. The ratio of PNs to GPs was estimated at one PN for every 2.3 GPs in 2007 (AGPN 2008). When working hours are taken into account this drops to one full time equivalent (FTE) PN for every 3.42 FTE GPs , reflecting the fact that the majority of PNs work part time while the majority of GPs do not (AGPN 2008). This is likely to alter as increasing numbers of GPs choose part time work, due to the growing proportion of women in the workforce and the different work/life preferences of younger GPs of both sexes compared to their older colleagues.

In rural areas the ratio of PNs to GPs is likely to be higher. Around 59% of the PN workforce is located in rural areas (AGPN 2008), compared to around 30% of the GP workforce (Australian Government Department of Health and Ageing 2005; AIHW 2008a), which suggests a ratio in rural areas of about one PN for every 1.5 GPs.

The role of nurses in the general practice setting was traditionally a narrow 'handmaiden' role focused on clerical and administrative duties (Pascoe et al 2005). Since the commencement of targeted government support in 2001, the focus of PNs has shifted more on to clinical tasks. Existing research on the PN role has identified that the key areas of practice for PNs include clinical care, clinical organisation, and practice management and administration (Healthcare Management Advisors 2005; Pascoe et al 2005; Watts et al 2004). Direct clinical care includes a wide range of tasks such as immunisations, health assessments, and management of chronic conditions. Clinical organisation functions include management of the clinical environment, recall and reminder systems, and co-ordination of patient services.

While there is an emerging consensus about the broad parameters of the PN role, there continues to be significant diversity in PN roles and functions across Australia (Halcomb et al 2006). The role has been found to vary with contextual factors such as practice characteristics, nurse characteristics and patient profiles. Practice characteristics include the location (rural/urban), business organisation, and employment arrangements (Halcomb et al 2006). Nurse characteristics include qualifications, skills, knowledge and experience. The role is also shaped by the available funding sources, for example those that are specific to particular clinical tasks, such as the PN-specific Medicare items (Jolly 2007).

There is little data currently available on the nature of PNs' clinical work, such as the conditions treated, the services provided, and the type of patients seen

(Keleher et al 2007). The Medicare Benefit Schedule (MBS) includes eight specific items for PNs, covering provision of immunisations, wound care, pap smears and check-ups for women's' health, antenatal care and chronic disease management. In 2007, some 4.3 million MBS practice nurse items were claimed. Of these, the vast majority were for immunisations (2.6 million) and wound care treatments (1.6 million) (Australian Government Department of Health and Ageing 2008a). These statistics do not capture the contribution of practice nurses to other Medicare items such as management plans, health assessments and team care arrangements.

The BEACH (Bettering the Evaluation and Care of Health) surveys provide a more comprehensive picture of the nature of clinical work in general practice, indicating clinical conditions and how they are managed (AIHW 2008b). Although the most recent year of the study provides some data about PN involvement in GP-provided care, the study continues to use GP-patient encounters as the primary unit of analysis. The 2007 report indicated that 5.1% of patient encounters included some practice nurse activity (AIHW 2008b). Notably, for almost two-thirds (63%) of GP-patient encounters involving PNs, no Medicare item was claimable for the practice nurse's activity, confirming that the Medicare data alone excludes the majority of PNs' clinical patient care work.

Additionally, encounters between practice nurses and patients where the GP is not directly involved on the day are not counted in the BEACH data set, and these can be a large part of the practice nurse's work. Finally, neither BEACH nor Medicare captures other aspects of practice nurses' work, such as management of the clinical environment, integration and liaison with other health providers and social and community services, and health promotion activities.

Although a number of studies of the practice nurse workforce in Australia have been conducted, continued monitoring of the role and duties of PNs is vital, given the continuing, rapid expansion and evolution of the workforce, and the high degree of heterogeneity apparent within it. Such monitoring and analysis will assist the continued development of workforce support strategies, education and training frameworks, as well as contributing to the knowledge base about models of care in Australian general practice (Keleher et al 2007). Furthermore, as noted above, to date no studies have provided an in-depth description of the nature of clinical patient care work being done by Australian PNs.

The aims of the Practice Nurse Work Survey were to provide an up to date profile of the characteristics and duties of PNs in Australia; to provide a detailed description of the services currently being provided by PNs; and to investigate any nurse or practice characteristics associated with different service provision profiles. In this paper, we describe the methods of the Practice Nurse Work Survey, and present a profile of the participating nurses, the practices in which they work, and the duties and tasks they undertake.

METHODS

The Practice Nurse Work Survey was a national cross-sectional survey of nurses working in general practice in Australia. Participants were a volunteer sample of Registered (Division 1) and Enrolled (Division 2) nurses working in a general practice or primary health care setting eligible to bill Medicare. 108 PNs were recruited to the study, and of these, 104 (96.3%) returned completed study materials. Recruitment of participants was undertaken by advertisements calling for volunteers. The Call for Participants was distributed to members of the Australian Practice Nurse Association (APNA) and through the divisions of general practice network. The study was also publicised through events, newsletters and websites of relevant organizations, including: West Australian Practice Nurses Association, Royal College of Nursing Australia, Australian Nursing Journal, Australian Rural Nurses and Midwives, and Council of Remote Area Nurses of Australia. Targeted recruitment in particular jurisdictions was also undertaken to ensure a representative national sample, by direct contact with individual divisions of general practice.

Data were collected between May 2007 and May 2008. Two data collection instruments were used: a nurse and practice profile questionnaire, and an 'encounter form'. The questionnaire included 44 items in three sections: background characteristics of the participant; characteristics of the general practice in which the participant works; and duties and functions. The questions were developed based on previous surveys of PNs (ADGP 2006; Watts et al 2004). Background characteristics included: age, gender, membership of professional organisations, training and qualifications, years working in general practice, whether any additional job was held, rate of pay per hour, and hours worked per week. Practice characteristics included: number of PNs, number of GPs, other staff in the practice, postcode, registration for relevant Practice Incentive Program payments, and whether the nurse had their own space for seeing patients and for paperwork. Nurses were also asked to indicate whether they had undertaken any of a list of 25 tasks and duties in the past week (see Results section for detailed information).The questionnaire was piloted with two groups of Practice Nurses (total n=16) from rural and urban settings in Victoria, and took approximately 15-20 minutes to complete.

The encounter form collected data about each contact between a participating PN and a patient, and was modelled on the BEACH encounter forms (AIHW 2008b). The form comprised 17 items describing characteristics of the consultation, including: the reason for the encounter; procedures or services provided; GP involvement (before, during or after the contact between the nurse and the patient); whether a practice nurse Medicare item number applied; duration; location (in practice or elsewhere); whether face-to-face or indirect (e.g., by telephone) and unidentified patient details (age, sex, whether a new patient). Each nurse completed encounter forms for 50 consecutive patient contacts. Each form took approximately one minute to complete.

A reminder email or letter was sent to participants who had not returned study materials after four weeks, and a final reminder two weeks later as needed. Ethical approval was provided by the Monash University Standing Committee on Ethics in Research involving Humans. Participating nurses signed an informed consent form. In addition, a 'Letter for Practice' was signed by a practice principal, practice manager or other authorised delegate of the employer, confirming agreement to the PN's participation. Participating PNs were provided with a laminated patient information notice for their patients to read prior to each consultation. Patients indicated their consent verbally to the participating nurse.

In this paper, we describe the characteristics of the participating nurses, the practices in which they work, and the duties and tasks they undertake. Data are descriptive and were analysed in Microsoft Excel. Findings regarding nurse-patient encounters will be reported separately.

Table 1: Key sample characteristics

	Practice Nurse Work Survey (N=104)	National Practice Nurse Workforce Survey Report 2007 (AGPN 2008)
Age		
<30	2.9%	6%
30-39	13.5%	17%
40-49	45.2%	41%
50-59	34.6%	32%
60+	3.8%	4%
Percent female	100%	99%
Qualifications*		
Registered	92.3%	84%
Enrolled	7.7%	16%
Time in general practice		
0-1 years	16.3%	20%
2-5 years	43.3%	40%
6-10 years	23.1%	20%
11-19 years	12.5%	14%
20+ years	4.8%	6%
Location - State/Territory		
New South Wales & ACT	25.0%	27%
Victoria	32.7%	25%
Queensland	15.4%	22%
South Australia	8.7%	9%
Western Australia	7.8%	12%
Tasmania	7.7%	3%
Northern Territory	1.9%	2%
Percent rural or regional†	45.2%	59%

* Qualifications data for AGPN excluding missing data.
† Rural and regional location defined as zones 3-7 of the Rural, Regional and Metropolitan Areas (RRMA) index. (DPIE and DHSH 1994)

FINDINGS

Profile of participants

A profile of some key characteristics of the sample is presented in Table 1, in comparison with the characteristics of the 2007 National Practice Nurse Workforce Survey (AGPN 2008). Although the study sample was a self-selected one, the profile of participants can be seen to be broadly similar to the Australian practice nurse workforce as a whole with respect to age, gender, qualifications, experience, and location. The main exceptions are an over-representation of registered nurses in the study sample, and some differences in geographic distribution, with an over-representation of nurses from Victoria and from metropolitan locations.

Working conditions

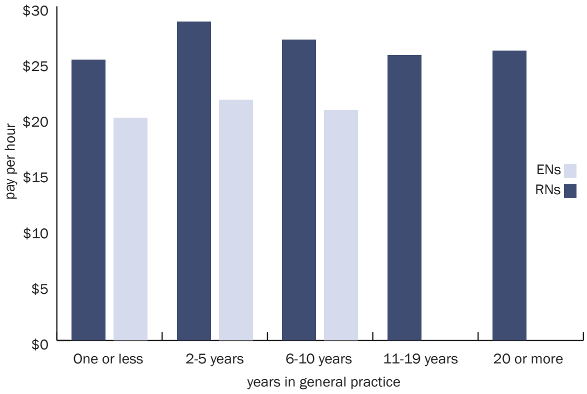
Almost half (44%) of nurses had an additional job as well as their main PN job, with most of these working in hospitals (n=20) or aged care facilities (n=8). The average number of hours worked per week by nurses in their PN job was 26.2, with nurses who had an additional job working slightly fewer hours on average in their PN job, than those for whom this was their sole employment (Table 2). For those working in another job, the average number of hours worked per week in this additional setting was 11.7 (range 1-40).

Table 2: Hours per week worked, by main PN job and additional job

	Hours per week: Mean (Range)		
	Main PN job	**Additional job**	**Total**
Work in one General Practice only	28.5 (10-50)	-	28.5 (10-50)
Have additional job as well as main PN job	23.3 (5-38)	11.7 (1-40)	33.7 (21-52)
Total	26.2	11.7	30.8

The mean rate of pay was $27.55 per hour (range $18-$45). This varied by qualification, with an average of $28.05 for registered nurses (range $20-$45) and $20.97 for enrolled nurses (range $18-$26). Those who had worked in general practice for more than ten years were paid less than more recent recruits (Figure 1). RNs with 2-5 years experience were the highest paid.

Figure 1: Hour rate of pay by years in general practice for registered (RNs) and enrolled (ENs) nurses



Training and qualifications

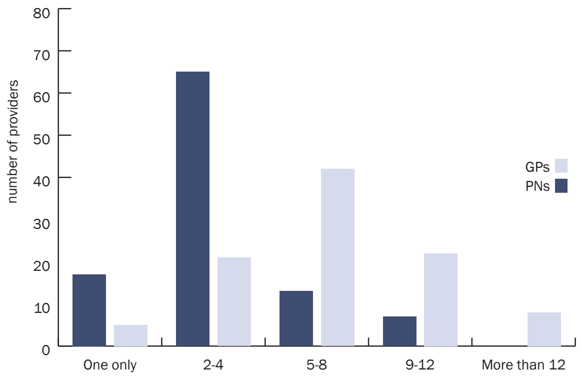
The majority of participating registered nurses (77%) completed their basic training in the hospital setting, consistent with the age profile of the sample. The majority (86%) had completed at least one short course, with up to eight different areas reported. The average number of courses completed by those with at least one was 2.3. The most common areas of study in short courses were: immunisation (59% of participants); wound management (38%); women's health including pap smears and family planning (23%); diabetes management and education (22%); and asthma management and education including spirometry (22%).

Just over half the participants (55%) reported having completed or currently being enrolled in 'postgraduate' qualifications in addition to their basic nursing qualification. The level of these qualifications was not always clearly reported, but there were at least 13 Bachelors' degrees, 16 Graduate Certificates, eight Graduate Diplomas, four Masters and one PhD. 17 participants (16%) were undertaking or had completed postgraduate qualifications in practice nursing, including 12 Graduate Certificates and four Graduate Diplomas. The same number of participants (17) had qualifications in midwifery.

Practice characteristics

The average practice size was 3.5 PNs (range 1-12) and 6.9 GPs (range 1-23). The majority of practice nurses (83%) work with at least one other PN (see Figure 2). Of the eight ENs in the study, five worked with at least one other PN and two were the only nurse in their practice (missing data for one EN). The figures indicate an average ratio of one PN for every 2.43 GPs in the practices of the participating nurses. Four nurses worked in practices where they outnumbered the GPs and ten nurses worked in practices with a one-to-one ratio of PNs to GPs.

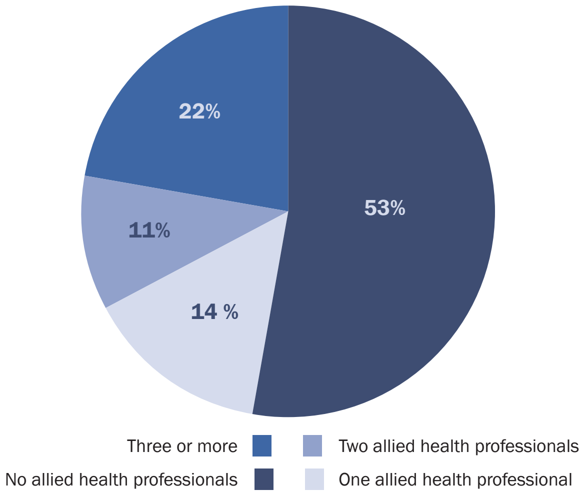
Figure 2: Practice size by number of PNs and number of GPs



Almost two-thirds of nurses (63%) worked in practices with a full time practice manager; 27% worked in practices with a part-time practice manager and the remaining 10% worked in practices where there was no practice manager.

Almost half of the participants (47%) worked in practices where allied health professionals were also working (Figure 3). The most common allied health professionals with whom PNs were co-located were: psychologist (22% of nurses); dietitian (21%); podiatrist (16%), physiotherapist (12%); and diabetes educator (11%). Only 11% of smaller practices (1-2 GPs) employed allied health professionals, compared to 51% of practices with three or more GPs. Rural practices also had a lower proportion, with 38% of rural practices (RRMA 3-7) having on-site allied health professionals in the practice, compared to 55% of metropolitan practices.

Figure 3: Proportion of nurses working in practices with allied health professional staff



All rural practices were registered for the Practice Incentive Payment in Nursing. For metropolitan practices, 42 out of 57 (74%) were registered, four (7%) not registered and 11 (19%) unsure.

Tasks and duties

Practice Nurses in the study reported undertaking a wide range of tasks and duties in their practice on a weekly basis. All were involved in direct patient care, coordination of care, and management of the clinical environment. Detailed data are presented in Table 3, for the sample as a whole and selected sub-groups.

Administrative duties

Almost all (90%) undertook some practice management and administration. Within this, functions such as financial management, staff rostering and information technology support were relatively less common, while more than half provided some reception or secretarial support. There were few differences apparent between PNs who undertook reception and secretarial duties and those who did not. There was no difference with regard to years working in general practice and the proportion working in practices with no practice manager. The proportion of rural practices was similar for PNs undertaking some reception /secretarial duties compared to those who did not undertake these duties (44% and 46%); and there were only marginal differences in practice size (average of 3.2 PNs and 6.5 GPs for those doing reception/secretarial work; compared with 4.0 PNs and 7.2 GPs for those not) and rate of pay ($27.62 versus $26.03 respectively).

On average, participants reported undertaking 2.6 out of the six practice management and administration duties. The mean number was slightly higher for nurses working in practices with no practice manager (mean=3.0; n=10) and for PNs in rural areas (mean=2.9; n=45).

Table 3: Percentage of Practice Nurses undertaking specific tasks and duties[*]

	Total sample (n=104)	RNs only (n=96)	Rural Nurses (n=47)[†]	PN Postgrad (n=17)[‡]	>10 years in GP (n=18)
Contacts with patients					
Face-to-face contacts with patients	100.0	100.0	100.0	100.0	100.0
Indirect (phone etc) contact with patients	98.0	97.8	97.8	94.1	100.0
Group sessions with patients	10.0	9.8	13.3	0.0	5.6
Coordinating patient care					
Write up patient records - patient not present	94.0	93.5	93.3	100.0	94.4
Liaise with other health professionals - patient not present	77.0	76.1	80.0	76.5	100.0
Liaise with social/community services - patient not present	66.0	66.3	66.7	70.6	72.2
Organising clinics	56.0	56.5	64.4	52.9	44.4
Coordinating patient services - other duties	73.0	75.0	71.1	76.5	83.3
Patient advocacy	66.0	65.6	75.0	70.6	66.7
Management of the clinical environment					
Infection control	96.0	96.7	95.7	100.0	100.0
Cold chain monitoring	93.0	93.5	95.7	100.0	94.4
Order/monitor pharmaceutical supplies	86.0	85.9	93.3	100.0	100.0
Order/monitor other clinical supplies	88.0	88.0	86.7	88.2	83.3
Monitor/maintain doctor's bag / emergency trolley	87.0	87.0	93.3	100.0	88.9
Practice management and administration					
Reception / secretarial support	57.0	55.4	57.8	58.8	55.6
Information technology support	29.0	28.3	31.1	35.5	27.8
Staff orientation and education	71.0	73.9	80.0	82.4	72.2
Financial management	9.0	9.8	11.1	11.8	16.7
Staff rostering	20.0	21.7	28.9	29.4	33.3
Develop/update policy and procedures	70.7	72.5	84.4	82.4	77.8
Other tasks and duties					
Research - own or assisting GP	61.6	61.5	71.1	76.5	77.8
Professional development / CPE	92.0	94.6	93.3	82.4	83.3
Population health: Outreach, needs assessment	20.0	20.7	24.4	23.5	33.3
Travel time for off-site work	34.0	35.9	37.8	35.3	44.4
Other	20.2	20.8	29.8	5.9	27.8

[*] Percentages exclude missing data

[†] Rural and regional location defined as RRMA zones 3-7 (DPIE and DHSH 1994).

[‡] Nurses holding or currently undertaking postgraduate studies in general practice nursing.

Less common duties undertaken by PNs include group sessions with patients, and population health activities. The characteristics of nurses undertaking these duties are compared with the total sample in Table 4. This indicates few discernable differences between these subgroups of nurses, and the small number render any differences suggestive rather than conclusive.

Table 4: Characteristics of Practice Nurses undertaking selected duties

	Total sample (n=104)	Nurses conducting group sessions (n=10)	Nurses providing population health (n=20)	Nurses travelling off-site (n=34)
Nurse characteristics				
Years in general practice (mean)	6.2	5.2	6.9	6.9
Rate of pay per hour	$27.55	$27.40	$27.45	$27.35
Hours worked per week	26.2	27.9	28.0	26.4
Practice characteristics				
Number of PNs	3.5	2.2	3.2	3.0
Number of GPs	6.9	5.7	6.4	5.7
At least one allied health (%)	47.1	60.0	45.0	50.0
Rural location (RRMA 3-7) (%)	45.2	60.0	55.0	50.0

DISCUSSION

The nurses in this study were predominantly middle-aged, registered nurses working part time in general practice. The majority (60%) had worked in general practice for less than six years, with one in six less than two years. This profile is consistent with previous studies of the Australian PN workforce (AGPN 2008; ADGP 2006; Pascoe et al 2005). The mean rate and range of pay for nurses in our study was almost exactly the same as that found in the 2007 APNA pay and conditions survey. (Mean $27.65; APNA 2007)

Most training undertaken by PNs was short course format rather than formal postgraduate qualifications, which is likely to be heavily influenced by the training requirements associated with provision of Medicare-claimable services. One in six (17%) were undertaking or had completed postgraduate qualifications in general practice nursing, and the same proportion were qualified midwives.

The practice staffing profiles suggest that the typical work environment for PNs is a large, multidisciplinary practice. Nationally, 49% of practices have five or more GPs (AIHW 2008a), compared to 73% of practices in this study. There is currently no national data on the employment or co-location of other health professionals in general practices, and this study provides new information on this characteristic, suggesting that on-site allied health professionals are a common feature of contemporary general practice.

We acknowledge there are limitations arising from the use of a self-selected, non-random sample. At present there is no option in Australia, as there is no national database of practice nurses. Analysis of the representativeness of the final study sample indicated that the sample was similar to the known characteristics of the Australian practice nurse population. The voluntary nature of our sample is likely to have introduced particular biases. First, as noted above, our sample over-represents large group practices and thus may not reflect the experiences of PNs working in solo or small practices. Second, given that perceived relevance and interest is an important factor in the decision to participate in research, it seems likely that nurses in our sample would have more advanced and developed roles compared to nurses whose role is more limited or ‘traditional’. As such, our findings may be best interpreted as an indication of what is possible and plausible for PNs, in large, multidisciplinary practice environments that are supportive of more advanced roles.

Our findings are suggestive of some movement away from the traditional role for nurses in the general practice setting, although administrative functions do continue to be a feature of the role for many nurses. Some differentiation between nurses was apparent, but we were unable to ascertain clearly particular nurse or practice characteristics associated with different practice profiles. Our findings confirm that differentiation of PN roles continues to be unrelated to experience and rates of pay.

While remuneration in isolation is a relatively unimportant factor in nurse job satisfaction, recruitment and retention (Cowin and Jacobsson 2003), the lack of correspondence between pay rates and experience or qualifications found in this study is of concern. The fact that some nurses are paid $18 per hour (little more than the minimum wage, which in 2007 was $13.74 per hour (Australian Fair Pay Commission, 2007) is also of concern and seems to indicate that at least some nurses are significantly under-valued in the general practice setting. Pay rates for PNs are highly variable and in the absence of a standardised pay scale, are dependent on individual negotiation with employers.

This pattern, which is frequently found within the nursing workforce, reflects in part the lack of a career pathway or educational standards for Australian PNs. Other countries such as the United Kingdom have well-defined career pathway for practice nurses, with different levels including the opportunity for senior and extended roles such as advanced nurse practitioner (with prescribing rights) and practice partner (NHS 2008). At least five Australian universities now offer post graduate certificates, diplomas and masters' degrees in general practice nursing and this will add further impetus to the momentum to develop a career framework for Australian PNs. Such a framework will ensure that remuneration and roles are commensurate with experience and qualifications. The competencies for general practice nursing that have been developed will provide a useful basis for this (Australian Nursing Federation 2005). Prospects for utilising or developing skills and for being promoted are an identified determinant of nurse recruitment, retention and job satisfaction (Day et al 2006; Cowin and Jacobsson 2003), further underlining the importance of career frameworks in attracting and retaining sufficient nurses in the general practice sector (Keleher et al 2007).

Recruitment and retention of practice nurses will be an ongoing challenge in the context of generalised shortages in the nursing workforce, driven by factors such as the ageing of the workforce, increasing demand for health and aged care services, and poor retention rates. Continued pressure on the general practitioner workforce combined with growing government interest in multidisciplinary-team-based approaches to primary health care (Australian Government Department of Health and Ageing 2008b) will ensure that demand for the PN workforce will continue to be strong.

The findings also highlight significant data gaps in standardised national workforce data collections. Such data sets, describing and monitoring over time the characteristics of the workforce and the services they provide, are essential for informed workforce planning and service planning for both primary health care and the nursing workforce. Although in this paper we have focused on nurse and practice characteristics, and practice profiles, our study has also collected data about the services provided and the patients seen by PNs (which will be reported separately). At present, these data are routinely collected for general practitioners (e.g., in Medicare statistics and the BEACH studies), but not for nurses working in general practice.

The need for improved monitoring of the PN workforce is particularly salient given the current development of a national primary health care strategy, which has a strong focus on non-medical providers and disease prevention (Australian Government Department of Health and Ageing 2008b). Significant increases in the provision of preventive services are likely to require not only increased numbers of primary health care providers, but also new incentives or payment mechanisms and changed roles. Unless we have a clear understanding of the current role of the PN, for example in activities such as disease prevention and health promotion, the implications of any changes will be unclear. What would be the workforce requirements for both PNs and GPs in the future? Although there has been considerable attention to planning the GP workforce (AMWAC 2005; AMWAC 2000), to date there has been no planning undertaken for the PN workforce. Effective primary health care workforce planning will need to entail improved workforce planning for PNs, which in turn will need to be underpinned by improved data collections. Furthermore, new approaches to workforce planning will be required which incorporate a cross-professional perspective.

The wide variation in PN roles that is evident in this study may also have implications for quality of care and patient outcomes, but at present this is unclear. Data on these aspects is not routinely collected for any providers in the general practice setting, but current developments in national primary health care policy provide an opportunity to also embed routine collection of information about quality of care and patient outcomes. This would seem to be particularly important if new models of care, which may see quite significant changes in PN roles, are being implemented.

Practice Nurses are a key element of the primary health care workforce in Australia, and their numbers have grown markedly during a time of generalised shortages in the Australian nursing workforce. In the context of current interest in strategic approaches to primary health care, PNs have never been more important. This importance should be duly recognised with improved career frameworks, and national monitoring and planning.

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Surveying general practice nurses' communication preferences in Tasmania

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Conflict of interest

None declared.

Acknowledgements

Lin Bowers-Ingram was awarded a Research and Development Program Fellowship through the Australian Government Department of Health and Ageing, Primary Health Care Research, Evaluation and Development (PHCRED) program for new researchers and the Discipline of General Practice, University of Tasmania.
We would like to also acknowledge the support and encouragement from Dr Emily Hansen and Sally Thurley whilst conducting this study and all Practice Nurses who participated.

KEY WORDS

primary health care; practice nursing; professional communication; survey; professional isolation.

ABSTRACT

Objective
To investigate Tasmanian practice nurses preferred means of communication.

Design
A self-administered postal survey.

Setting
Primary care.

Subjects
In this study a practice nurse was classified as: (a) a trained registered or enrolled nurse who worked with/ and for a sole GP/group of GPs in a clinical capacity; and (b) self identified as a practice nurse. At the time this study was conducted, this related to 197 nurses.

Main outcome measures
Tasmanian practice nurses preferred means of communication with agencies / organisations outside their practice and between other practice nurses.

Results
Respondents preferred methods of communication were by telephone (68%) and in person (32%), although the latter was not usually practical. The majority stated there should be more communication between practice nurses and were interested in being involved in a state-wide network. 140 of 197 nurses responded (71% response rate). The Tasmanian practice nurse demographic data was generally comparable to that of other Australian Practice Nurses obtained by the 2005 Australian General Practice Network (AGPN) survey.

Conclusion
Identifying and meeting communication and networking needs of the evolving practice nursing specialty is essential for future developments nationally and internationally, in developing the professional role and support for practice nurses. This will ultimately reduce professional isolation, improve job satisfaction and improve patient care.

INTRODUCTION

"Effective communication is a major component of successful nursing practice… The greatest problem of communication is the illusion that it has been accomplished" (Cherry and Jacob 2005, pp.390). The motivation to conduct the study came from the primary author's personal experience as a nurse new to practice nursing, where she felt professionally and socially isolated from her colleagues, compared to working as a hospital or community health nurse. Was this also the experience of her colleagues? Do practice nurses (PNs) communicate or want to communicate with each other and others external to their immediate work environment? Determining and meeting PNs communication preferences may help address the issue of professional isolation and aid regional and national general practice and other key stakeholder organisations in communicating more efficiently and effectively with PNs.

Literature review

An international shortage of nurses compounds the problem of providing health services for an ageing population in all westernised countries (Watts et al 2004). Primary health care (PHC) services, including general practices, will have to become more team-based to meet these challenges and therefore there is a growing need for effective and efficient communication within and between PHC teams.

It is estimated that 90 percent of the Australian population access their general practitioner (GP) each year (AIHW 2004). General practices, supported by the Australian Government Medicare scheme, are predominantly privately owned businesses, who directly employ their own PNs. A small number of general practices are state government owned, where the PNs are classified as community-based nurses. In the Australian General Practice Network survey (2005), there was estimated to be less than 125 PNs in Tasmania working in an estimated 129 general practices (estimated number of PNs nationally 4924).

With the dramatic increase in PN numbers in Australia; largely due to a number of changes within general practice and PHC; practice nursing is believed to have reached a critical point in its evolution (Halcomb et al 2005). This includes such areas as collaboration with other PHC stakeholders. The present PN role however, remains predominantly task orientated rather than team orientated (Halcomb et al 2006), even though collaborative teamwork is supported by both nursing and medical organisations (Watts et al 2004). Effective communication is essential for efficient collaboration (Collins 2005).

A lack of communication opportunities in PHC environments contribute to professional isolation and nurses working in PHC are more likely to be professionally isolated compared to their hospital colleagues because of their site of practice (ADGP 2006). Contact between PNs could prove to be a problem for the same reason. The issue of professional isolation has been recognised as a problem for PNs worldwide (Halcomb et al 2006, Patterson 2000). Scottish PNs when asked about their views about practice nursing included communication as an enabler and barrier to developing the PN role (Scottish Executive Health Department 2004). In Australia, PNs have identified that a lack of support or gaps in support in their workplace, compounds the issue of professional isolation (Department of Health and Ageing 2005). At the Australian Government level, networking and mentoring, which included identifying appropriate ways of communicating with PNs, has previously been recognised as a key opportunity/top priority area (Department of Health and Ageing 2005). Even with this recognition, and the many studies on the role of PNs which have been conducted in Australia since 1967 (Patterson 2000), to date none have looked at appropriate ways and preferences of PNs regarding their communication needs.

Hence there remains a need to further explore the issue of communication needs of PNs, especially as this group of professional nurses: a) are generally isolated from their peers and colleagues compared to those in other nursing environments with distinct nursing hierarchies; b) usually work within a small private business environment; and c) are evolving as an increasingly important PHC professional workforce.

METHOD/METHODOLOGY

Aims and objectives

The primary aim was to determine what the preferred methods of communication were with and between PNs in the state of Tasmania. The secondary aim was to conduct a census on Tasmanian PNs to compare with the 2005 national PN survey (ADGP 2006). The primary objective was to identify the nature, frequency and distribution of the variables of communication, preferred methods, with PNs, between PNs and Tasmania within the sample population. The secondary objective was to compare data on national and state PN trends to determine whether the Tasmanian PN population was comparable and could be defined as representative of the Australian PN population.

Design

A non-experimental, descriptive design using a self-administered, semi-structured, postal survey was deemed the most appropriate data-collection method to address the census and attitude questions of interest. The questionnaire contained 19 questions, divided into three sections, relating to the PNs working environment (Q1-9), communication issues (Q10-14) and personal information (age, gender and nursing qualification) (Q15-17). Both qualitative and quantitative responses were obtained. Nurses were advised it would take approximately 5-10 minutes to complete.

Sample

An attempt was made to identify and survey every PN in the three Tasmanian general practice divisional regions between the 1st of October and the 31st of December 2006. In this study PNs were defined as: (a) a trained registered or enrolled nurse who worked with and for a sole GP/group of GPs in a clinical capacity; and (b) self identified as a PN.

Data collection

Practice Nurses were identified through multiple sources including Division of General Practice databases and regional telephone directories with subsequent telephone contact with each general practice in the state. Questionnaires were sent out to 218 PNs. This number was revised to 197, as 21 nurses or their practices did not meet the inclusion criteria. Two telephone calls were made to non-respondents at 3 and 10 weeks after initial mail-out.

Ethical considerations

This study had approval from the Human Research Ethics Committee (Tasmania) Network, approval number H9014.

Validity and reliability

The questionnaire was initially pilot-tested for format, questions and terminology by a group of experienced and research-orientated PNs not living in Tasmania, who were not directly involved in the study and who worked in various types of practices in varying roles, to get a broad range of feedback. The second pilot testing was conducted by two PNs from the original piloting group and by a number of PHC researchers during three oral presentations during the initial stages of the study.

Data analysis

Simple frequency analysis.

FINDINGS

The response rate was 71% (n=140 of 197), with a regional response rate of North West 77% (n=36 of 47), South 74% (n=57 of 77) and North 64% (n=47 of 73). Little is known about non-responders. The response rate was higher in the North West and South compared to the North. However the North had the highest rate of responders (51%) who stated they were interested in being actively involved in research (questionnaire Q9). The response rates for the other two regions to this question were South 39% and North West 33%. It can be assumed the remaining non-responders were either not interested in being actively involved in this research or they did not respond for some other reason/s unknown. Of the 177 practices contacted 60% (n=107) employed PNs. The main comparison between this 2006 census and the 2005 ADGP survey is shown in Table 1. Table 2 shows the main mode of communication between PNs and the people/organisations that communicated with the PNs in a typical week. Practice Nurses preferred methods of communication with people/organisations outside their working environment are shown in Table 3 PNs general overall preferred methods of communication are shown in Table 4. Many (35%) of the PNs stated they had more than one preferred means of communication with people/organisations they communicated with on a regular basis, as shown by the total of 189 responses shown in Table 3 and responded by giving more than one response to this issue. The issue of preference is explained in the discussion section.

Table 1: Comparing PN demographics- 2006 Tasmanian PN survey (TPNCNS) with the 2005 Australian Divisions of General Practice (ADGP) PN survey

Variable	2006 TPNCNS - Tasmania	2005 ADGP PN survey-Australia
Level of nurse - registered nurse	78%	82%
Age of PNs - aged over 40 years	84%	78%
Gender of PNs - female	98%	99%
PN also having another form of employment	29%	32%
Length of time as a PN- 1-5 years	50%	38%
Been in general practice for more than 20 years	8%	8%
Hours worked by PNs - part-time	77%	82%
Est. no. of PNs in Tasmania	>200	<125 (4924 nationally)
Est. no. of general practices	174	129
Practices employing 1 or more PNs	60%	57%
Survey response rate	71% (n=140 of 197)	89% (n=112 of 126)
Number of practices where PN returned questionnaire	70	73

Table 2: The people/organisations that communicated with the PNs in one week and their method of communication

Organisation/People	Method of Communication	n	(%)
Other health professionals	Telephone	131	(94)
Drug company representatives	In person	103	(74)
Regional divisions of GP	Mail	68	(49)
Medical supplies representatives	In person/Telephone	40	(29)
Pathology companies	Telephone	22	(16)
Chemists/Pharmacists	Telephone	18	(13)
Others	Telephone	17	(12)
Nursing organisations	Mail	10	(7)

Table 3: Practice nurses' preferred means of communication with organisations/people in one week

Method of Communication	n	%
Telephone	63	33.33
Mail	41	21.69
Email	38	20.11
In person	32	16.93
Fax	13	6.88
Mobile telephone	1	0.53
Medical Director (practice computer program)	1	0.53
Total responses	189	100

Table 4: Practice nurses' overall preferred methods of communication

Method of Communication	n	%
Mail to practice	107	14.52
Regional division of general practice newsletter	97	13.16
In person, at local network meeting	85	11.53
Independent practice nurse newsletter	84	11.40
In person, at professional events	75	10.18
Telephone to practice	74	10.04
Email to practice	64	8.68
In person, at state-wide network event	59	8.00
Mail to home	40	5.43
Email to home	26	3.53
Teleconferences	10	1.36
Mobile telephone	10	1.36
Telephone to home	4	0.54
Fax	2	0.27
Total responses	737	100

Table 4 shows that some PNs stated they had more than one (1-9) preferred means of communication as shown by the total of 737 responses to this issue. The most common preferred communication combinations were mail and telephone to the practice they worked at and at professional development sessions, either through their local division of general practice or at other local/state networking events. Also practices that had email access for their PNs also featured strongly. As the question did not relate to intra-practice communication, a correlation between practice size and number of PNs per practice was not done.

DISCUSSION

Nursing is a socially oriented profession, even in the private business environment of general practice, as is shown by Tasmanian PNs preference to communicate with each other in person if time allowed. Practice nurses preferred methods of communication were basically those that are easy, quick, that worked, sometimes allowed them to keep a copy of the communication for future reference (for example, mail) and, most importantly, didn't take them away from direct patient care. All methods of communication were deemed to have both positive and negative aspects. For these reasons, communication by telephone was preferred by the majority (68%) between PNs and other health care organisations/professionals. The remainder preferred communicating in person at all times. The least preferred methods of communication involved using electronic devices such as fax/facsimile, computers and mobile telephones, which may suggest a lack of access or confidence in using such technology in their work environment. The lack of communication or uncertainty about methods of communication between PNs has shown that a small number of PNs in the state may feel professionally isolated from their peers. Most however, did not.

The positive aspects of accessing the whole PN population, was that Tasmania is an island state, covering urban, rural and remote communities and general practices. There are 3 regional general practice organisations representing 563 GPs, with the largely urban South (General Practice South) being the largest, and the North (General Practice North) and North West (General Practice North West) being classified as rural.

Professional development sessions for PNs are provided through the three regional GP organisations held at least monthly allowing some time for networking with each other. Australian PNs have identified that a lack/gaps in workplace support increases professional isolation and external support was necessary for personal and professional development. This survey showed that even with the GP organisations PN network opportunities, over 60% (n=88) of the PNs were interested in being part of an independent state-wide PNs' communication network (South 43%, North 31%, North West 26%). This could this be due to a perceived problem, with a number of PNs noting the need to discuss the issues of pay and working conditions and these organisations also represented their GP employers.

This survey compared general practice and PN profiles with the 2005 national census (ADGP 2006) and showed that PNs in Tasmania were generally comparable with those in the rest of Australia.

Tasmanian PNs, in 2006 were older, worked longer hours and were less likely to be registered nurses. The number of PNs per practice varied by region, where more practices in the Southern and North Western practices had 2 nurses and the Northern practices had 5 nurses. There was a dramatic rise in the total number of general practices in the state in one year (129 in 2005 and 174 in 2006). It has been noted that approximately 95% of practices are members of the Australian General Practice Network (previously known as the Australian Divisions of General Practice), but this is unlikely to account for the 35% increase in number of general practices in the state. The number of PNs and practices which employed PNs/more PNs in Tasmania had also risen. This may suggest the success of government funding of PNs nationally and a recognition of the cost effectiveness of employing PNs. However, this is also unlikely to account for the 74% increase in PN numbers in the state. It can be suggested that this 2006 in depth census gives a more accurate picture of Tasmanian general practice and practice nursing than the previous study conducted by the AGPN/ADGP.

Surveying Australian PNs does not usually produce high response rates. For example, Patterson's study (2000) had a response rate of 55% and was comparable to other Australian surveys; Le Sueur and Barnard, 1993 (response rate=48%) and Bonawit and Watson, 1996 (response rate=46%) (Patterson 2000). This study's good response rate of 71%, was believed to be in part due to: a) providing a teabag in with the questionnaire, thus recognising that PNs are busy people; b) the paper used for the questionnaire and letter of invitation to participate was easily recognisable being printed on bright yellow paper; and c) it was designed and administered by a fellow PN (two PNs stated they were glad the questionnaire was written by a PN, so they didn't need a university degree to complete it).

As a study of this nature has not been conducted before, it merely searched for and collected accurate information/facts and described the variables, of a sample of the Australian PN population regarding preferences in means of communication with other people and organisations, and other PNs. Questionnaires are deemed an appropriate data-collection method for this type of study (Brink et al 2006, pp103). There is a precedent to directly survey PNs to determine their viewpoints, but they have been found to be a difficult group of nurses to access (Patterson 2000). Two questionnaires were returned unopened. The issue of 'filtering' and control of potential PNs' comments to surveys by other practice staff, has been found to be a problem in previous surveys of PNs (Patterson 2000).

CONCLUSIONS

The PNs reported their preferred form of communication depended on who the communicator was and methods that didn't affect their providing patient care; an issue for all PNs regardless of geographical location. It would be possible to make comparisons with other practice nursing populations both nationally and internationally, by sending each PN a simple questionnaire to determine their communication preferences as used in this study.

This study may have the potential to improve communication with and between PNs and other key stakeholders, now the question of communication preferences is out in the wider general practice community and recognition that professional isolation may be a problem for some PNs and support is needed. Results of this study have been sent to key stakeholder organisations to allow for further discussion of this issue (i.e. Tasmanian PN state coordinator to be directed to the three regional general practice divisions; and the PN peak national body the Australian Practice Nurse Association (APNA).

RECOMMENDATIONS

Divisions of General Practice in Australia and PN employers internationally could: a) promote the benefit of PNs meetings to the practices/GPs and PNs; b) ensure PNs have protected time to attend these and other professional development/networking meetings;and c) ascertain local/regional

PNs preferences for these meetings times. Nursing organisations and professional bodies could send all communication by mail.

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Barriers to the reporting of medication administration errors among nursing students

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Acknowledgments
This study was financially supported by Arak University of Medical Sciences of Iran. The authors would like to thank the nursing students at Arak University for participating in data collection.

KEY WORDS

medication errors, barriers, reporting, nursing student

ABSTRACT

Objective
The main aim of this study was to describe the perceived barriers to medication administration error (MAE) reporting among nursing students.

Design
A cross-sectional, descriptive study was conducted using self-report questionnaires. An 18-item barriers to MAEs reporting questionnaire with 6- point Likert-type scale (1=strongly disagree, to 6=strongly agree) was used for this study.

Setting
Three nursing schools at Arak University of Medical Sciences in Iran.

Subjects
Two hundred and forty nursing students were invited through census method.

Main outcome measure
Nursing students' perceived barriers to MAE reporting.

Results
Nursing students estimated 80.12% of all medication errors by nursing students are reported to their instructors. Administrative barrier (standardised mean=4.31) and fear (standardised mean=4.24) were the top two reasons for not reporting medication errors among nursing students.

Conclusions
Findings from this study suggest MAE occurrences among nursing students are often underreported. Nursing student's instructors must demonstrate positive responses to nursing students for reporting medication errors to improve patient safety.

INTRODUCTION

Patient safety is a central concern of current health-care delivery systems. It is an important indicator of health care quality (Benjamin 2003; Kohn et al 1999). MAE are often used as indicators of patient safety in hospitals because of their common incident and potential injury to patients. Study results have indicated approximately one third of adverse drug occurrences are associated with medication errors that are viewed as preventable (Bates et al 1995; Bates et al 1993). Ten to 18% of all reported hospital injuries have been attributed to medication errors (Stetler et al 2000; Hume 1999). Medication errors are caused by many health care professionals, such as physicians, pharmacists; however, nurses are usually placed on the frontline when medication errors occur (Mrayyan et al 2007).

Licensed registered nurses are responsible for the preparation, administration and evaluation of therapeutic responses to medications administered to patients. Assessment of student progress in developing requisite knowledge and skills is fundamental to the safe administration of medication.

Because of students' limited clinical experience, they may be at risk of inadvertently making medication errors associated with medication administration. A logical assumption would be that by administering medications, there is an intention to improve patients' conditions while at the same time avoiding harm. Nursing educators emphasise the seriousness of medication administration and discuss safety strategies in classroom presentations and during clinical supervision (Wolf et al 2006).

Currently, limited research is available on the type and incidence of student made medication errors. These studies indicated that the rate of medication errors among nursing students was high and it may be more frequent than suspected (Wolf et al 2006; Koohestani et al 2008; Koohestani and Baghcheghi 2008; Baghcheghi and Koohestani 2008).

Baghcheghi and Koohestani (2008) conducted an observational study to ascertain the frequency, type and causes of errors made by final year nursing students in intravenous drug preparation and administration. The results of this study indicated that in 372 registered observations, 153 errors were detected, while in 139 cases, at least one error occurred. The most frequent errors in drug preparation and administration was in diluting (2.68%) and inappropriate infusion rates (11.55%), respectively. The most common cause of errors was inadequate pharmacologic knowledge (18.95%).

Harding and Petrick (2008) conducted a three year retrospective review of 77 medication errors made by nursing students in a community college program. The findings of this study indicate that the three categories of contributing factors of medication errors made by nursing students were: rights violations, system factors, and knowledge and understanding. Wolf et al (2006) found the most prevalent cause of student medication errors (51.01%) was student performance deficits. Moreover, there has been concern expressed in the literature as to the adequacy of the content of pharmacology included in present nursing education curricula (King 2004; Manias and Bullock 2002; Morrison-Griffiths et al 2002). For instance, the results of Koohestani and Baghcheghi's study (2008) indicated the most prevalent cause of medication errors made by nursing students was poor pharmacologic knowledge. Poor mathematical skill can contribute significantly to increasing the risk of administration error. Numerous research studies showed nurses and student nurses difficulties with basic mathematical skills and medication calculation abilities (Weeks et al 2000; Hutton 1998; Santamaria et al 1997; Craig and Sellers 1995; Gillham and Chu 1995; Kapborg 1994; Blais and Bath 1992).

When a mistake is made, admitting and promptly reporting the error to an appropriate authority is the 'right thing to do'. This is because hiding errors can have serious adverse consequences at both a practical and a moral level (Johnstone and Kanitsaki 2006). Reporting of MAE is as important as intercepting them for providing valuable information about ‘near misses’ and errors to manage existing errors and prevent future errors (Kohn et al 1999). When hospitals identify medication error trends and problem areas, they can prevent future errors and, therefore, reduce patient harm and injuries (Association of Operating Room Nurses 2004). At the moral level, hiding errors (especially those that are clinically significant) may result in: besides, avoidable harm to patients, the nurse-patient fiduciary/trust relationship is being seriously undermined and, ipso facto, the good standing and reputation of the nursing profession as a whole (notably on account of the agreed ethical and professional practice standards of the profession concerning patient safety reporting requirements) being violated (Johnstone and Kanitsaki 2006).

Reporting medication errors cause to improve patient safety and providing valuable information for prevention of medication errors in the future. Findings of Koohestani et al’s study (2008) indicated that 75.8% of medication errors committed by nursing students (n=76) were reported to the instructor. Assessing nursing students’ viewpoints about barriers to reporting of MAE is a primary step to enhancing of reporting medication errors. Although, past studies have explored barriers to reporting MAE among nurses, no attention has been paid by researchers to MAE reporting barriers among nursing students. This study was designed to address the need for understanding of MAE reporting barriers for nursing students’.

LITERATURE REVIEW

Several survey studies have examined nurses’ perceptions of barriers to reporting of medication administration errors. However, no attention has been paid by researchers among nursing students. Much of the literature regarding the prevention of medication errors among nursing students focuses on teaching strategies for accurately calculating drug dosages.

Nurses are often reluctant to report MAE and as a result they tend to be underreported. The results of Stratton et al (2004) indicated paediatric and adult nurses estimated that 67% and 56% of all MAE in their patient care units were reported, respectively.

Sanghera et al (2007) conducted a qualitative study to explore the attitudes and beliefs of healthcare professionals relating to the causes and reporting of medication errors. Some staff stated they would only report certain errors or errors that resulted in harm. The results of this study indicated barriers to reporting included: not being aware that an error had occurred, the process of reporting (e.g. detailed paperwork), no benefit to reporting (perception that nothing is done with the data) and motivational factors (e.g. fear of loss of professional registration) (Sanghera et al 2007). The basic reasons for not reporting MAE was classified as individual factors and organisational factors (Leape 2002; Uribe et al 2002; Wakefield et al 1996). Fear is one of the primary individual barriers that impede error reporting among nurses. Fear of reprimand from those in authority, disciplinary action (Walker and Lowe 1998), potential reprisal (Karadeniz and Cakmakci 2002; Osborne et al 1999), manager and peer reactions (Mayo and Duncan 2004) and being blamed and lawsuits (Uribe et al 2002) were identified in studies. Studies have indicated that between 63% and 84% of nurses did not report MAE because of negative manager and peer responses (Karadeniz and Cakmakci 2002; Osborne et al 1999).

AIM OF THE STUDY

The aim of this study was to estimate the proportion of medication errors reported by nursing students and describe the perceived barriers to MAE reporting among nursing students. In addition, a secondary objective of this study was to specifically compare the nursing student findings in relation to the semester of the program.

METHOD

Design and Sample

This descriptive cross-section study was conducted during the winter of 2008 using a self-report survey. Statistical population of this study consisted of nursing students enrolled at the Arak University of Medical Sciences in Iran. The sampling criterion was nursing students that have worked in hospital settings for a minimum period of one semester and have been involved in administering medications. All nursing students in their second semester or more, enrolled in three courses at the Arak University of Medical Sciences (n=240), were selected through a census method. Sampling was performed at the beginning of a class by a member of the research team, with no teaching role.

Instrument

The data gathering tool was a questionnaire consisting of three parts. The first section of the questionnaire included background data (gender, age, and semester of program). The second part consisted of four questions regarding medication errors and an estimate of the number of medication errors reported by nursing students to their instructors. The final item asked each participant to estimate the overall proportion of medication errors reported by nursing students. An 11- category response scale was used ranging from 0 to 100%. In the third section nursing students' perceptions of barriers to reporting MAE was measured by the reason why MAE are not reported (Wakefield et al 1996). This questionnaire was translated and back-translated. The content validity of the translated questionnaire was evaluated by seven members of nursing faculty.

Data evaluation

Data was analysed using SPSS at an alpha level of 0.05. Descriptive and correlation analyses were conducted. Data was analysed using independent t-tests, pearson correlation and one-way analysis of variance (ANOVA). One-way analysis of variance followed by Tukey's studentised range (HSD) was used to examine differences in each subscales and total scores mean of barriers to reporting MAE according to one semester of the program.

Ethical consideration

This study was neither mandatory, nor was it disadvantageous in any way for the participants. Identities were anonymous throughout the study. This study was approved by the ethics committee of Arak University of Medical Sciences in Iran.

FINDINGS

Response rate was 100%. The mean age of the participants was 21.71 years (SD 3.2, range 19-27), majority of the participants were female (79.2%).

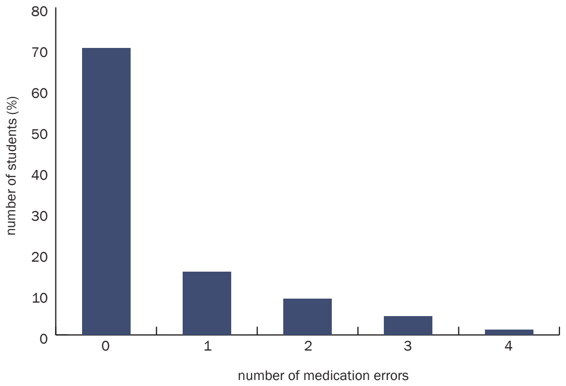
Twenty seven point five percent of participants were second-semester nursing students, 28.5% were forth-semester, 25.8% were sixth-semester and 17.9% were eighth-semester.

Seventy two nursing students (30%) reported making at least one error during their academic period. In total 124 medication errors were made by students and 75.8% of medication errors were reported to the instructor.

The average number of recalled medication errors per student was 1.93.

Numbers of medication errors made by nursing students over the course of their academic period are shown in graph 1.

Figure 1: Number of medication errors among nursing students



Nursing students estimated that 80.12% of all medication errors by nursing students are reported to instructors. Mean and standard deviations of the total scores and sub scores of barriers to MAE reporting are presented in Table 1.

Table 1. Perceived Barriers to MAE Reporting (N=240)

Items	Std M[b]	Group M (SD)	Item M (SD)
Barriers to MAE reporting [a]	**3.93**	**70.75(4.23)**	
Subscales:			
Fear of:	**4.24**	**38.21(2.44)**	
1. Being recognised as incompetent			4.91(0.87)
2. Patient or family's negative attitude			4.64(0.88)
3. Physicians' reprimand			2.93(0.86)
4. Decreasing evaluation score and introducing educational problems			5.34(0.59)
5. Being blamed for MAEs results			4.45(0.85)
6. Instructor's reprimand			5.05(0.66)
7. Side effect of drug			4.22(0.83)
8. Forensic problems			3.64(0.97)
9. Nursing staff 's reprimand			2.98(0.95)
Reporting process	**3.06**	**15.3(2.72)**	
10. Think MAEs not important enough to be reported			4.22(1.33)
11. Too much time for contacting instructor			2.66(0.91)
12. Unclear MAE definition			3.03(0.98)
13. Forget to report			2.35(0.91)
14. Unrealistic expectation for administration of drugs			3.01(1.08)
Administrative barrier	**4.31**	**17.25(1.9)**	
15. No positive feedback			5.12(0.78)
16. Much emphasis on MAEs as nursing quality provided			4.60(0.89)
17. Focus on individual rather than system factors to MAEs			4.66(0.97)
18. Instructors' responses to MAEs do not match the severity of the errors			3.01(1.13)

Note

[a] Range=1(strongly disagree) to 6 (strongly agree)

[b] Standardised mean is mean divided by the number of items

Compared to the standardised mean of each subscale, administrative barrier (standardised mean=4.31) was considered as a major barrier. From the 4-item administrative barriers listed in Table 2, nursing students tended to have the highest level of agreement with "No positive feedback". This item had a mean greater than five; indicating the item "No positive feedback" was located between agree and strongly agree.

The next strongest perceived barriers were fear (standardised mean=4.24). Of the 9-item fear listed in Table 1, nursing students tended to have the highest level of agreement with "fear of decreasing evaluation score and introducing educational problems". Items of the fear subscale with means greater than five: were items four (e.g. decreasing evaluation score and introducing educational problems) and six (e.g. instructor' reprimand).

The weakest perceived barrier was the reporting process (standardised mean=3.06).

Regarding demographic characteristics and personal experiences of medication administration errors, no differences were found in the barriers relating to nursing student's age or gender, also no difference in the barriers were found between nursing students who had experience of making MAE and nursing students who had no such experience.

ANOVA indicated there was a statistically significant difference between the mean of fear and administrative barrier subscales score of barriers to reporting MAE according to semester of the program.

The results of ANOVA followed by the post-hoc Tukey's HSD are presented in Tables 2 and 3.

Table 2: Sub-scale and total score of barriers to MAE reporting among nursing students according to semester of program

	2nd Semester N=66	4th Semester N=69	6th Semester N=62	8th Semester N=43	F ratio	P value
scale	M (SD)	M (SD)	M (SD)	M (SD)		
Fear score	39.48 (2.45)	37.94 (2.53)	37.83 (1.81)	37.22 (2.38)	10.03	.000*
Reporting process score	15.5 (3.37)	15 (2.02)	15.14 (2.74)	15.65 (1.9)	0.75	0.522
Administrative barrier score	16.69 (1.99)	17.23 (1.96)	17.27 (1.73)	18.09 (1.83)	4.72	0.003*
Total score	71.68 (5.17)	70.17 (3.53)	70.25 (3.44)	70.97 (4.57)	1.82	0.143

Note
*significant

Table 3: Differences in Sub-scale and total score in barriers to MAE reporting among nursing students according to semester of program

scale	Tukey's HSD					
	S[a]2-S4	S2-S6	S2-S8	S4-S6	S4-S8	S6-S8
Fear score	n.s	n.s.	*	n.s.	n.s.	n.s
Reporting process score	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Administrative barrier score	n.s.	n.s.	*	n.s.	n.s.	n.s.
Total score	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.

[a] semester
*$P < 0.05$

According to tables 2 and 3, second semester nursing students scored higher than the other three groups of students on the fear subscale score. Eighth semester nursing students scored higher than other three groups of students on the administrative barrier subscale score. All four groups had similar scores on reporting process sub-scales and total score mean.

DISCUSSION

The results of this study have significant implications for the nursing instructors. Thirty percent of the participants reported making at least one error during their academic period. However, in actual fact the frequency of medication errors is likely to be even greater.

In this study, the average number of recalled medication errors per student was 1.93. Results of Mrayyan et al study (2007) showed the mean of recalled errors was 2.2 per nurse. Result of Balas et al study (2004) showed approximately one third of the nurse participants reported making at least one error or near error during a 28-day period.

Twenty four point two percent of medication errors made by nursing students were not reported to their instructor. Such a rate shows medication errors were often underreported by nursing students and this finding is consistent with Koohestani et al (2008) study.

This study showed the overall average estimate of medication error reporting by nursing students was

80.12%. These estimates by nursing students are higher than some studies among nurses reported in the literature (Stratton et al 2004; Wakefield et al 1999; Wakefield et al 1996). Findings of this study suggest nursing students are more likely to report MAE than nurses.

Nursing students agreed that administrative barriers and fear were the main reasons for not reporting medication errors (4.31 administrative barriers, 4.24 fear). Similar findings were also supported in previous studies by using the same study instrument among nurses (Chiang and Pepper 2006; Blegen et al 2004; Wakefield et al 1999; Wakefield et al 1996).

Findings of Stratton et al's (2004) study using a different study instrument indicated nurse respondents agreed with both individual/personal and management-related reasons for not reporting medication errors. Results of this study showed nursing administration's focus on the person rather than the system and the fear of adverse consequences (reprimand) were primary reasons selected for not reporting medication errors.

In this study the strongest perceived barriers to MAE reporting were administrative barriers. Standardised mean of this sub-score was =4.31, indicating the administrative barriers to MAE reporting were located between slight agreement and agreement.

The primary administrative barriers were no positive feedback for giving medication correctly and too much emphasis on MAE as a quality indicator of nursing care. These barriers indicated instructor's management and attitudes toward MAEs.

These results suggested if medication errors are used as an indicator of an individual's performance or in a punitive manner, nursing students may be reluctant to report their own errors. Findings also suggest nursing students have no tendency to accept responsibility for errors in which they were the final player in a complex series of events leading to the error.

The next strongest perceived barrier was fear. Standardised mean of this sub-score was =4.24, indicating the fear subscale was located between slight agreement and agreement. The primary barriers this sub-score were decreasing evaluation score and introducing educational problems, instructor's reprimand, being recognised as incompetent. Compared to the standardised mean of all items, fear of decreasing evaluation score and introducing educational problems was considered as a major barrier. These results suggested nature of the instructor's response to errors is an important factor to reporting MAEs among nursing students.

It has been suggested that punishment has little effect on future error prevention (McCarthy et al 1992).

The weakest perceived barrier was the reporting process. Standardised mean of this sub-score was =3.06, indicating the reporting process subscale was located between slight disagreement and slight agreement. In the reporting process, however, respondents indicated they somewhat agreed with "think MAEs not important enough to be reported"(item mean=4.22).

Overall, research has demonstrated nursing students will report errors, but the likelihood of reporting errors is influenced by the perceived punitive climate of the instructor or organisation. This study's findings suggest comprehensive strategies are required to improve medication safety and to promote reporting of medication errors among nursing students.

Limitations

As nursing students were selected in only three nursing schools in Arak University of Medical Sciences, the results are not generalised to all Iranian nursing students. Nursing students' perceptions of barriers to MAE reporting might vary from city to city, even if nursing students' demographic characteristics are similar.

Implications for nursing education

Nursing faculty might consider the medication administration experiences and reporting of medication errors of students and medication safety in light of these findings. Also, nursing faculty might reconsider their feedback to nursing students for reporting medication errors. Recognition of reasons for not reporting MAE among nursing students is crucial to determining interventions that support reporting of all errors, including those related to medication administration. The most important step in decreasing medication errors appears to be in knowing the accurate rate of occurrence. Occurrence data can only be used to identify problems and develop solutions provided it is a true reflection of the type and number of medication errors that occur. Accuracy can only be improved in an environment that encourages and supports the reporting of medication errors.

An important finding in this study was of the 18 items, nursing students tended to have the highest level of agreement with fear of decreasing evaluation score and introducing educational problem was a major reason selected for not reporting medication errors. This result is very important and has significant implications for the nursing student's instructors.

Clinical nursing work is carried out in situations that are largely unpredictable and clinical experience of students is inadequate thus, nursing students run the risk of 'doing something wrong'. Creating an environment encouraging to the reporting of errors requires a systems approach to patient safety. Nursing student's instructors must demonstrate positive responses to nursing students for reporting medication errors and commit to a quality management process that is perceived by nursing students as designed to improve patient safety as opposed to discover mistakes.

It is important for the nursing instructor to accept mistakes made by nursing students may be the product of 'system flaws, not character flaws' and students who make mistakes are not necessarily poor students. In addition some causes of medication errors are multifactorial, for example deficient knowledge could be due to a failing on the part of the individual. However, it could also be due to a 'systems' failure on the part of educational program by not adequately preparing the student for their role. It should be highlighted that this does not mean individuals should never be held accountable for their actions, but it accentuates it is also important to try to take a more holistic view as to why errors occur. Instead of viewing error reports and complaints as a reason to name and shame individuals, they need to be considered as 'learning treasures'- that is, as valuable opportunities to learn and to improve medication safety.

CONCLUSION

Findings from this study suggest medication administration error occurrences among nursing students are often underreported. Administrative barriers and fear were found to be the top two reasons for not reporting medication administration errors among nursing students.

Significantly this study found, fear of decreasing evaluation score and introducing educational problems was found to be the highest rated primary individual barriers that impede error reporting among nursing students.

It was found instructors must demonstrate positive responses to their nursing students for reporting medication administration errors as a means to improve patient safety.

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Pursuing the golden mean - moral decision making for precarious newborns

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Acknowledgement
The author would like to thank the following people for their helpful suggestions and input: The midwifes from the South Australian neonatal midwifery association who invited me to speak at their annual meeting, Ian Ravenscroft, and anonymous reviewers for this journal.

Please note
The details of the Messenger case included in this paper are a part of the public record.

KEY WORDS

moral decision-making, formal process, precarious newborns

ABSTRACT

Objective
To demonstrate a need, and develop a process, for moral decision making regarding precarious newborns.

Setting
The Neonatal Intensive Care Unit (NICU).

Primary argument
This paper argues that it is imperative for healthcare institutions to develop a formal process of ethical review for decision making regarding precarious newborns. Broadly, precarious newborns are those that fall into the following two categories:

i. babies with congenital anomalies which are either life threatening or which pose a risk of significant morbidities; and

ii. extremely premature babies who are otherwise physically normal.

After identifying some of the reasons why decision making regarding these infants is particularly fraught, some examples are used to draw out the problems which arise in the absence of a formal decision making process.

Conclusion
Aristotle's metaphor of the golden mean provides a framework for a moral decision making process which can be beneficially utilised in complex cases involving precarious newborns. The decision making process advocated in the paper is briefly characterised as a cooperative discursive one, based on inclusive representation and underpinned by core ethical principles such as non-maleficence, beneficence, justice, and transparency.

INTRODUCTION

For many neonates cared for in the NICU what constitutes their best interests is not a point of contention. Hence, moral decision making regarding these neonates is reasonably straightforward. However, there exists a group of neonates in the NICU, namely, precarious newborns, for whom a determination of their best interests is not all together clear. Consequently, moral decision making regarding these neonates poses a significant challenge for families and staff. The term *precarious newborn* refers to those newborns who fall into the following two broad categories:

1. Babies with congenital anomalies which are either life threatening or which pose risk of significant morbidities.
2. Extremely premature babies who are otherwise physically normal.

Obviously there will be infants who fall across the two categories. What is needed is a process of moral decision making for these newborns. As will be argued, Aristotle's metaphor of the golden mean provides a framework for such a process.

DISCUSSION

According to the ancient Greek philosopher Aristotle, moral virtue:

> is a mean between two vices, one of excess and the other of deficiency... For this reason it is a difficult business to be good; because in any given case it is difficult to find the midpoint—for instance, not everyone can find the centre of a circle; only the man who knows how. So too it is easy to get angry—anyone can do that—or to give and spend money; *but to feel or act towards the right person to the right extent at the right time for the right reason in the right way*—that is not easy, and it is not everyone that can do it. Hence to do these things well is a rare, laudable and fine achievement (Aristotle Nicomachean Ethics, Book Two).

The place where decision makers get it 'right' is the golden mean. The golden mean is, however, more of a metaphor than a blueprint for moral decision making[1] and action. Aristotle did not intend ethics to be a matter of finding the exact midpoint between two extremes. Rather, he thought ethics was about finding the right point, which admittedly usually entailed avoiding extremes, but was also typically different for each situation. Nuances and details mattered for Aristotle.

Whilst Aristotelian moral theory is not fully embraced in this paper, two points which Aristotle makes in the above passage warrant emphasis:

i. moral decision making is not easy; and
ii. not everyone can do it.

The latter point has often been criticised as elitist. However, a non-elitist and more helpful point can be drawn out, namely, that complex moral decision making in healthcare can rarely be done solo—input from others is needed.

In the present context, *moral decision making* does not mean the day to day living of a moral life. Rather, it refers to that process which begins at a place of uncertainty and moves via deliberation towards clarification and resolution. This kind of moral reasoning is demanding and requires a process of active and purposeful engagement based on background evidence, situational particulars, and general ethical principles. This is why it is difficult to pursue solo, because in general no one person will have complete command of all these aspects.

Moral decision making regarding precarious newborns is particularly fraught for three reasons, namely, it involves making decisions:

1. on behalf of someone else—the precarious newborn;
2. about a member of a very vulnerable group in which great hope and expectation for the future has been invested; and
3. under conditions of considerable medical uncertainty—we often lack information about the outcome for these infants.

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[1] The term 'golden mean' comes from the Latin poet Horace. See Blackburn 1994 p235.

Given these three difficulties, how are moral decision makers to proceed? To pursue this question it will be useful to begin with a tragic example of how moral decision making should not proceed.

On the morning of February 8, 1994, Traci Messenger, wife of dermatologist Gregory Messenger, went into premature labor at 25 weeks gestation. Paediatricians John Lantos and William Meadow provide the following details of the Messenger's case.

> That morning and afternoon her obstetrician administered various drugs to try and slow or stop labor... At 6.30 p.m., Dr Padmani Karna from the NICU staff told the Messengers that the child, at this age, had a 30-50 percent chance of surviving but a 90 percent chance of developing intracranial bleeding if it survived, risking some degree of mental and physical handicap. The Messengers at that point instructed Dr. Karna that they did not want the baby resuscitated after birth or placed on intensive life support.
>
> Dr Karna later stated that her reply to this instruction from the parents was something like, "Well, we'll see". She apparently felt that she had indicated to them that she was unwilling to consent to the non-resuscitation plan without at least evaluating the baby after birth. The Messengers, from their point of view, assumed she had agreed with them not to resuscitate.
>
> At 11.38 pm, Michael Messenger was delivered by caesarian section, weighing 1 pound, 11 ounces (770 grams). The infant was brought to the NICU and placed on a ventilator.
>
> At 12.10 am Dr Messenger went to the NICU and was surprised to learn that his son had been placed on intensive life support. At 12.40, Ms Messenger arrived from the recovery room and the Messengers asked to be left alone with their son. Shortly after this request was granted, Dr Messenger unhooked the ventilator. Alarms sounded but no NICU staff intervened to try to put the infant back on the ventilator and the baby died (Lantos and Meadow 2006 p103).

As Lantos and Meadow note, the case ended up in the criminal court with Dr Messenger charged with manslaughter. So what went wrong here? Obviously quite a lot, but it will be useful to draw out a few salient points.

Firstly, there was a lack of background evidence informing the Messenger's decision. The decision was made on minimal empirical data, namely, that a child of 25 weeks gestation at this time had a 30-50% chance of survival, a 90% chance of developing intracranial bleeding if it survived, and a risk of some degree of intellectual and physical disability.

In addition to a lack of more detailed medical information, it would appear there was little or no consideration of the normative (value) aspects of the situation. Whilst the Messengers were told their son had a risk of some physical and intellectual disability, there was no discussion as to what this would actually mean. The scope and implications of an unspecified risk of some degree of intellectual and physical disability for premature infants is vast as was demonstrated by the EPICure study which looked at outcomes for different gestational ages (Costeloe et al 2000). For example, at the time of the study, for 22 weeks gestation, disabilities ranged from mild to severe, and for 25 weeks gestation, disabilities ranged from none to severe. Disabilities within each category were also fairly broad in scope. The category of mild disability included minor learning problems and impairments such as squints. Severe disability could result in high dependence on caregivers and involve one or more of the following symptoms: cerebral palsy which prevented walking, an IQ score considerably lower than average, profound sensorineural hearing loss, and blindness.

The impact on families and particular affected individuals from disability is also highly variable. Disability activists are therefore rightly concerned that there is a general misapprehension that people with moderate or greater physical and intellectual disabilities cannot lead lives of quality (Parens and Asch 1999)[2]. Yet views about quality of life have a

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[2] See also the papers in Journal of Intellectual Disability Research 2003, 47(7) special issue on ethics.

large subjective or personal component. There are probably as many versions of the good life as there are people, and what constitutes a good life, or a life of quality, will in part depend upon individual preferences, desires and capabilities. For example, what constitutes a good life for an artist will be quite different from that of a top level athlete—although there will be commonalities such as adequate food, shelter, comfort, company and so on (Doyal 1998). Indeed, as Meeberg notes, it is important to acknowledge both the subjective and objective components of quality of life (Meeberg 1993).

Most people who work or live with children or adults with an intellectual or physical disability attest to the fact that the disability in and of itself does not necessarily preclude the person from living a life of quality (McIntyre et al 2004). What is often considered far more disabling are adverse social attitudes and inadequate resources. In a recent study in which mothers of children with disabilities were interviewed, researchers found that mothers reported their child did have a good quality of life. One mother of a 24-year old woman who was living away from the family home noted that her daughter was "very comfortable and very happy where she is. She loves going on field trips" (McIntyre et al 2004 p139). The mother of a 22 year old son living at home said that:

> Considering his disabilities, his quality of life is the best it can be. He's healthy now. He's home all the time and not stressed out. He's pretty content. That's the biggest issue for me (McIntyre et al 2004 p139).

Commenting on the quality of life of her 23 year old daughter, another mother remarked that:

> I like to think she has her highest potential quality. She's very happy, she doesn't complain, she's well taken care of and well groomed with nice clothes (McIntyre et al 2004 p139).

Yet regardless of whether or not one believes that physical and intellectual disability is compatible with a good quality of life, these normative issues need to be specifically discussed with families of precarious newborns given it is concerns about quality of life for the child and wider family which underpins a great deal of moral decision making regarding these newborns.

Perhaps one of the most famous uses of a quality of life argument was that articulated by the parents of Baby Doe. Baby Doe was born with Down Syndrome and a congenital blockage of his oesophagus which made it impossible for him to feed. At the time, surgery to correct this condition was relatively routine and successful. However, the parents refused to authorise surgery, appealing to quality of life considerations. They argued surgery was not justified as their child would not be able to live a life of quality. In an attempt to have the parents' decision overridden, the hospital filed an emergency petition with the court.

Reporting on the case, legal theorist Alan Meisel noted that:

> The parents felt that a minimally acceptable quality of life was never present for a child suffering from such a condition, and further it was not in the best interests of the infant, their other two children and the family entity as a whole for the infant to be treated. The hospital in which the baby was born filed an emergency petition seeking to have the parent's refusal of surgery overridden (Meisel 1989 p436).

The petition did not succeed and the baby died. The problem however can cut both ways. There are cases where parents assume their child will significantly lack quality of life as in the Baby Doe case, and cases where parents either dismiss the relevance of or refuse to really take on board quality of life considerations, insisting upon active curative treatment in cases where such treatment is futile and arguably not in the child's best interests. These latter kinds of cases can lead to conflict between families and the healthcare institution providing care. Due to legal frameworks, concern for the family's well-being, and worries about adverse media attention, most healthcare institutions struggle with parent's insistence on active treatment in cases of futility.

A second concern with the Messenger case is that the parents engaged in solo decision making in what is arguably one of life's most tragic and distressing events, namely, the death of one's child. Charles Darwin remarked thirty years after the death of his young daughter Annie that:

> ''The death of a child where there is a bright future ahead causes grief never to be wholly obliterated'' (Desmond and Moore 1991 p655).

Darwin's remark is born out by a fairly recent study in Denmark which looked at mortality rates in parents after the death of a child. The study looked at 21,062 parents in Denmark who had a child who had died during the period 1980 to 1996, plus 293,745 controls—parents whose children were alive and whose family structure matched those of the bereaved group.

The researchers noted:

> Bereaved mothers were more likely to die from natural and unnatural causes, respectively, than were mothers whose child had not died... Bereaved mothers were at an increased risk of death from unnatural causes throughout follow-up, but especially during the first 3 years. We also noted a significantly increased mortality rate from natural causes in mothers, but only in the 9th-18th year of follow-up. For bereaved fathers, we observed a significantly increased rate of mortality only from unnatural causes and only in the first 3 years of follow-up...
>
> Our data indicates the death of a child is associated with an overall increased mortality in mothers, and a slightly increased early mortality from unnatural causes in fathers (Li et al 2003 p365).

The data refers to mortality, not morbidity, nonetheless, the effects on the general health of this cohort—depression and anxiety, amongst other things—are likely to be significantly correlated. The study confirms a broadly held intuition, namely, that the death of a child has a very physical and adverse impact on parents' lives.

This empirical data underscores the moral imperative of initiating and actively involving and supporting parents in a decision making process regarding their precarious newborn. Such a process, if properly constructed, is more likely to result in a *resilient decision* (Zutlevics 2008 p374-376). That is, a decision that both parents and clinicians can look back on and say, "*Even if a different decision would be made now, at the time the best one possible was made".*

Decisions arrived at with insufficient information and discussion will often lack resilience and lead to future problems. Such was the tragedy of the Messenger case. A year after the death of their child, Dr Messenger sued the hospital and the doctors claiming that "the information they had given him about the baby's chances for survival was misleadingly pessimistic and if he had been given accurate information he never would have disconnected the baby's ventilator" (Lantos and Meadow 2006 p104). Indeed, the Messenger case underscores a need for a more formalised process of moral decision making to support parents and staff. The Messengers were considerably more medically informed than many families faced with difficult decisions in the NICU. Nonetheless, their case would have benefited from the implementation of a formal process. Medical facts were not all that was relevant to this case; at stake were also values.

What was lacking here is a dedicated process for ethical decision making. Had Dr Messenger not been a medical professional it is arguable that staff would have reconnected the baby to the ventilator. Had this occurred, whilst the outcome would have likely been very different, it would still not have been the result of a robust moral decision making process.

In a busy healthcare institution the majority of ethical and medical dilemmas cannot be preempted; they tend to arrive on fairly short notice. In a time poor situation, the focus is on the medical issues with many of the more normative concerns been given little or no formal or specific discussion. Assembling a group together at short notice to address these concerns is extremely difficult when there exists no prior framework for doing so. Ethical decision making in such cases typically requires careful consideration of information from a range of clinicians and health professionals. Obtaining relevant reports takes time as does careful consideration of the ethical implications of such reports. Healthcare institutions therefore need to proactively develop frameworks and processes for addressing the ethical complexities of cases as a first step towards resilient ethical decision making.

The details of a resilient decision making process for complex ethical cases and dilemmas needs further elaboration. I have developed such an approach in greater detail elsewhere so will only sketch the main ideas here (Zutlevics 2008). The process can be broadly characterised as a cooperative discursive one, based on inclusive representation and underpinned by core ethical principles such as non-maleficence, beneficence, justice, and transparency. The core features of this process are therefore:

1. Ample time (where possible).
2. A diverse and inclusive group of moral decision makers who have an equal opportunity to contribute to the discussion informing decision making.
3. Adequate empirical/medical knowledge.
4. Rational and principled decision making.

The process of resilient decision making can be formalised via a dedicated clinical ethics committee. Such a committee would have broad representation. In a recent paper Breier-Mackie and Newell argue for the need to provide a more balanced approach to decision-making in healthcare by including the views of nursing staff along side that of medical staff (Breier-Mackie and Newell 2002 p30-31).This is correct, however the point needs to be taken further. Clinical ethics committees need to be constituted by nursing, midwifery, medical and allied health staff, together with staff with legal expertise, an ethicist and lay members. The role of the committee would be to discuss and advise on moral dilemmas in collaboration with families, NICU staff, and cultural or religious representatives where appropriate.

It bears noting that in cases of moral and medical dilemma families are understandably highly anxious and concerned about their baby, and would therefore not necessarily welcome direct contact with an ethics committee. Flexibility is important here and it should be made clear to families that their degree of involvement with such a committee would be solely determined by themselves. Hence, some families may choose to meet with the committee or its representatives, whilst others may choose to avoid any direct contact. This process removes the burden of solo decision making, maximises the chance that all aspects of the case will be considered, and acknowledges the Aristotelian point about the complexity and difficulty of moral decision making. If conducted well, the considerable burden on families, and indeed staff, engaged in decision making at a very vulnerable time can be lightened.

It is useful at this stage to discuss another example. Consider the case of a term newborn who shortly after birth is diagnosed with a serious autoimmune condition. The condition is extremely rare and most affected children die within the first or second year of life. Quality of life becomes increasingly poor with children suffering from severe malabsorption and serious infection. Whilst the condition is fatal, life can be prolonged by an intense treatment regime. Hence, two treatment options exist for babies with this condition, namely, a palliative care approach or active treatment aimed at prolonging life rather than cure. If a palliative care approach was chosen, the baby would die peacefully within a few days. Active treatment involves aggressive management of symptoms with a complex drug regime, TPN, and increasing levels of life support. The burden on parents faced with such a decision is immeasurable. In reaching a decision parents must weigh up various normative considerations together with complex medical facts. The legality of withdrawing active treatment within a particular state legislative system, the burden of treatment and level of pain and distress for the child, the possibility and benefit of developing meaningful relationships with significant others if active treatment was followed, and cultural and/or religious issues are all factors which would need to be taken into account when considering the best interests of the child. Clearly, both staff and parents would benefit from the support of a formal decision making process which goes beyond the medical facts of the matter.

CONCLUSION

The golden mean is not a place, a point in the middle, but rather the outcome of a process underpinned by general ethical principles, guided by empirical data, and arrived at by a diverse group of decision makers. Institutions wanting to support families and staff in their deliberations about ethically complex cases should develop a formalised process for moral decision making. Such a process will increase the likelihood that decision making regarding precarious newborns will encompass all relevant considerations and hence be resilient.

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The psychosocial needs of families during critical illness: comparison of nurses' and family members' perspectives

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KEY WORDS

critical care, family needs, CCFNI

ABSTRACT

Objective
To explore the needs of relatives whose family member is unexpectedly admitted to an Intensive Care Unit and compare ranked need statements between family members and nurses.

Design
This is a descriptive study using the Critical Care Family Needs Inventory (CCFNI) to measure, rank and compare a series of need statements.

Setting
An Intensive Care Unit (ICU) in regional Victoria, Australia.

Subjects
A convenience sampling strategy was used to acquire a total of 58 participants; 25 family members of patients unexpectedly admitted to the ICU and 33 nurses.

Results
Comparative analysis of the data revealed that there were minor differences identified in the rank order of the need statements listed in the CCFNI amongst nurses and family members. A comparison with previous studies also identified minor differences in both the rank order of individual need statements and the five factor analysis categories previously established.

Conclusion
The CCFNI continues to be a good diagnostic tool in family needs assessment.

INTRODUCTION

The impact of an admission to an Intensive Care Unit (ICU) is often traumatic for the family members of the patient and may result in a crisis within the family. As these events do not occur regularly, individuals are overwhelmed by their experience of the ICU and often consider this encounter with a negative outcome such as death (Herman 1992). Critical illness frequently occurs without warning, pushing families beyond what is considered the 'normal' realm of coping and leading to the experience of trauma and crisis within the family (Daley 1984).

It is not unusual for each family member to be personally affected by his or her experience of critical care. Their own health and well-being may be affected by their emotional and psychological experiences of the intensive care environment and the impact can be directly related to the amount of support they receive in relation to these needs from staff in ICU.

It has previously been established (Davidson 2009; Hinkle et al 2009; Agard and Harder 2007; Eggenberger and Nelms 2007; Damboise and Cardin 2003; Delva et al 2002; Lee et al 2000; Hickey and Leske 1992; Koller 1991; Macey and Bowman 1991; Coutu-Wakulczyk and Chartier 1990; Forrester et al 1990; Chartier and Coutu-Wakulczyk 1989; Lynn-McHale and Bellinger 1988; O'Neill-Norris and Grove 1986) that families have some basic needs that must be met in order for them to cope better with the admission of their relative to ICU. These needs include (a) information, (b) reassurance, (c) support and (d) the ability to be near the patient (Damboise and Cardin 2003).

Over the years the issue of understanding family needs has received significant research attention in the nursing field, yet some four decades after Molter (1979) initially investigated this topic, the issue of understanding family needs still remains important. There are two dimensions to this: (1) family members' perception of needs when visiting ICU and (2) nurses' perception of family needs. This paper sets out to identify if the perception of family need held by nurses had changed over the years and whether the perception of need was representative of the current needs of family members visiting ICU.

METHOD

Data was collected over six months in a regional Victorian hospital. Family members of patients unexpectedly admitted to the ICU and nurses were interviewed. Unlike previous studies family members faced no restrictions on visiting hours.

Molter (1979) developed the Critical Care Family Needs Inventory (CCFNI) which utilised 45 need-based questions and focused on determining how family members felt about emotional and physical issues and the type of information they required to help them understand the care needs of their relative.

Previous studies have established readability (Macey and Bouman 1991; Gunning Fox Index = 9.0 = ninth grade reading level), reliability (Leske 1991; including internal consistency [Cronbach's (α) Alpha coefficient of 0.90] and test-retest reliability) and overall validity of the CCFNI. In addition, the CCFNI has been deemed as valid, reliable and readable in a number of cross cultural studies (Takman and Severinsson 2006; Lee and Lau 2003; Lee et al 2000; Bijttebier et al 2000; Coutu-Wakulczyk and Chartier 1990).

For the purpose of this study, changes suggested by O'Neil-Norris and Grove (1986) and Macey and Bouman (1991) were made to the CCFNI. In addition, 'To be told the truth even if it is distressing' was added. Previous research indicated that families wanted to 'feel the need for hope' but at the same time, they want questions answered honestly. This additional question was designed to determine if hope would remain a priority in the face of often distressing news.

Relatives of ICU patients were eligible to participate if the patient was unexpectedly admitted to the ICU and had been in ICU for at least 48 hours. For the purposes of the study 'relatives' were defined as those related by blood or marriage or were a friend of the patient, able to read to year nine level and aged over 18 years. There were no restrictions on participation of nurses working in ICU. Self administered information packs including the CCFNI, a Plain Language Statement, Demographic Questionnaire and Consent Form were provided to family members and nursing staff.

Epicalc 2000 version 1.02 (Gilman and Myatt 1998) was used to calculate the difference between two means, together with a 95% confidence interval, a t-statistic, and p-value. Ethics approval was granted by both the participating hospital Research and Ethics Committee (RAEC) and associated University RAEC.

FINDINGS

Seventy eight percent (25/32) of eligible families participated. There was an uneven gender spread (3 male, 22 females) and the relationship of family participants to the patient included spouses, mothers and friends. The age range of family participants was 34 - 71 years. Academic qualifications of family participants varied from primary school level to a post graduate university degree.

The participation rate for ICU nurses was 69% (33/48). Employment varied between full and part time and experience varied from clinical nurse specialists, associate and unit nurse managers to division one and two nurses. Years of experience in nursing ranged from four to 28 years, whilst experience in ICU nursing ranged from one to 22 years, with the majority of nurses having completed the ICU certificate[1].

Participants were asked to rank each question from the CCFNI on a Likert scale of one not important, two slightly important, three important and four very important. The means, standard deviations and difference of means between the nurses and family for the 43 questions in the CCFNI are shown in Table 1. The comparison of the ranked means is important as it demonstrates the compatibility of ranking in terms of importance across both groups.

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[1] The ICU nursing certificate is a post-graduate diploma requiring 12 months intensive study in the area of critical care. There are no specific requirements for enrolling in the diploma, however 12 months experience post graduation is preferred.

Table 1: CCFNI Items, Means and Standard Deviations for Family and Nurses

Question	Family (n=25) Mean [S.D.]*	Nurses (N=33) Mean [S.D.]*	Difference in mean [95% C.I.]^	P Value
To know the expected outcome.	3.84 [.374]	3.64 [.549]	0.20 [-0.06, 0.46]	0.12
To have explanations of the environment before going into the critical care unit for the first time.	3.28 [.678]	3.27[.452]	0.01[-0.29, 0.31]	0.94
To talk to the doctor every day.	3.60 [.645]	3.21[.696]	0.39 [0.03, 0.75]	0.03
To have a specific person to call at the hospital when unable to visit.	3.04 [.978]	2.61 [.659]	0.43 [-0.00, 0.86]	0.05
To have questions answered honestly.	4.00 [.000]	4.00 [.000]	0.00 [0.00, 0.00]	1
To talk about feelings about what has happened.	3.12 [.881]	3.36 [.603]	0.24 [-0.15, 0.63]	0.22
To have good food available at the hospital.	3.16 [.943]	2.48 [.795]	0.68 [0.22, 1.14]	<0.01
To have directions as to what to do at the bedside.	3.00 [.866]	2.97 [.637]	0.03 [-0.37, 0.43]	0.87
To visit at any time.	3.88 [.440]	3.33 [.736]	0.55 [0.22, 0.88]	<0.01
To know which staff members could give what type of information.	3.28 [.792]	2.91 [.914]	0.37 [-0.09, 0.83]	0.11
To have friends nearby for support.	3.20 [.866]	3.21 [.696]	0.01 [-0.40, 0.42]	0.96
To know why things were done for the patient.	3.72 [.542]	3.70 [.467]	0.02 [-0.25, 0.29]	0.88
To feel there is hope.	3.80 [.408]	3.13 [.806]	0.67 [0.32, 1.02]	<0.01
To be told the truth even if it is distressing.	3.68 [.690]	3.82 [.465]	0.14 [-0.16, 0.44]	0.36
To know about the types of staff members taking care of the patient.	2.88 [1.054]	2.67 [.692]	0.21 [-0.25, 0.67]	0.36
To know how the patient is being treated medically.	3.64 [.569]	3.52 [.566]	0.12 [-0.18, 0.42]	0.42
To be assured that the best care possible is being given to the patient.	3.80 [.577]	3.91 [.292]	0.11 [-0.12, 0.34]	0.34
To have a place to be alone while in the hospital.	2.60 [1.118]	2.82 [.882]	0.22 [-0.31, 0.75]	0.4
To know exactly what is being done for the patient.	3.72 [.458]	3.64 [.549]	0.08 [-0.19, 0.35]	0.55
To have comfortable furniture in the waiting room.	2.68 [.802]	2.79 [.600]	0.11 [-0.26, 0.48]	0.55

Table 1: CCFNI Items, Means and Standard Deviations for Family and Nurses, *continued...*

Question	Family (n=25) Mean [S.D.]*	Nurses (N=33) Mean [S.D.]*	Difference in mean [95% C.I.]^	P Value
To feel accepted by hospital staff.	3.60 [.500]	3.21 [.781]	0.39 [0.03, 0.75]	0.03
To have someone to help with financial problems.	2.84 [.898]	3.18 [.769]	0.34 [-0.10, 0.78]	0.12
To have a telephone near the waiting room.	3.00 [.978]	3.27 [.674]	0.27 [-0.16, 0.70]	0.21
To talk about the possibility of death.	3.52 [.918]	3.61 [.556]	0.09 [-0.30, 0.48]	0.64
To have another person with you when visiting the critical care unit.	2.84 [1.068]	2.73 [.876]	0.11 [-0.40, 0.62]	0.66
To have someone be concerned with your health.	2.56 [1.003]	2.88 [.781]	0.32 [-0.15, 0.79]	0.17
To be assured it is alright to leave the hospital for awhile.	2.96 [1.060]	3.42 [.708]	0.46 [-0.01, 0.93]	0.05
To talk to the nurse caring for my relative everyday.	3.68 [.557]	3.61 [.556]	0.07 [-0.23, 0.37]	0.63
To be encouraged to express emotions.	2.68 [.998]	3.12 [.600]	0.44 [0.02, 0.86]	0.04
To have a bathroom near the waiting room.	3.00 [.913]	3.00 [.661]	0.00 [-0.41, 0.41]	1
To be alone at any time.	2.12 [1.013]	2.58 [.936]	0.46 [-0.06, 0.98]	0.07
To be advised of support services who can help with problems.	3.52 [.653]	3.42 [.663]	0.10 [-0.25, 0.45]	0.56
To have explanations given that are understandable.	3.80 [.500]	3.82 [.392]	0.02 [-0.21, 0.25]	0.86
To have visiting hours start on time.	3.13 [1.076]	2.94 [.892]	0.19 [-0.33, 0.71]	0.46
To be told about pastoral services.	2.28 [.936]	2.88 [.857]	0.60 [0.13, 1.07]	0.01
To help with the patient's physical care.	3.24 [.723]	2.64 [.699]	0.60 [0.22, 0.98]	<0.01
To be told about transfer plans while they are being made.	3.60 [.500]	3.27 [.761]	0.33 [-0.02, 0.68]	0.06
To be called at home about changes in the patient's condition.	3.80 [.408]	3.73 [.517]	0.07 [-0.18, 0.32]	0.57
To receive information about the patient at least once a day.	3.64 [.569]	3.70 [.467]	0.06 [-0.21, 0.33]	0.66
To feel that the hospital personnel care about the patient.	3.88 [.332]	3.82 [.392]	0.06 [-0.14, 0.26]	0.54
To know specific facts concerning the patient's progress.	3.88 [.332]	3.64 [.603]	0.24 [-0.03, 0.51]	0.07
To see the patient frequently.	3.84 [.374]	3.48 [.619]	0.36 [0.08, 0.64]	0.01
To have the waiting room near the patient.	3.24 [1.052]	3.30 [.684]	0.06 [-0.40, 0.52]	0.79

*Standard Deviation
^95% Confidence Intervals

Table 2: Five Most important CCFNI Items needs as identified by Family Members and Nurses

Question	Description	FAM Mean	NUR Mean
5	To have questions answered honestly.	4.00	4.00
9	To visit at any time.	3.88	----
40	To feel that the hospital personnel care about the patient.	3.88	3.82
41	To know specific facts concerning the patient's progress.	3.88	----
1	To know the expected outcome.	3.84	----
42	To see the patient frequently.	3.84	----
17	To be assured that the best care possible is being given to the patient.	----	3.91
14	To be told the truth even if it is distressing.	----	3.82
33	To have explanations given that are understandable	----	3.82

The five needs identified as being of the highest importance to nurses and family are shown in Table 2.

Families ranked 77% and nurses ranked 70% of the total need statements either important (3.00) or very important (4.00). The majority of the lower ranked needs by family are those that pertain to family members own personal requirements (see Table 3) and show that families prefer the ICU staffs' attention focused on the patient's care.

Table 3: Five Least Important CCFNI Items Needs as Identified by Family Members and Nurses

Question	Description	FAM Mean	NUR Mean
31	To be alone at any time.	2.12	2.58
35	To be told about pastoral services.	2.28	----
26	To have someone be concerned with your health	2.56	----
20	To have comfortable furniture in the waiting room.	2.68	----
29	To be encouraged to express emotions.	2.68	----
7	To have good food available at the hospital.	----	2.48
4	To have a specific person to call at the hospital when unable to visit.	----	2.61
36	To help with the patient's physical care.	----	2.64
15	To know about the types of staff members taking care of the patient.	----	2.67

Nurses ranked the need 'to help with the patient's physical care' as a less important need than the family (mean dif = 0.60 [95% C.I. 0.22, 0.98], P <0.01). The family have a need, which is identified by nurses 'to have questions answered honestly' (mean dif = 0.00 [95% C.I. 0.00, 0.00] P = 1). Families also need 'to visit the patient at any time' (mean dif = 0.55 [95% C.I. 0.22, 0.88], P<0.01) and 'to know the expected outcome' (mean dif = 0.20 [95% C.I. -0.06, 0.46], P=0.12). Families also ranked the need 'to feel there is hope' as more important than the nurses ranking for this item (mean dif = 0.67 [95% C.I. 0.32, 1.02], P<0.001). The interesting point was the family group did not rank 'to be told the truth even if it is distressing' with as high importance as the nurses, however the difference was not statistically significant (mean dif = 0.14 [95% C.I. -0.16, 0.44], P=0.36).

Previously established factor analysis of the CCFNI produced five clusters of need including the need for information, assurance and anxiety reduction, proximity and accessibility, support and comfort. Demographic data were used to identify subgroups for the nurses and the families. Both 'spouse' and 'parent' groups ranked the factors in the same order as that identified by the full family group.

The nurses group was subdivided based on their experience in nursing and critical care. Nurses, who had less than five years ICU experience were the only subgroup to rank the factors in the same order as the overall nursing group, however the overall nursing group did not rank all of the factors in the same order as the family group. The closest ordering was achieved by nurses with less than five years experience in ICU and nurses with over five years experience in clinical nursing, demonstrating that more years experience does not necessarily result in a greater understanding of family needs.

DISCUSSION

Despite advances in medical technology and the increased inclusion of families in ICU care, the results of our study are similar to the results found in previous studies (Davidson 2009; Hinkle et al 2009; Eggenberger and Nelms 2007; Damboise and Cardin 2003; Delva 2002; Bijttebier 2000; Lopez-Fagin 1995; Davis-Martin 1994; Koller 1991; Macey and Bouman 1991; Coutu-Wakulczyk 1990; Forrester 1990; Chartier 1989; Lynn-McHale 1988; Leske 1986; O'Neill-Norris 1986; Daley 1984; Molter 1979). Breakdown of family needs into categories illustrate a change over time, however, from an emphasis on the need 'to feel there is hope' to a need 'to have questions answered honestly'. This may be attributed to the change in family participation in the ICU environment, resulting in the family being more aware of the expected outcomes for the patient. Families are also able to monitor more closely the care provided to the patient, which increases understanding of the patient's treatment and prognosis. This supports the previously established need for information. It reinforces the need to provide family members with up to date and accurate information relating to the patient at regular times.

Other studies (Leske 1986; O'Neill-Norris and Grove, 1986; Molter 1979) which highlight the family's need 'to feel that the hospital personnel care about the patient' and 'to know the expected outcomes' show similar findings to the current study. Both of these needs we would expect to remain constant over time given the nature of the critical care environment. The family members also ranked 'to have the waiting room near the patient' and 'to be called at home about changes in the patient's condition' lower than those from previous studies, again highlighting more recent changes in family visiting policies.

Given the current interactive role between nurses and family members, nurses often explain procedures to the family as they are carrying them out. Subsequently the previously identified need 'to know why things were done for the patient' has reduced in its importance. A simple brochure written in terms that family members can understand could address a lot of the needs assessed as important in the current and previous literature. An overview of the ICU and what can be expected when a family member is admitted including contact details for the unit can provide a valuable resource for family members to reflect on as they often do not take in all the information initially provided and are often too overwhelmed to ask for clarification. Providing people with permission to ask questions frequently, to assist with basic patient care and to visit or contact the unit at any time can assist nursing staff with meeting a significant amount of family members needs.

There are two limitations of this study. First, the number of participants in our study is smaller than some of the other studies and second, all of the participants were sourced from the same hospital which may limit the generalisability of these results. These are minor limitations and the results of this study provide contemporary support to previous work. Whilst this study may be seen as a replication it is important that instruments such as the CCFNI are evaluated from time to time to ensure they maintain relevance. This study highlights the fact that the CCFNI continues to be a good diagnostic tool in family needs assessment in the intensive care environment.

CONCLUSION

This study focused on replicating previous studies (Daley 1984; Molter 1979) using the CCFNI with the results illustrating only minor changes in the ranking order of needs of family members and nurses between 1979 and 2003. However, our results did show a significant change for families from the need 'to feel there is hope' to a need 'to have questions answered honestly'. This supports the use of the CCFNI as a valid research tool with current participants. It further highlights the importance of the need for information provision and communication between family members and ICU staff. The use of a brochure encouraging family participation and providing contact details for key ICU staff and a brief description of their role will be a valuable resource for family members to reflect on during the relatives' ICU admission.

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Supporting the evolution of a research culture among nurses in Malaysia

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KEY WORDS

evidence based practice, Malaysia, professional development, research training

ABSTRACT

Objective

This paper describes a project to promote a research culture amongst nurses in Malaysia. The project, funded by the Australian Government's Australia Malaysia Institute, and implemented by a group of Australian nurse academics, provided a rare professional development opportunity to nurses in urban and remote areas of Malaysia.

Setting

The Malaysian capital of Kuala Lumpur and the remote town of Sibu, on the Island of Borneo, were the setting for this project. The diversity of Malaysia was epitomized in the locations chosen for the implementation of tailored professional development seminars.

Conclusions

Evidence based practice in nursing is a global phenomenon. The importance of basing nursing care on scientifically derived, current evidence is a critical element of contemporary nursing practice. This notion is appreciated and accepted by nurses in Malaysia who, despite being impacted upon by barriers to the conduct and implementation of research in the clinical area, seek opportunities to enhance patient outcomes through evidence based practice. Projects such as the one described in this paper provide a means for nurses to undertake professional development through collaborative activities that are not limited by geographic, socioeconomic or cultural boundaries.

INTRODUCTION

The growth of the evidence based practice movement has impacted on nursing throughout the world. In countries where baccalaureate preparation for initial licensure has yet to become the minimum standard, the challenge to support practice with evidence is intensified. Malaysia is a nation in which nursing is regulated, yet professionally the discipline is in its infancy. There is an acceptance however, that nursing practice should be consistent with standards being advocated in nearby developed nations. In response to feedback provided by graduates of the authors' employing university, funding was sought and obtained to implement professional development workshops for nurses in Malaysia. This paper outlines the aims of the project and the means by which these were achieved.

BACKGROUND

Malaysia is an intriguing country spread across two landmasses. The diversity of ecology and culture in this country presents unique challenges to health care professions. Variations in socioeconomic status, coupled with the sultry climate, result in a range of health conditions that nurses need to manage, from lifestyle diseases to tropical ailments. Across both Peninsula Malaysia, which is home to the nation's capital of Kuala Lumpur, and the Eastern states of Sarawak and Sabah on the Island of Borneo, nurses provide care in a variety of urban, rural and remote settings.

Nursing in Malaysia has developed along similar lines to other countries that were formerly British colonies. Most nurses in Malaysia gain qualifications in colleges attached to hospitals where, since 1990, registration is achieved with the awarding of a Diploma of Nursing (Shamsudin 2006). Selected universities offer baccalaureate degree programs across the country, however the cost and educational prerequisite requirements for these courses dictate that most nurses enter the profession at diploma level. While diploma preparation includes an introduction to the basic concepts of research, nurses in Malaysia, as in many other parts of the world, face barriers in the workplace in the application and conduct of research in the clinical environment (McKenna et al 2004). These barriers include poor access to computer facilities, isolation from expert support, inadequate research and critical appraisal skills, lack of time, lack of authority to implement change, difficulty in seeing the relevance of research to practice and most importantly, a lack of confidence in many nurses' abilities to locate and assess evidence for practice (Leach 2006; Olade 2004; Nagy et al 2001)

The purpose of the project described in this paper was to assist nurses in Malaysia to work towards overcoming identified barriers to implementing evidence based practice through the provision of a rare professional development opportunity. The primary goal was to conduct seminar presentations and workshops to develop and enhance skills in the conduct, critique, application and dissemination of nursing research. Recent criticism over the quality of nursing care in Malaysia (Samy 2006) supported the need for this type of activity. As experienced academics the project team recognised the importance of evidence based practice to the status of the profession and, most significantly, to improved patient outcomes. An ultimate aim of this project was to promote a research culture amongst the profession in Malaysia. This goal was consistent with that espoused by the Nursing Board Malaysia. Nurses who attended the workshops were given a certificate of attendance that could be used as evidence for accruing Continuing Professional Development (CPD) points necessary for annual renewal of practice licences.

The role of all nurses in advancing evidence based nursing practice (Burns and Grove 2008; Newell and Burnard 2006) was strongly emphasised throughout the project. Strategies to overcome obstacles to evidence-based practice and the establishment of support networks were amongst the means used to instil an appreciation of the value of developing a research culture.

THE PROJECT

The authors have a long association with nursing in Malaysia, having been involved in the development and delivery of post registration baccalaureate and master of nursing programs since 1999. The extensive alumni are located throughout Peninsula and East Malaysia and many occupy middle to senior level management roles. Ongoing relationships between the alumni and the authors have resulted in a range of collaborative activities supporting the ongoing professional development of nurses.

The project described in this paper was conceptualised following a successful two day collaborative conference convened by the authors, the Health Department and local professional nursing associations in Sarawak on the Island of Borneo in 2006. This earlier initiative targeted clinical skill development and feedback suggested that participants also wished to enhance their clinical research skills and capacity. In response to this feedback, a professional development event was convened in conjunction with local nursing associations with the aim of meeting these previously identified needs.

Funding obtained from the Australia Malaysia Institute, within the Australian Government Department of Foreign Affairs and Trade, was augmented by the School of Nursing and Midwifery at Monash University. This funding financed two-day seminars entitled *Nursing Research: Getting Started* conducted in two locations in Malaysia. The delivery of the initial seminar in Kuala Lumpur provided a central location suitable for attendance by nurses located in Peninsula Malaysia. The Sunway campus of Monash University in Malaysia proved an excellent location for this event, which was supported by local academic and administrative staff.

The second seminar was conducted in Sibu, in the East Malaysian state of Sarawak. Sibu is located off the tourist trail, and the size and geographical location of this town limits opportunities for professional development of nurses and other health care professionals. These limitations exist in spite of a supportive local state health department. In response to requests from alumni of the School of Nursing and Midwifery, academic staff have, over recent years, contributed to previous professional development activities, culminating in this project.

The project was lead by Dr Melanie Birks, a Senior Lecturer at Monash University, who has had over ten years experience in teaching international students in various locations, most specifically Malaysia. Professor Karen Francis, Associate Professor Ysanne Chapman and Dr Jane Mills, also from the School of Nursing and Midwifery, brought to the project a wealth and diversity of research expertise. Ms Jo Porter was also included in the team as a beginning career researcher. Ms Maree Mills was assigned to the project in an administrative role.

SUPPORTING A RESEARCH CULTURE

The goal of supporting the development of a research culture for nurses in Malaysia drove the structure and content of the seminars. From the outset, the project team was committed to providing a professional development opportunity for nurses that met their specific needs. The aim of instilling a positive and 'can do' attitude amongst professional nurses functioning within the Malaysian health care system did not mean simply transplanting the research culture with which the Australian academics were familiar. The cumulative experience of the project team in teaching in the South East Asian region proved invaluable in planning for these seminars. This focused approach was further facilitated through working closely with local nurses in devising the content and structure of these events.

Having an established relationship with the profession in this region was instrumental in negotiating the challenges presented in the developmental stages of this project. These challenges included securing a suitable date for the event around local holidays and teaching commitments of the project team. The need to comply with local protocol was also an issue that required attention during the early developmental phases, including identifying the most appropriate individuals to organise, officiate and oversee the events.

The popularity of these sessions was evidenced by the considerable number of professionals in attendance in both Kuala Lumpur (over 150 participants) and Sibu (approximately 200 participants). As English is widely spoken in Malaysia it was the medium for delivery of the seminars which consisted of plenary sessions conducted on the morning of each day. Contemporary issues in nursing research were the focus of these sessions. The significance of the global evidence based nursing movement was explored and reinforced. Major research paradigms were introduced, trends in nursing research were explored and ethical and legal issues were examined. In both Kuala Lumpur and Sibu, local individuals from clinical and academic environments were invited to speak and delivered a context specific perspective on research in Malaysia. Participants were provided with a resource package that was inclusive of presentation handouts and associated reference lists.

Concurrent, interactive workshops formed the basis of the afternoon activities on both days of each seminar. In groups of 30 - 50, participants had the opportunity to critique research studies and discuss the application of research in their own clinical milieu. Basic statistics were introduced and demystified as participants were given the opportunity to develop quantitative questionnaires and engage in basic data collection and analysis. Participants were also able to examine principle forms of research dissemination, including the preparation of mock materials for the presentation of research findings at conferences. In this latter workshop, participants were encouraged to develop a poster as a means of displaying to others in their workplace what they had gained from their participation in the seminar.

Nurses with varying levels of practice experience from various clinical settings attended the seminars. Few participants were qualified to degree level or beyond. There was nonetheless a broad range of skills, experience and expertise amongst the participants in both locations, both professionally and in respect of research. Any lack of experience in research did not temper the high level of enthusiasm and motivation amongst the participants. The popularity of the Sibu seminar saw the attendance of various allied health workers, including doctors, pharmacists and laboratory technicians. The multidisciplinary nature of the seminar was welcomed as relationships were fostered and a greater understanding of professional roles and research potential was to occur.

The diverse mix of participants proved a challenge to the project team. A commitment by presenters to ensure relevance of the seminars to all those who attended was reflected in the evolution of the seminar structure and content in response to formal and informal feedback obtained during these events. This approach ensured that all participants were able to take away from the seminar a feeling of achievement of individual professional goals. Most significantly, such timely response ensured that this rare opportunity for tailored professional development had maximum impact in the limited time available.

Seminar evaluations developed by the local organising committees were distributed to the participants and collated by a research assistant employed by the School of Nursing and Midwifery for review by all stakeholders. Participants were encouraged to provide honest feedback to ensure that future events would address specific needs and overcome any limitations or deficiencies identified by the participants. The evaluations demonstrated that both events were overwhelmingly well received and much appreciated by those who attended. This appreciation was particularly evident in Sibu where opportunities such as this are very limited. Evaluations also indicated a desire for further seminars that addressed more advanced skills. Participants demonstrated an appreciation of the importance of evidence based practice and were keen to continue to build their skills with the ultimate aim of undertaking research. The differing experience and ability of those attending the seminar was reflected in requests for both beginning and advanced research skills to be covered in future events.

Panel discussions at the end of each seminar echoed the desire of nurses to undertake research in their local setting. Perceived limitations in their ability to achieve this aim, largely as a result of lack of confidence, skills training and mentorship, was cited as the main hurdle. The immediate goal of the seminars was the development of skills in understanding research processes to enable professional nurses to evaluate and implement research in the practice setting. Participants were nonetheless encouraged to seek future collaborative opportunities for research. Academics from the School of Nursing and Midwifery at Monash University reinforced their commitment to assisting with overcoming barriers to the conduct and application of research and participants were encouraged to contact the project team for assistance where appropriate.

MAINTAINING MOMENTUM

The success of these seminars indicates their worth. The project team welcomed requests from participants for further professional development activities. A series of targeted future initiatives will be implemented to meet the needs identified by participants who attended the seminars. These initiatives include future conferences, seminars and workshops. A series of collaborative research endeavours in specific nursing specialisations are also proposed. These projects will include workshops in basic research concepts, including data collection and analysis. Skills training in writing for publication, along with other dissemination strategies, are under consideration for future events.

CONCLUSION

Recipients of nursing services have a right to receive health care based on contemporary, scientifically derived evidence. An increased awareness of the rights of individuals who enter the health care system fuels this commitment. Nurses represent the greatest number of professionals in the health care environment. In a world of ever increasing technological advancements and economic constraints, the need for solid rationale on which to base nursing interventions cannot be ignored. The challenges presented by globalisation are tempered by the advantages that living in a global society brings. One such advantage is the ability to share resources, experience and expertise for the development of professional colleagues in the international arena.

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Fear of falling

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KEY WORDS

fear of falls, falling, older people; anxiety, cognitive impairment

ABSTRACT

Objective
The purpose of the paper is to describe the 'fear of falling' phenomenon; to raise clinicians awareness; to consider the associated risk factors;

Setting
Fear of falling can be experienced in any clinical setting or within people own homes.

Primary argument
Individual clinicians and the treatment and care teams should consider fear of falling in people with a disordered gait or balance, or in the months following a fall, particularly where there is a recognised decline in 'recent' activity or obvious activity avoidance and changes in patterns of activity

Conclusions
Fear of falling is an under recognised phenomenon. This paper suggests a range of assessment tools; and outlines some management options that are available to clinicians in order to address the problem of fear of falling.

INTRODUCTION

Falls are a common cause of accident and injury in older people. Fear of falling, which is characterised by anxiety related to walking or a concern that the individual will fall, is often a common consequence of falling or of ongoing poor balance. Fear of falling can lead to a restriction in all or some forms of activity, de-conditioning, loss of function, and the need for institutional care.

Falling

Falling represents a significant threat to independence and quality of life (in terms of function, morbidity/mortality for example). Falling is amongst the common causes of injury affecting older people in both residential care and home settings but only ten percent cause serious injury (Tinetti 2003; Cripps and Carman 2001;Tinetti et al 1988). Prevalence rates vary but there is some consensus that falls affect between twenty to thirty percent of people over 60 years of age (Blain et al 2000; Niino et al 2000; Dargent-Molina and Breart 1995; Howland et al 1993) although, interestingly, one study has also found falls affected thirteen percent of people in the 40-59 year age group (Niino et al 2000). Females experience a greater number of falls (a ratio of 3:1) compared with falls experienced by males, (Fessel and Nevitt 1997; Vellas et al 1997; Dargent-Molina and Breart 1995; Arfken et al 1994). Falls are also a significant trigger for transfer to residential care (Rubenstein et al 1996).

Falls can be caused by extrinsic (considered to be environmental or outside of the individual, such as uneven surfaces) or intrinsic factors affecting balance (which are arising from within the individual such as impaired cognitive function). For example subjective changes to cognitive function, anxiety or lowering of mood (Fessel and Nevitt 1997; Vellas et al 1997; Dargent-Molina and Breart 1995), balance, or subjective decline in health status (Vellas et al 1997) or even continence problems (Masud and Morris 2001). In addition issues related to pharmacotherapy and polypharmacy may contribute to falls (Blain et al 2000; Dargent-Molina and Breart 1995).

Fear of falling: a definition

'Fear of falling', or post-fall syndrome as it was initially described (Murphy and Isaacs 1982), is more of a symptom rather than a diagnosis and is characterised by high levels of anxiety related to walking or a fear of falling (Vellas et al 1997; Arfken et al 1994). Fear of falling is an internal phenomenon or anxiety associated usually with falling that can impact significantly on purposeful activity and independence, and lead to de-conditioning to the point of loss of function. Fear of falling is a common sequelae of falling but can also occur in people who have not fallen, affecting up to sixty percent of 60-79 year olds (Niino et al 2000; Howland et al 1998). It can lead to reduced activity or reduction in some types of activity a person would have engaged in on a day to day basis (Fessel and Nevitt 1997; Howland et al 1998) or to clutching and grabbing at furniture and people or other forms of temporary support when walking (see Appendix: 1). People affected by fear of falling have been known to lunge towards furniture (or a person), and once secure, will then bring their feet closer to their body and look for the next piece of supporting furniture. It can also present as a perceived or real inability to walk unsupported (see Appendix: 2). In addition the fear of falling can occur in the absence of an actual fall (Vellas et al 1997), however it is more common to see some curtailment of the normal activities (Lachman 1998). Curtailment of activity might also present as an avoidance of certain activities for example walking outside, or a reduction of some activities, for example walking within familiar environments (see Appendix: 3). Perhaps more noticeable is the curtailment of outdoor activities (e.g. walking to the letter-box) a person may have actively engaged in previously.

A number of other features might suggest fear of falling: gait abnormalities can be present, there may be poor self-perception of physical health and cognitive status may be impaired (ACSQHC 2008; Vellas et al 1997; Arfken et al 1994). Depressive features, slow gait speed, and the use of a walking aid are also common features (Kressig et al 2001). It would seem that falling and fear of falling share some risk factors and may present in similar ways, which leads us to suggest that health care providers be aware that for someone who has never fallen, fear of falling—or impairment in gait/balance—may be an indicator the risk of falling should be considered and further assessed.

Internal phenomena - Depression and Anxiety

Whilst depression has been recognised as perhaps the most common psychiatric illness (at any age) and much more common than dementia in older people (Blazer 1997), depression is still not adequately recognised or treated in older people. A report released by the Department of Health and Ageing (2004), [using the Geriatric Depression Scale] reported fifty one percent of high care residents and thirty percent of low care residents are depressed. Furthermore the report also indicated that *"…a significant proportion of depressed residents go unnoticed"* (DOHA 2004 pvii). Significant levels of depression and co morbid anxiety may contribute to a lack of confidence in mobility and fear of falling.

It is worth differentiating between anxiety that accompanies activity and anxiety that *prevents or reduces* activity. Clients at risk may continue to undertake an activity (e.g. walking to the letter-box) but may do so more carefully. There is also a distinction to be made between fear that immediately follows a fall and the fear/anxiety that persists well after the time of the fall (Vellas et al 1997). The anxiety that occurs with walking—or at the prospect of activity—in the days or weeks following a fall may be seen as a normal response to that event; should it continue with a change in activity patterns it would be seen as problematic and requiring further investigation and appropriate management.

Reduced activity arising from fear of falling can lead to social isolation and consequently a reduction in total quality of life, and/or it may impact negatively on post fall rehabilitation in that it can inhibit activity levels, psychological wellbeing including general levels of confidence, appropriate risk taking and overall improvement. Furthermore a fear of falling may also contribute to an *actual* fall because of the inherent anxiety and changes in behaviour patterns can induce including gait abnormalities.

Predictors

It appears from the literature features that predict falling and fear of falling are the same, therefore identifying people who are at risk of falling will also identify those at risk of fear of falling—and vice versa (Friedman et al 2002). It may be that anxiety, independent of functional level, is a strong predictor of fear of falling (Gagnon et al 2005). It is also important to note anxiety can also be seen in people with cognitive decline. If higher level cognitive functioning is compromised (for example executive functions), then this may also indicate the client could be at risk of falling or experience fear of falling as a generalised anxiety.

Cognitive Function

Impairment of cognitive function, whether subjective or objective, can contribute to a lowering of mood or anxiety and, significantly, falling. Cognitive impairment has long been recognised as a major risk factor for falls (NARI 2004; Vellas et al 1997; Tinetti et al 1990) and a contributor to fear of falling (ACSQHC 2008). Clinical evidence would suggest that people with executive disorder are at particular risk of falling largely because of impulsivity, impaired planning and judgement/insight (ACSQHC 2008; Rapport et al 1998). As discussed above, screening for depression and anxiety is prudent as they are commonly found (both syndromal or subsyndromal) in people experiencing a fear of falling (Gagnon et al 2005). It should be recognised that it can be difficult to clinically differentiate between the features of depression and executive disorder because of superficial similarities in presentation.

Assessment and screening

People may not describe (or may deny) fear or dread related to a normal activity or walking. They may present with *anxiety* related to walking or standing and /or describe a change in confidence (awareness of possibility of falling) associated with poor balance or a gait disturbance. In view of this it may be appropriate to see the anxiety as a recognition of risk of falling (Friedman et al 2002). Equally they may present with activity avoidance or curtailment which may not be evident until comparing the current behaviour with the previous level of functioning or when additional informant history is obtained. Given these features are often hidden it would appear prudent to include screening for anxiety/depression and cognitive function as part of a routine assessment.

Anxiety and/or fear of falling need to be considered for anyone experiencing a fall or presenting with a balance/gait disorder—an important consideration given that fear of falling does not necessarily need to result from an actual fall (Bruce et al 2002; Vellas et al 1997). It may be appropriate to consider in older people with new onset anxiety or depression and changes in activity (or a new concern about their capacity to move safely). It may not be enough to ask if fear related to walking exists; is there a reduction in activity? (be careful with language '*fear*' may be too strong a word; this is also true for the term '*anxious*'; rather consider the following terms instead '*concerned*', '*uneasy*', or even '*less confident*').

For example '*Do you think seriously before getting up and moving around?' 'Are you aware of THINKING before moving/walking?'* It is important to ask questions, but just as important to observe the client/resident. Has their level of activity changed? Has there been a change in the type of activity the person undertakes? Each member of the care team has a role, and needs to be active, in the assessment process. Where anxiety or depression is suspected, use of a validated screening tool (such as the *Hospital Anxiety Depression Scale (HADS))* would be appropriate.

Whilst the HADS was developed in the early part of the 1980's (Zigmond and Snaith 1983), the scale has continued to be validated in a number of more recent studies, including Herman (1997), Bjelland et al (2002) and Snaith (2003). The scale consists of fourteen statements in total that the client is asked to rate. Seven of the statements relate to generalised anxiety whilst the remaining seven statements relate specifically to depressive type symptoms. With some education a health professional would be able to administer and score the HADS for a client or resident within about twenty minutes.

Screening for cognitive impairment is useful because it provides (a) some objective measure of current cognitive function and (b) a baseline against which subsequent screening can be compared to demonstrate fluctuations, improvement or decline. Commonly used screening tools for cognitive function include The Abbreviated Mental Test (AMTS), and Mini-mental State Examination (MMSE). The AMTS is a ten item screening tool that largely assesses memory and orientation that is well known and validated (Hodkinson 1972). The second is the MMSE, a commonly used screening tool for general cognitive function (Folstein et al 1975). Importantly, neither is a diagnostic tool and should not be considered as such and a poor result on screening is sufficient to indicate further investigation is required. Unfortunately both the MMSE and the AMTS fail to identify impairment of executive function which may predate, or exist in the absence of, impairment of memory. Executive function is important because it can indicate the person's capacity in instrumental activities of daily living (Juby et al 2002). Identification of executive function by the use of the Clock Drawing Test as a screening tool is well supported in the literature (Schulman 2000; Brodaty and Moore 1997; Bourke and Castleden 1995). It is a useful screening tool that will indicate visuo-spatial ability, comprehension, attention, logic and deficits in executive function (Royall et al. 1998). A particular advantage of the clock test is that it is fast to administer (Schulman 2000; Brodaty and Moore 1997) and easy to administer by people without specialist training, and the results can be appropriately interpreted by untrained staff (Scanlan et al 2002) - if it does not look like a correct clock face it is not a correct clock face, indicating further diagnostic assessment may be required. While the Clock Test is recognised as a viable screening tool of executive function (Juby et al 2002) it may also be reasonable to use it as an *initial* screen of cognitive function in general (Patterson and Gass 2001). The *Rowland Universal Dementia Assessment Scale*

(RUDAS), a six-item cognitive screening instrument designed to minimise the influence of culture and language on cognitive performance also includes executive function but has the advantage of also looking at other cognitive domains including memory, praxis, language and judgement (Storey et al 2004).

In summary, the health care provider should be encouraged to include the following types of assessment for falls/fear of falling:

- history of presenting complaint (including informant history);
- recording of changes in personal activities of daily living (e.g. showering and dressing) and instrumental activities of daily living (e.g. managing finances, using a telephone) assessment (including over the last four to six months);
- gait and mobility assessment;
- cognitive screen: (in registration; orientation; attention; recall; clock face assessment) and for a single screen we would advocate the use of the *Clock Test or RUDAS* because they appear to be better predictors of risk because—they address both general cognitive impairment *and* executive disorder which other screening tools do not; and
- anxiety and depression screen: is a useful tool to identify the presence of anxiety or depression for example the Hospital and Anxiety Depression scale.

The role of carers as part of the ongoing assessment/screening should not be underestimated and could involve reporting on and recording the level of activity of the client/resident, i.e. how they get up, how they move, any reluctance to ambulating etc or a noticeable reduction in activity levels or avoidance of activities.

Ultimately, it is vital to recognise those at risk and simply ask about (and/or identify) changes in activity or any restriction in activity (particularly in the presence of features of anxiety/depression and/or decreased executive function. This would allow for more timely and complete intervention to occur in consultation with the treatment team.

Management of fear of falling

As described above falling and fear of falling appear to present in similar ways (or if have not fallen they will likely present with risk factors for falling). Fear of falling or impaired gait/balance may be an indicator that the risk of falling should be considered and further assessed. It follows then that the management of fear of falling would be considered in the treatment of falls.

This means that the treatment team should:

- treat any underlying medical issues that may contribute to a fall;
- address gait/balance disorders to improve mobility, including a daily exercise regimen such as Tai Chi (Sattin et al 2005), and chair exercises; and
- identify and address 'mental' health issues particularly around cognitive impairment and, lowered mood and anxiety arising from activity.

As with most co-morbidity issues, successful management of fear of falling requires a combined and concerted effort on the part of the treating team.

CONCLUSION

Fear of falling and falls represent a significant threat to socialisation, independence and morbidity/mortality. It appears the features that predict falling and fear of falling are the same, therefore identifying people who are at risk of falling will also identify those at risk of fear of falling—and vice versa. In addition, fear of falling and falling share some *common risk factors*, however the actual fear of falling may be experienced by someone who has never actually had a fall. Individual clinicians and the treating team should consider *fear of falling* in people with a disordered gait/balance or following a fall, particularly where there is a recognised decline in 'recent' activity or obvious activity avoidance.

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APPENDIX 1 - Furniture grabbing

Seventy six year old woman living in an Independent Living Unit in a village, with no history of falls but recently had a near miss (tripped and stumbled on path), when recovering from mild pneumonia; increasingly sedentary (sitting by the window, watching TV). No longer walks to the letter box (previously would go outside at least five times per day—to chat with neighbours etc). Now remains inside the unit, no longer walks *between* furniture but moves carefully from one piece of furniture to another piece of furniture or to a door handle - doesn't grasp them but just touches them. Currently denies any *fear* of falling but does acknowledge being a little worried about her safety.

APPENDIX 2 - Lack of recognition

A sixty nine year old woman living in a residential care facility with mild dementia, but otherwise quite healthy and fit as she would walk around the town with a care worker at least twice per day. When not outside she would bang on doors that led to the outside and would ask - *"Why won't you let me out?* This woman experienced a fall inside the facility and sustained mainly soft tissue injuries. Now, after a period of six months she will sit for long periods in a chair just staring at the outside world, when she does get up from time to time she will only bang on inside doors and avoids the outside all together. When staff approach her to go for a walk she responds - *"No I can't stand up dear"* [and then grabs onto the arms of the chair as staff are trying to lift her up]. When she is finally standing and the staff prompt her to walk she responds - *"No I can't walk dear"*. All of which is not true and her dementia is not so marked to be an issue in this regard. The staff however did not perceive these behaviours to be an expression of fear of falling.

APPENDIX 3 - Curtailment of Activity

A seventy seven year old woman living in a residential care facility with no previous history of falls, who was an active participant in the day program which was held in another building a short walk from the facility; experienced a recent fall tripping on some carpet. After an appropriate time for recovery and rehabilitation the staff noticed that her confidence was not as good as it was before and her overall activity levels had declined markedly. However most noticeable was her unwillingness to go for walks outside which she would previously do all the time. When asked if she would like to go outside she would respond - *"No I don't need to go outside dear, I don't need to leave my room - I have my books in my room, I can see and hear the birds"* or *"I need to stay close to the toilet dear, I have a problem with my bowels"* [which was not the case], or *"I'm not so well dear, I have just had a fall"* [12 months ago]. When asked if she would like to participate in the day program she would respond - *"I am just giving the day program a break for a while dear, I might think about it again next week"*.