June - August 2010
Volume 27 Number 4

AJAN

australian journal of advanced nursing

An international peer reviewed journal of nursing research and practice

IN THIS ISSUE

27:4

THE AUSTRALIAN JOURNAL OF ADVANCED NURSING

The Australian Journal of Advanced Nursing aims to provide a vehicle for nurses to publish original research and scholarly papers about all areas of nursing. Papers will develop, enhance, or critique nursing knowledge and provide practitioners, scholars and administrators with well-tested debate.

The AJAN will:

- publish original research on all nursing topics
- publish original scholarly articles on all nursing topics
- process manuscripts efficiently
- encourage evidence-based practice with the aim of increasing the quality of nursing care
- provide an environment to help authors to develop their research and writing skills
- provide an environment for nurses to participate in peer review

Publisher and Editorial Office
Australian Nursing Federation
PO Box 4239
Kingston ACT, Australia 2604
tel +61 2 6232 6533
fax +61 2 6232 6610
email: ajan@anf.org.au
http://www.ajan.com.au

ISSN 1447-4328

Copyright
This journal is published in Australia and is fully copyrighted. All rights reserved. All material published in the Australian Journal of Advanced Nursing is the property of the Australian Nursing Federation and may not be reproduced, translated for reproduction or otherwise utilised without the permission of the publisher.

Indexing
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.

PRODUCTION

Editor
Lee Thomas

Journal Administrator
Rebecca Shaw

EDITORIAL ADVISORY BOARD

Joy Bickley Asher, RN, RM, Teaching Cert(Sec), BA, Ophthalmic N Dip(Hons), PG Dip(Nurs), PG Dip(Soc), PhD
Research Advisor, Royal New Zealand Plunket Society, Wellington, New Zealand.

Yu-Mei (Yu) Chao, RN, PhD
Adjunct Professor, Department of Nursing, College of Medicine, National Taiwan University, Taipei, Taiwan. Chairperson, Taiwan Nursing Accreditation Council

Mary Courtney, RN, BAdmin(Acc), MHP, PhD, FRCNA, AFCHSE
Assistant Dean (Research) Faculty of Health, Queensland University of Technology, Brisbane, Queensland, Australia.

Karen Francis, RN, PhD, MHlthSc, MEd, Grad Cert Uni Teach/Learn, BHlth Sc Nsg, Dip Hlth Sc Nsg
Professor and Head of School, School of Nursing and Midwifery, Monash University, Gippsland Campus, Churchill, Victoria, Australia.

Desley Hegney, RN, RM, CNNN, COHN, DNE, BA(Hons), PhD, FRCNA, FAIM, FCN(NSW)
Professor, Alice Lee Centre for Nursing Studies, National University of Singapore, Singapore.

Linda Kristjanson, RN, BN, MN, PhD
School of Nursing, Midwifery and Postgraduate Medicine, Edith Cowan University, Churchlands, Western Australia, Australia.

Anne McMurray, RN, BA (Psych), MEd, Phd, FRCNA
Research Chair in Nursing, Murdoch University, Peel Health Campus, Mandurah, Western Australia and Adjunct Professor of Nursing, Research Centre for Clinical and Community Practice Innovation, Griffith University, Queensland.

Colin Torrance, RN, DipLscN, BSc (Hon), PhD
Professor in Health Professional Education; Head of Simulation; Faculty of Health, Sports and Science, University of Glamorgan, Pontypridd, United Kingdom.

Lesley Wilkes, RN, CM RenalCert, BSc(Hons), GradDipEd(Nurs), MHPEd, PhD
Professor of Nursing, Sydney West Area Health Service and the University of Western Sydney, Sydney, New South Wales, Australia.

AJAN
australian journal of advanced nursing

June - August 2010
Volume 27 Number 4

CONTENTS

RESEARCH PAPERS

SCHOLARLY PAPERS

AUSTRALIAN JOURNAL OF ADVANCED NURSING REVIEW PANEL: AUSTRALIA

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

Dr Alan Barnard, RN, BA, MA, PhD, Queensland University of Technology, Brisbane, Queensland

Philip Benjamin, RPN, BEd, Masters candidate (MMSoc).

Dr Cally Berryman, RN, PhD, Med, BAppSc, Grad Dip Community Health, Victoria University, Melbourne, Victoria

Sally Borbasi, RN, Bed (Nsing), MA (Edu: Research), PhD, Griffith University, Meadowbrook, Queensland

Cathy Boyle, The Prince Charles Hospital and Health District, Chermside, Queensland

Carolyn Briggs, RN, CM, Dip. CHN, BA, MA, FRCNA, University of Technology, Sydney, New South Wales

Julie Considine, RN, RM, BN, EmergCert, GDipNursAcuteCare, MNurs, PhD, FRCNA, Deakin University-Northern Health Clinical Partnership, Victoria

Dr Marie Cooke, RN, DAppSc (Nsg and Unit Management), BAppSc (Nsg), MSPD, PhD, Griffith University, Nathan, Queensland

Mary Courtney, RN, BAdmin, MHP, PhD, FRCNA, AFCHSE, Queensland University of Technology, Brisbane, Queensland

Trish Davidson, RN, ITC, BA, Med, PhD, Curtin University of Technology, Chippendale, New South Wales

Tess Dellagiacoma, RN, BA, MA, NSW Department of Ageing, Disability and Home Care (DADHC), Sydney, New South Wales

Dr Michelle Digiacomo, BA, MHlthSci (Hons), PhD, Curtin University of Technology, Chippendale, New South Wales

Jim Donnelly, FRCNA, RMN, SRN, NDN, CertApprec.Obst.Care, ICU Cert, BAppScAdvNurs, MBA, Asset Management, Melbourne, Victoria

Sandra Dunn, RN, PhD, FRCNA, Charles Darwin University, Casuarina, Northern Territory

Trisha Dunning, RN, Med, PhD, FRCNA, Geelong Hospital, Victoria

Dr David Evans, RN, PhD, University of South Australia, Adelaide, South Australia

Jenny Fenwick, RN, PhD, Curtin University, Western Australia

Ritin Fernandez, RN, MN(critical care), PhD Candidate, Sydney South West Area Health Service, Sydney, New South Wales

Karen Francis, RN, PhD, MHLthSc, Nsg.Med, Grad Cert Uni Tech/Learn, BHlth Sc, Nsg, Dip Hlth Sc, Nsg, Monash University, Churchill, Victoria

Dr Jenny Gamble, RN, RM, BN, MHlth, PhD, Griffith University, Meadowbrook, Queensland

Deanne Gaskill, BAppSc (Nsg), GrDipHSc (Epi), MAppSc (HEd), Queensland University of Technology, Ash Grove, Queensland

Dr Judith Godden, RN, PhD, BA(Hons), DipEd, University of Sydney, New South Wales

Judith Gonda, RN, RM, BAppSci (AdvNursing-Educ), MN, PhD, Australian Catholic University, Brisbane, Queensland

Dr Jennene Greenhill, RN, PhD, MSPD, GradDipAppSc, RPN, BA, Flinders University, Adelaide, South Australia

Rhonda Griffiths, RN, BEd (Nsg), MSc (Hons), PhD, University of Western Sydney, New South Wales

Ruth Harper, BSc, RGN, MA, Royal Melbourne Hospital, Victoria

Dr Ann Harrington, RN, BEd, MNg, Flinders University, Bedford Park, South Australia

Dr Louise Hickman, RN BN, MPH (UNSW), PhD, A/Lecturer, University of Sydney, New South Wales

Debra Kerr, RN, BN, MBL, Grad Cert (Research and Research Methods), PhD, Senior Lecturer, honours Coordinator, Victoria University, Victoria

Kathleen Kilstoff, RN, BA, DipEd, MA, FCN, University of Technology, Sydney, New South Wales

Virginia King, RN, MNA, BHA, BA, Southern Cross University, Lismore, New South Wales

Dr Joy Lyneham, RN, BAppSci, GradCertEN, GradDipCP, MHSc, PhD, FRCNA, Monash University, Victoria

Dr Jeanne Madison, RN, MPH, PhD, University of New England, Armidale, New South Wales

Elizabeth Manias, RN, BPharm, MPharm, MNursStud, PhD, CertCritCare, FRCNA, The University of Melbourne, Carlton, Victoria

Peter Massey, RN, GradCertPublicHlth, MCN, Hunter New England Health, Tamworth, New South Wales

Katya C May, RN, RM, CNM (Certified Nurse Midwife,USA), NP (Nurse Practitioner in Women's Health,USA), MSN, BA, Gold Coast TAFE, Griffith University, Brisbane, Queensland

Dr Jane Mills, RN, PhD, MN, BN, Grad.Cert.Tert. Teaching, Monash University, Churchill, New South Wales

Anne McMurray, RN, BA (Psych), MEd, PhD, FRCNA, Murdoch University, Mandurah, Western Australia

Wendy Moyle, RN, PhD, MHSc, BN, DipAppSci, Griffith University, Nathan, Queensland

Dr Maria Murphy, RN, PhD, Grad Dip Critical Care, Grad Cert Tertiary Education, BN Science, Lecturer, La Trobe University, Victoria

Dr Jane Neill, RN, BSc, PhD, Flinders University, Bedford Park, South Australia

Marilyn Richardson-Tench, RN, PhD, ORCert, CertClinTeach, MEdSt, BAppSc (AdvNsg), RCNT (UK), Victoria University, Ferntree Gully, Victoria

Dr Yenna Salamonson, RN, PhD, BSc, GradDipNsg(Ed), MA, University of Western Sydney, New South Wales

Nick Santamaria, RN, RPN, BAppSc (AdvNsg), GradDipHlthEd, MEdSt, PhD, Curtin University of Technology, Western Australia

Dr Winsome St John, RN, PhD, MNS, GradDipEd, BAppSc (Nsg), RM, MCHN, FRCNA, Griffith University, Gold Coast, Queensland

Dr Lynnette Stockhausen, RN, DipTeach, Bed, MEdSt, PhD, Charles Sturt University, Bathurst, New South Wales

Dr Chris Toye, RN, BN (Hons), PhD, GradCert(TertiaryTeaching), Edith Cowan University, Churchlands, Western Australia

Thea van de Mortel, RN, BSc (Hons), MHSc, ICUCert, FCN, FRCNA, Southern Cross University, Lismore, New South Wales

Sandra West, RN, CM, IntCareCert, BSc, PhD, University of Sydney, New South Wales

Lesley Wilkes, RN, BSc(Hons), GradDipEd(Nurs), MHPEd, PhD, University of Western Sydney and Sydney West Area Health Service, New South Wales

Dianne Wynaden, RN, RMHN, B.AppSC(Nursing Edu), MSc(HSc) PHD, Curtin University of Technology, Western Australia

Patsy Yates, PhD, RN, FRCNA, Queensland University of Technology, Kelvin Grove, Queensland

AUSTRALIAN JOURNAL OF ADVANCED NURSING REVIEW PANEL: INTERNATIONAL

Mahmoud Al-Hussami, RN, DSc, PhD, Assistant Professor and Department Head, Community Nursing, University of Jordan, Amman, Jordon

Dr Joy Bickley Asher, RN, RM, Teaching Cert (Sec), BA, Ophthalmic N Dip (Hons), PG Dip (Nurs), PG Dip (Soc), PhD, Research Advisor, Royal New Zealand Plunket Society, Wellington, Wellington, New Zealand

Dr Robert Crouch, OBE, FRCN, Consultant Nurse, Emergency Department, Southampton General Hospital, University of Southampton, United Kingdom

Yu-Mei (Yu) Chao, RN, PhD, MNEd, BSN, National Taiwan University, Taipe, Taiwan

Desley Hegney, RN, CNNN, COHN, DNE, BA (Hons), PhD, FRCNA, FIAM, FCN (NSW), National University of Singapore, Singapore

Natasha Hubbard Murdoch, RN, CON(C), BSN, MN(c), Saskatchewan Institute of Applied Science and Technology, Canada

Jennifer Lillibridge, RN, MSN, PhD, MRCNA, Associate Professor, California State University, Chico, California, USA

Katherine Nelson, RN, PhD, Victoria University of Wellington, New Zealand

Davina Porock, RN, BAppSc(Nsg), PGDip(Med-Surg), MSc(Nsg) PhD(Nsg), Professor of Nursing Practice, University of Nottingham, United Kingdom

Vince Ramprogus, PhD, MSc, BA (Hons), RGN, RMN, Pro Vice Chancellor/ Dean of Faculty, Manchester Metropolitan University, Manchester, United Kingdom

Colin Torrance, RN, BSc(Hon), PhD, Sport and Science University of Glamorgan Pontypridd, United Kingdom

Development and validation of a novel approach to work sampling: a study of nurse practitioner work patterns

AUTHORS

Glenn Gardner
RN PhD
Professor of Clinical Nursing, Queensland University of Technology and Royal Brisbane and Women's Hospital, Brisbane, Australia.
ge.gardner@qut.edu.au

Anne Gardner
RN BA MPH PhD
Professor of Nursing – Tropical Health, James Cook University and Townsville Health Service District, Townsville, Australia.
Anne.gardner@jcu.edu.au

Professor Sandy Middleton
RN BAppSc (Nursing) MN PhD
Professor of Nursing Research, St Vincents and Mater Health, Sydney, Director, National Centre for Clinical Outcomes Research (NaCCOR), Nursing and Midwifery, Australia, Australian Catholic University, Sydney, Australia.
Sandy.middleton@acu.edu.au

Michelle Gibb
RN NP MWound Care MNrsgSc(NP)
Project Coordinator – Phase Two, Australian Nurse Practitioner Project, Queensland University of Technology, Brisbane, Australia.
Michelle.gibb@qut.edu.au

Professor Phillip Della
RN RM BAppSc MBus PhD
Professor of Nursing
Head of School of Nursing and Midwifery, Curtin University of Technology, Perth, Australia.
p.della@curtin.edu.au

Professor Christine Duffield
RN PhD MHP BScN DNE DipCompDirector
Professor of Nursing and Health Services Management, Director of Centre for Health Services Management, University of Technology Sydney, Sydney, Australia.
Christine.duffield@uts.edu.au

Acknowledgements
The authors gratefully acknowledge the nurse practitioners who participated in the study, the data collectors and the expert panel who contributed to validation of the instrument and Dr Vicki Kain who supported the training program. This study was supported by an Australian Research Council Linkage Grant No LP0668886 and the authors also acknowledge the support of industry partners, N³ET, Chief Nursing Officers of Australia and the ANMC.

KEY WORDS

Advanced practice nursing; health service research; nurse practitioner; work sampling

ABSTRACT

Objectives
This methodological paper reports on the development and validation of a work sampling instrument and data collection processes to conduct a national study of nurse practitioners' work patterns.

Design
Published work sampling instruments provided the basis for development and validation of a tool for use in a national study of nurse practitioner work activities across diverse contextual and clinical service models. Steps taken in the approach included design of a nurse practitioner-specific data collection tool and development of an innovative web-based program to train and establish inter rater reliability of a team of data collectors who were geographically dispersed across metropolitan, rural and remote health care settings.

Setting
The study is part of a large funded study into nurse practitioner service. The Australian Nurse Practitioner Study is a national study phased over three years and was designed to provide essential information for Australian health service planners, regulators and consumer groups on the profile, process and outcome of nurse practitioner service.

Results
The outcome if this phase of the study is empirically tested instruments, process and training materials for use in an international context by investigators interested in conducting a national study of nurse practitioner work practices.

Conclusion
Development and preparation of a new approach to describing nurse practitioner practices using work sampling methods provides the groundwork for international collaboration in evaluation of nurse practitioner service.

INTRODUCTION

There is a growing body of research on nurse practitioner service models and education (LeCuyer et al 2009; Nicolson et al 2005) and a sound evidence base on the effectiveness and safety of nurse practitioner service when compared with other health care professionals (Pirret 2008; Wilson and Shifaza 2008; Borgmeyer et al 2008; Donald and McCurdy 2002; Dierick-van Daele et al 2009). Research on acceptability of the service by consumers and other health care professionals supports the role (Donald and McCurdy 2002) and there is an emerging body of knowledge on differentiating the nurse practitioner from other advanced practice nursing roles (Gardner et al 2006, Rosenfeld et al 2003).

Notwithstanding the expanding research-based knowledge on the benefits of the nurse practitioner role, the global community of nurse practitioners practise from different regulatory and educational bases. For example the title 'nurse practitioner' is legally protected in Australia, but not in the United Kingdom (Gardner et al 2006, Currie 2007; Eve 2005). An important landmark has been reached in the USA recently with a national consensus model for regulation of advanced practice nurses, which includes the nurse practitioner (Stanley 2009). Consensus on regulation already exists in Australia (ANMC 2006), Alaska (Giessel 2006) and most parts of Canada (CNPI 2006). Educational requirements for the nurse practitioner vary across international borders with some, but not all jurisdictions having mandatory master's level training for authorisation to practice (Currie 2007). A consequence of this variance in regulation of the role is that the generalisability of knowledge from international research on nurse practitioner service is limited and must be qualified by attention to cross border legal, educational and practice standards. Considering the contribution of the nurse practitioner role to health service reform internationally there is clearly a need to begin a process of cross border information sharing to improve understanding of nurse practitioner service.

A key area of nurse practitioner research that has to date been neglected is development of knowledge on the patterns of clinical practice of nurse practitioners and the aspect of practice that may influence associated patient outcomes across different models (Hoffman et al 2003; Rosenfeld et al 2003; Laurant et al 2004). This information may contribute to building an international understanding of the parameters of nurse practitioner practice, the potential variability in the effectiveness of the role and the relative practice focus in diverse nurse practitioner models.

Work sampling methods

Research into work activity is well established in nursing and other health care professions (Pelletier and Duffield 2003) and work sampling methodology is frequently used in this field. This research approach has been developed to generate a clear picture of workflow and work practices by providing information on the amount of time that clinicians or groups of clinicians spend on particular activities (Pelletier and Duffield 2003). The method traditionally involves taking intermittent, random, instantaneous observations of work activities of multiple workers by independent observers who record the actual activity on a data collection instrument (Urden and Roode 1997). Activities are mutually exclusive and organised into categories.

A number of methods have been employed for data collection in work sampling including self reporting using an observation tool or clinical activity log (Pelletier and Duffield 2003) and self-completing survey (Rosenfeld 2003). A different approach to self reporting used in one study was intermittent recording of activity by nurses in response to a PDA alarm programmed to vibrate a set number of times over the shift (Hendrich et al 2008). Alternatively, data are collected by independent trained observers (Herdman et al 2009; Hurst 2004). Overall there is agreement in the literature that the most reliable method of data collection for work sampling is use of independent trained observers (Urden and Roode 1997; Burke et al 2000; Pelletier and Duffield 2003; Hoffman et al

2003). For the study in this report initial consultation with nurse practitioner clinicians confirmed that the independent trained observers approach would be more reliable than self-reporting.

Work sampling as a method has been used by nurse researchers for over 50 years (Walker et al 2007) but its application exclusive to studying nurse practitioner work is scant. One study used work sampling methods to effectively compare the management of ICU patients by nurse practitioners with student physicians (Hoffman 2003). Rosenfeld et al (2003) developed and validated a work sampling tool to examine acute care nurse practitioner work activities using a self-completing survey. Most other work sampling research in nursing related to nursing in roles and settings other than nurse practitioner service.

The study reported here is part of a large funded study into nurse practitioner service. The Australian Nurse Practitioner Study (AUSPRAC) is a national study phased over three years. The nurse practitioner role is less than ten years old in Australia and the study was designed to provide essential information for Australian health service planners, regulators and consumer groups. Phase two of this study reported here was conducted in 2008 and involved in-depth investigation into the process and pattern of nurse practitioner work drawing upon work sampling methodology. This paper reports on development and validation of an instrument and processes to conduct a valid and reliable national study of nurse practitioner work activities across diverse contextual and clinical service models.

The Study

Findings from Phase One of AUSPRAC revealed that nurse practitioners in Australia provided healthcare across diverse services from community centres to hospitals, nursing homes, and rural and remote settings; and to individuals from all ages, families, communities and groups (Gardner et al 2009). Nurse practitioner service is based upon health care needs of specific populations and contexts and the authors have scant information that enables comparison between model specific and generic patterns of this practice. The approach to work sampling adopted in this study was necessarily a departure from the traditional approaches in that the study aimed to focus on work patterns of:

- individual clinicians rather than teams;
- clinicians dispersed across a broad geographical area;
- clinicians practicing in diverse service models; and
- who practice according to generic competencies regulated at national level.

This research aim called for innovation in instrument development, data collection and recruitment and training of research staff.

Instrument development

The nature of the nurse practitioner role and the approach to work sampling adopted in this study required development of a work sampling instrument that would capture nurse practitioner-specific patterns of work. This instrument development involved reference to the literature, working from the basis of validated tools (Pelletier and Duffield 2003; Rosenfeld et al 2003; Urden and Roode 1997), and informed by the Australian Nurse Practitioner Competency Standards (ANMC 2006).

The work category labels published in this literature were *direct care, indirect care, unit related* and *personal*. the authors replaced the *unit related* category with *service related*. The focus on service addressed clinical leadership competencies and enabled us to capture the health service, rather than ward or unit, context of nurse practitioners' work. Within each of these categories is grouped a number of activities. The activities were drawn from the previously cited instruments and adapted to conform to the nurse practitioner level of clinical practice with reference to the ANMC Competency Standards (2006). Each activity has a numerical code and a clear, evidence based definition. The definition of each activity identifies the extended and autonomous nature of nurse practitioner service. See table 1 for the organisation of categories, activities and codes that directed data collection.

Table 1: Work Sampling Instrument – Nurse Practitioner Categorised Activities

Direct Care	Indirect Care	Service Related	Personal
1. Physical assessment	14. Handover	23. Travel†	30. Personal
2. History taking	15. Fills out standardised forms	24. Computer data retrieval: service	
3. Communicates diagnosis	16. Documents in progress notes and charts	25. Research and audit	
4. Requests diagnostic investigations/procedures	17. Computer data entry: patient	26. Meetings and Administration	
5. Performs diagnostic investigations/procedures	18. Computer data retrieval: patient	27. Preceptoring	
6. Analyses/interprets diagnostic investigations	19. Coordinates care	28. Continuing professional development: self	
7. Performs/manages therapeutic procedures	20. Discharge planning	29. Provision of professional development: others	
8. Prescribes medication	21. Used references for patient care (text/electronic)		
9. Administers medication	22. Sets up and prepares room/ equipment		
10. Interacts with patient/ family/caregiver			
11. Teaching			
12. Initiates patient transfers/ discharge			
13. Telemedicine			

Direct Care includes all nurse practitioner activities performed in the presence of the patient/ family/ caregiver and there are 13 activities in this category. The category of *Indirect Care* includes all activities performed away from the patient but on a specific patient's behalf and there are nine activities in this category. The *Service Related* category comprises seven activities that are not patient specific and include clinical leadership responsibilities that are part of the nurse practitioner role and competency standards. Finally, consistent with other work sampling instruments, the category of *Personal* was included to account for all personal activities not related to patient care, service or professional development (Fontaine et al 2000; Pelletier and Duffield 2003; Urden and Roode 1997). Activities included in this category relate to meals, breaks, adjusting personal schedules, personal phone calls and socialising with co-workers.

Pelletier and Duffield (2003) argued that a successfully designed tool incorporates easily labelled and marked timeframe boxes or grids. However, there is no consensus in the literature on time frames for work sampling data collection and the time interval between each observation varies in reported work sampling studies. Observations are recorded at various intervals ranging from 5 to 20 minutes, different shift times across morning, evening or night shifts and overall data collection period vary between seven days (Hendrich et al 2008), one month (Hurst 2005) to six weeks (Pelletier and Duffield 2003). There is no justification in published studied for the period of data collection or the requisite number of observations that are required to produce an accurate picture of work activities or patterns (Ampt et al 2007; NHMRC 1998; Pelletier and Duffield 2003). For this study our data collection patterns followed the schedule used by Urden and Roode (1997); data were collected at ten minute intervals in forty, two hour time blocks randomly allocated over a six week period, seven days a week, across all shifts.

The layout design of the data collection instrument was adapted from tools used by Pelletier and Duffield

(2003) and Rosenfeld et al (2003). The instrument has a section to record the participant nurse practitioner unique identifier code and a series of six boxes to record observations by date, day of the week and twelve observations points. For example, for time period 0700 – 0900 hours, the study tool included twelve data collection points occurring every ten minutes starting at time zero and finishing at time 110 (see table 2). The number corresponding to the activity observed is entered against that ten minute time point. Because the activity of travel is non-specific and highly variable across models there is an area on the instrument to record the amount of time spent in transit/travel from patient-to-patient.

Table 2: work sampling instrument – data collection

Work Sampling Instrument

Date:		**Date:**		**Date:**		**Date:**		**Date:**		**Date:**	
Day:		**Day:**		**Day:**		**Day:**		**Day:**		**Day:**	
Time Period: *		**Time Period:**		**Time Period:**		**Time Period:**		**Time Period:**		**Time Period:**	
Time	**Activity Code**	**Time**	**Activity Code**	**Time**	**Activity Code**	**Time**	**Activity Code**	**Time**	**Activity Code**	**Time**	**Activity Code**
0		0		0		0		0		0	
10		10		10		10		10		10	
20		20		20		20		20		20	
30		30		30		30		30		30	
40		40		40		40		40		40	
50		50		50		50		50		50	
60		60		60		60		60		60	
70		70		70		70		70		70	
80		80		80		80		80		80	
90		90		90		90		90		90	
100		100		100		100		100		100	
110		110		110		110		110		110	

* Time period: enter data collection period here. For example, 0900 – 1100hours.

Validation of work sampling instrument

Face and content validity of the instrument was established through several measures. Content validity of the work sampling instrument was addressed by undertaking a thorough review of the literature followed by a review of the instrument by an international panel of experts. The panel assembled consisted of five members; clinical experts, nurse practitioner and a pyschometrician experienced in work sampling methods. Only items that reached 100% consensual validation by the panel were retained. The instrument was then subjected to a pilot study to test the consensus decision on the activity items. The pilot was conducted with nurse practitioners over three sites; one from a metropolitan emergency department and one from an outer metropolitan emergency department and the third from a renal service in a large metropolitan tertiary referral hospital. A two hour observation session was conducted at each site collecting a total of 36 observations. Following this trial of the instrument, the expert panel and the researchers reviewed the data and clarified the accuracy and appropriateness of the activities. The final instrument is illustrated in tables 1 and 2

Whilst standard approaches were used to establish validity of the instrument, establishing reliability for work sampling measurement does not have a standardised approach and consequently has received little attention in the literature. For example, item-correlation approaches, such as Cronbach's alpha, are an inappropriate method of quantifying reliability in the work sampling context in that the instrument is formative in nature. The activity

frequencies cause or form the nurse practitioner's distribution of time across the four work categories. There is no reason to expect items to be correlated with each other in general, in fact they are mutually exclusive, and the same total score in each work category may be derived from different frequencies of the same activities. Inter-rater reliability of data collectors however is essential in work sampling research and is addressed in the next section.

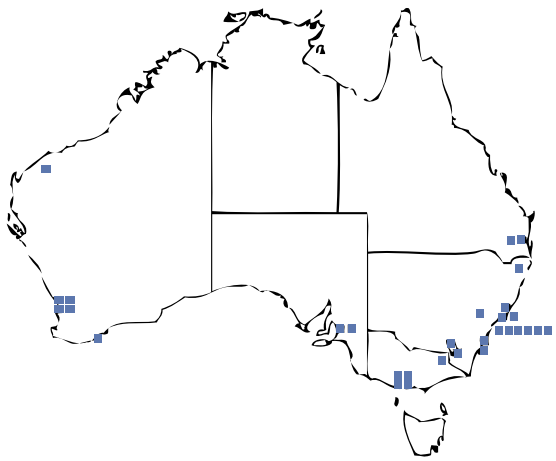
Data collection processes

Australia is the sixth largest country in the world in terms of overall land area but has the lowest population density per square kilometre (Pink 2008). The country has a surface area of more than 7.7 million square kilometres and a population of just over 21 million people who live in widely separated cities primarily along its 36,000 kilometres of coastline (Pink 2008). Access to health services in Australia is influenced by the number and distribution of health professionals and the challenges of providing service for populations dispersed over diverse geographical areas.

A weighted, stratified sample of 30 participants was randomly selected from 144 nurse practitioners who registered their interest in participating in this work sampling study. Stratification was weighted according to the population number of nurse practitioners per state/territory and across metropolitan or non-metropolitan region (see figure 1). According to the Australian Institute of Health and Welfare (2004), metropolitan zones include capital cities and other metropolitan centres with a population of more than 100,000 people and non-metropolitan zones include those with a population of less than 100,000 people. At the time of the study Tasmania and Northern Territory had not formalised the nurse practitioner role and so were not included in the study.

As already discussed the approach to work sampling in this study was to observe individual clinicians for a total of eighty hours with times and days for data collection randomly selected from a six week period. One data collector (or equivalent) was needed to observe one individual nurse practitioner for the duration of the data collection period. Ethics approval to conduct the study was granted through application to 23 Human Research Ethics Committees and Research Governance bodies.

Figure 1: distribution of data collection sites



Recruitment, training and reliability of data collectors

Thirty five data collectors were recruited throughout Australia from metropolitan, rural and remote locations where participating nurse practitioners worked (figure 1). Recruitment was conducted at the local level and organised through state/territory based AUSPRAC project centres. The literature on work sampling methods asserts the importance of establishing reliability across data collectors (Pelletier and Duffield 2003; Urden and Roode 1997; Herdman et al 2009) however information on processes used is scant. One study reported using the preparatory training session to ensure consistency and conducted inter-rater reliability testing with scenarios (Herdman et al 2009). Pelletier and Duffield (2003) cautioned that nurses frequently perform more than one activity at a time, making it essential that data collectors are trained to accurately identify and record the primary activity being performed. For our study random check for rater reliability in the field was not possible due to the geographical spread and in some cases remoteness of the research sites, it was therefore important that inter-rater reliability was established before data collection commenced. The authors achieved this through a sophisticated

training program which incorporated inter-rater reliability testing. Additionally a two day practice period was built in to the data collection schedule for each site.

A self-directed, competency based training package using a computer assisted instruction modality was designed to ensure standardised and competent data collection. A researcher experienced in work sampling methods, a nurse practitioner and a multimedia designer collaborated in the development of the training program to maximise the organisation, navigation, readability and appropriateness of the content, consistent with best practice in this field (Green et al 2007). Use of this electronic medium for the training program enabled data collectors to complete their training regardless of their geographical location. The training program was self-paced and interactive. Each data collector was provided with a customised training package that included the CD-ROM, documents including literature on work sampling research, work sampling categories and activities with detailed definitions, the data collection instrument and an on-line registration code. Registration enabled the researchers in the centralised Research Coordinating Centre, to monitor the progress of each data collector, provide individualised helpdesk service and to validate level of accuracy and competency before the data collector could commence data collection.

The training program comprised three modules based on five hours of live video material obtained by filming a nurse practitioner's working day. The Modules were i) an introduction to work sampling, ii) skill-based tutorials and iii) an inter-rater reliability testing module. In Module One, using interactive coaching activities, the data collector learnt about work categories and work activities and how to use the work sampling instrument. Module Two contained nine tutorials in which the data collector was required to apply their knowledge of coding work activities. Each tutorial had to be successfully completed before progressing to the next. In each tutorial data collectors watched a short video of a nurse practitioner in action. Visual cues were used to prompt recording the nurse practitioner's work activity at a set point in time. If an incorrect category or activity was selected the user was provided with instant feedback on why the activity selected may have been incorrect and given the opportunity to try again before proceeding to the next tutorial.

Module Three was the final assessment and inter-rater reliability measurement which could only be attempted on successful completion of Modules One and Two. In Module Three each data collector completed a final two hour episode of work sampling data collection. This final data collection activity was based on a two hour video of a nurse practitioner working, providing real life conditions of actual data collection. The data collector was required to watch the video and record observations at ten minute intervals signalled in the video by discrete cues; a total of twelve observations were recorded. The use of a cue (i.e. flashing green light at the bottom of the screen), ensured that each user was observing the exact same activity; an important consideration when comparing the accuracy of an individual's response with the gold standard. On completion of this full simulated work sampling activity the data collector submitted their data sheet online to the Research Coordinating Centre where it was compared for reliability with the gold standard – a master data sheet coded by a researcher experienced in work sampling.

Hence, each data collector was tested for inter-rater reliability through a mastery learning approach. At least 90% accuracy was required to successfully pass the assessment. Mastery learning is a technique similar to competency-based education whereby the learner has to acquire essential knowledge and skill, measured rigorously against fixed achievement standards without regard to the time needed to reach the outcome (Wayne et al 2006). Achievement of mastery indicates a much higher level of performance than competence alone (Wayne et al 2006). Practice, feedback and remediation in a supportive environment were key components of this training package and throughout the training program, regular telephone support was provided

to each of the data collectors in order to provide feedback and opportunity for questions, discussions and problem-solving.

CONCLUSION

The findings from work sampling research provide important information for health service managers but there are methodological limitations that need to be considered by researchers considering this approach. Data collection is expensive; observers need to be trained and engaged in sufficient numbers to cover a range of research sites. Furthermore this is descriptive research related to work patterns of a group, it does not allow for evaluation of an individual's practice or the quality of practice. Not-withstanding these limitations, the preparation and development of a new approach to investigating the patterns of nurse practitioner work activity with work sampling methods provides the groundwork for evaluation of nurse practitioner service nationally and lays the foundations for international collaboration in nurse practitioner research.

Work sampling has been used by researchers to describe clinicians' work activities and compare work patterns across discipline groups and roles within disciplines. However extant methods and instruments were considered not sensitive enough to capture the extended practice activities of nurse practitioner work or patterns of service. In this national study the authors adapted and validated an innovative nurse practitioner-specific work sampling instrument that is designed to capture generic work activities and is thus relevant across different nurse practitioner service models. The authors have also described the development and successful application of a sophisticated on-line training program that achieved nationally consistent data collection across diverse geographical settings.

There is scant information in the literature on monitoring or evaluating implementation of workforce reform models. This methodological paper makes an important contribution to health services research in that it provides a detailed report on the development and validation of materials and processes to conduct a nation-wide study into nurse practitioner service. As such, the paper provides a template, resources and comprehensive description that can be used by other researchers seeking to replicate this study or adopt our tools and methods to evaluate the service of nurse practitioners or other emerging health care providers.

REFERENCES

Ampt, A., Westbrook, J., Creswick, N. and Mallock N. 2007. A comparison of self-reported and observational work sampling techniques for measuring time in nursing tasks. The Journal of Health Service Research Policy, 12(1):18-24.

Australian Institute of Health and Welfare (AIHW). 2004. Rural, Regional and Remote Health: A Guide to Remoteness. Rural, Remote, Metropolitan Access Classification 1991 Census Edition, Australian Government Publishing Service, Canberra. www.aihw.gov.au/publications/phe/rrrh-gtrc/rrrh-gtrc.pdf (Accessed on 30/6/09).

Australian Nursing and Midwifery Council (ANMC). 2006. National Competency Standards for the Nurse Practitioner. 1st Ed. Australian Nursing and Midwifery Council, Dickson, ACT. www.anmc.org.au/docs/Publications/Competency%20Standards%20for%20the%20Nurse%20Practitioner.pdf (Accessed on 30/6/09).

Borgmeyer, A., Gyr, P.M., Jamerson, P.A. and Henry, L.D. 2008. Evaluation of the role of the pediatric nurse practitioner in an inpatient asthma program. Journal of Pediatric Healthcare, 22(5):273-281.

Burke, T.A., McKee, J.R., Wilson, H.C., Donahue, R.M.J., Batenhorst A.S. and Pathak, D.S. 2000. A comparison of time-and-motion and self-reporting methods of work management. Journal of Nursing Administration, 30(3):118-125.

Canadian Nurse Practitioner Initiative (CNPI). 2006. Nurse Practitioners: The time is now. The Canadian Nurse Practitioner Initiative, Ottawa. 206.191.29.104/documents/pdf/Nurse_Practitioners_The_Time_is_Now_e.pdf (Accessed on 30/6/09).

Currie, J., Edwards, L., Colligan M. and Crouch R. 2007. A time for international standards?; Comparing the emergency nurse practitioner role in the UK, Australia and New Zealand. Accident and Emergency Nursing, 15:210-216.

Dierick-van Daele, A.T.M., Metsemakers, J.F.M., Derckx, E.W.C., Spreeuwenberg, C. and Vrijhoef, H.J.M. 2009. Nurse practitioners substituting for general practitioners: randomized control trials. Journal of Advanced Nursing, 65(2):391-401.

Donald, F.C. and McCurdy, C. 2002. Review: Nurse practitioner primary care improves patient satisfaction and quality of care with no health outcomes. Evidence-Based Nursing, 5(4):121.

Eve, L. 2005. Defining the characteristics of the nurse practitioner role. Nursing Times, 101(25):30-32.

Fontaine, B., Speedie, S., Abelson, D. and Wold, C. 2000. A work-sampling tool to measure the effect of electronic medical record implementation on health care workers. Journal of Ambulatory Care Management, 23(1):71-85.

Gardner, A., Gardner, G., Middleton, S. and Della, P. 2009. The status of Australian Nurse Practitioners: Findings from the first national census. Australian Health Review, (in press, accepted 9/3/09).

Gardner, G., Carryer, J., Gardner, A. and Dunn, S. 2006. Nurse Practitioner competency standards: findings from collaborative Australian and New Zealand research. International Journal of Nursing Studies, 43(5):601-610.

Giessel, C. 2006. Alaska advanced nurse practitioner regulation. Alaska Nurse, 56(4):8-9.

Green, R., Eppler, M., Ironsmith, M. and Wuensch, K. 2007. Review question formats and web design usability in computer-assisted instruction. British Journal of Educational Technology, 38(4):679-86.

Hendrich, A., Chow, M., Skierczynski, B. and Lu, Z. 2008. A 36-hospital time and motion study: How do medical-surgical nurses spend their time? The Permanente Journal, 12(3):25-34.

Herdman, T.H., Burgess, L.P.A., Ebright, P.R. and Paulson, S.S. 2009. Impact of continuous vigilance monitoring on nursing workflow. Journal of Nursing Administration, 39(3):123-129.

Hoffman, L., Tasota, F., Scharfenberg, C., Zullo, T. and Donahoe, M. 2003. Management of patients in the intensive care unit: Comparison via work sampling analysis of an acute care nurse practitioner and physicians in training. American Journal of Critical Care, 12(5):436-439.

Hurst, K. 2004. UK ward design: Patient dependency, nursing workload, staffing and quality – An observational study. International Journal of Nursing Studies, 45:370-381.

Laurant, M., Reeves, D., Hermens, R., Braspenning, J., Grol, R. and Sibbald, B. 2004. Substitution of doctors by nurses in primary care. Cochrane Database of Systematic Reviews, Issue 4, Article No: CD001271.DOI10.1002/14651858.CD001271.pub2

LeCuyer, E., DeSocio, J., Brody, M., Schlick, R. and Menkens, R. 2009. From objectives to competencies for use in a graduate curriculum. Archives of Psychiatric Nursing, 23(3):185-199.

National Health and Medical Research Council (NHMRC). 1998. Review of Services Offered by Midwives. National Health and Medical Research Council, Canberra. www.nhmrc.gov.au/publications/synopses/_files/wh26.pdf (Accessed 30/6/09).

Nicolson, P., Burr, J. and Powell, J. 2005. Becoming an advanced practitioner in neonatal nursing: a psycho-social study of the relationship between educational preparation and role development. Journal of Clinical Nursing, 14 (6):727-738.

Pelletier, D. and Duffield, C. 2003. Work sampling: valuable methodology to define nursing practice patterns. Nursing and Health Sciences 5(1):31-38.

Pink, B. 2008. Year Book Australia. Australian Bureau of Statistics, Canberra.

Pirret, A.M. 2008. The role and effectiveness of a nurse practitioner led critical care outreach service. Intensive and Critical Nursing Care, 24:375-382.

Rosenfeld, P., McEvoy, M. and Glassman, K. 2003. Measuring practice patterns among acute care nurse practitioners. Journal of Nursing Administration, 33(3):159-165.

Stanley, J. 2009. Reaching consensus on a regulatory model: What does this mean for APRNs? Journal for Nurse Practitioners, 5(2):99-104.

Urden, L. and Roode, J. 1997. Work Sampling: a decision-making tool for determining resources and work design. Journal of Nursing Administration 27(9):34-41.

Walker, K., Donoghue, J. and Mitten-Lewis, S. 2007. Measuring the impact of a team model of nursing practice using work sampling. Australian Health Review 31(1):98-107.

Wayne, D., Butter, J., Siddall, V., Fudala, M., Wade, L., Feinglass, J. and McGaghie, W. 2006. Mastery learning of advanced cardiac life support skills by internal medicine residents using simulation technology and deliberate practice. Journal of General Medicine, 21(3):251-256.

Wilson, A. and Shifaza, F. 2008. An evaluation of the effectiveness and acceptability of nurse practitioners in an adult emergency department. International Journal of Nursing Practice, 14:149-156.

Nursing resource implications of the unoccupied bed

AUTHORS

Bronwyn Collins
Nurse Manager, Workforce Planning and Management Unit, Royal Brisbane and Women's Hospital, Australia.

Lesley Fleming
AOM, Executive Director of Nursing Services, Royal Brisbane and Women's Hospital, Australia.

Bette-Anne Hine
Nurse Unit Manager, Surgical and Perioperative Services, Royal Brisbane and Women's Hospital, Australia.

Johanna Stephenson
Midwifery and Nurse Manager, Women's and Newborn Services, Royal Brisbane and Women's Hospital, Australia.

Kate Veach
Nurse Manager, Internal Medicine services, Royal Brisbane and Women's Hospital, Australia.

Sue Anderson
Nurse Manager, Cancer Care Services, Royal Brisbane and Women's Hospital, Australia.

Tim Mawson
Manager, Workforce Planning and Management Unit, Royal Brisbane and Women's Hospital, Australia.

Joan Webster
Nursing Director, Research, Royal Brisbane and Women's Hospital, Australia.
joan_webster@health.qld.gov.au

Acknowledgement
The financial support, strategic insight, leadership and direction for this study came from the office of the Executive Director, Nursing Services, Royal Brisbane and Women's Hospital.

ABSTRACT

Objective
To explore the specific factors that impact on nursing resources in relation to the 'unoccupied bed'.

Design
A descriptive observational study was used to identify and classify tasks associated with an 'unoccupied bed'

Methods
Four project nurses held informal discussions with all levels of staff in four divisions of the hospital (surgery, internal medicine, cancer care and women's and newborn). Field notes were made throughout the process and the project nurses met regularly to compare findings and identify similarities.

Results
This study identified three main areas of nursing work, which centre on the 'unoccupied bed': 1) bed preparation for admission; 2) temporary transfer; 3) bed preparation post patient discharge.

Conclusion
The unoccupied bed is not resource neutral and may involve considerable nursing time. The time associated with each of the reasons for the bed being unoccupied remains to be quantified.

KEY WORDS

unoccupied bed; nursing management; healthcare costs; nursing time.

INTRODUCTION

Due to financial constraints, acute inpatient bed demand and the absolute necessity to ensure efficiency in the utilisation of health care resources, the 'unoccupied bed' within the tertiary health care setting has become a significant topic of conversation; with a focus on increasing the occupancy (Nguyen 2005). However, the 'unoccupied bed' is not a phenomenon of recent interest. Over 50 years ago, matters related to bed utilisation started to surface (Anon 1954). Issues related to keeping beds vacant in case of unexpected emergencies; retaining beds for certain surgeons; and inflexible policies around male and female beds were aired. An occupancy rate of over 90% was thought to be achievable, with staff cooperation. Three areas where improvements could be made were identified. First, preadmission clinics were proposed, to counter delays in starting treatment; secondly, estimating the discharge date and planning for discharge at the time of admission; and thirdly, investigating which procedures could realistically be provided in an outpatient setting. Transfers between hospitals, from those with high occupancy to those where there was less pressure on beds, was also recommended (Anon 1954). The issues around occupancy have not gone away; we continue to grapple with them today, to improve patient flow and maximise bed utilisation (Dedhia et al 2009; Lin et al 2009).

Concern with unoccupied beds is primarily financial (Nour El Din 2006) and is not a contemporary problem (Roswell 1953). In 1951 a report was published which showed the cost of low occupancy increased the cost of hospital beds (Roswell 1953). The example provided was, if 55% of beds were occupied, the average cost per occupied bed was US $7,198 per annum; whereas at 85% occupancy the cost per occupied bed was US$6,085 per annum. The difference was due to the fact that fixed costs are incurred, irrespective of occupancy (Roswell 1953) and this difference was independent of potential loss of revenue because the bed was vacant.

These problems have become more acute as the cost of health care rises exponentially (Anon 2009; Halpern and Pastores 2009), so it is important to explore reasons for perceived inefficiency. As the 'unoccupied bed' quite often falls into this category a greater understanding and acknowledgement of the nursing work required to maintain this resource is required.

OBJECTIVE

The purpose of this paper was to explore the specific factors that impact on nursing resources in relation to the 'unoccupied bed'.

METHODS

The study hospital is a 950-bed tertiary, teaching institution, which admits approximately 700 patients per week (excluding mental health admissions). In early 2009, a Nursing Resources Benchmarking Project, sponsored by the Executive Director of Nursing Services, was initiated. Part of the project involved clarifying factors impacting on the calculation of nursing resource requirements within the hospital. Four broad areas were identified for priority: occupancy; acuity/complexity; direct versus indirect hours; and skill mix. Four project officers, with workforce management experience as nurse managers or nurse unit managers, were back-filled for a three month period between April and June in 2009 to assist with the project. Their roles were to help with scoping the project, to undertake data collection that would provide more detailed information about each of the priority areas, and to assist in data analysis. The current paper describes only the data collected in relation to the broad area of occupancy, specifically factors associated with a bed being 'unoccupied'

Ethics approval was not required. The project did not impact on patient care and the questions asked of staff focused on understanding routine management practices. Moreover, the investigation was undertaken by managers, in their own clinical areas, as part of a benchmarking process.

Procedure

The project officers were from four different clinical services: Women's and Newborn; Cancer Care; Internal Medicine; and Surgical and Perioperative. Each focused on collecting data from their own services and documented actual, rather than assumed practices in relation to the four priority areas. They spoke extensively with different categories of staff including nurse unit managers, clinical nursing and midwifery staff, and ward receptionists to obtain a number of perspectives on the issues. Wherever possible, rationales or background information for certain findings were gathered to provide a context in which to interpret the findings. Questions in relation to organisational processes were also raised and clarified as appropriate. Field notes were made throughout the data collection period.

The four project officers met regularly throughout the study with the team leader to compare findings and to develop approaches to data collection and collation. These meetings were extremely useful to identify aspects requiring further investigation as important issues became apparent. They provided an opportunity to share strategies, discuss problems and categorise the work. It was an iterative process of data collection and refinement of data collection methods. For example, who were the most useful contacts; ensuring that meanings assigned to pieces of data were similar; and making certain that questions were asked in standard ways. There was also a continual process of documentation, which enabled ongoing clarification and validation.

ANALYSIS

Analysis and data collection were intertwined. In the team meetings, field notes were compared and findings discussed. This enabled specific issues to be revisited in one or more services to ensure a degree of consistency in data was achieved. Content validity was supported through the emergence of substantively similar findings between the project officers. Using their observations, general themes and sub-categories, which emerged time after time, in each service were able to be described.

Table 1: Reasons why a bed is unoccupied and the nursing activities associated with an unoccupied bed.

Reasons	Associated nursing activities
Temporary transfer	1. Documentation and data entry 2. Preparation for the delivery of patient care on return of the patient including: requesting and collecting equipment, consumables and medications, preparation of the environment, liaison with allied health teams, staff education relevant to the patient's treatment 3. Support of the family and significant others 4. Escorting the patient to and from the care area, including the organisation of transport assistance 5. Communication with the temporary care area 6. Reprioritisation and delivery of care to the remaining patients allocated to the nurse
Patient expected	1. Communication with Shift Coordinators / Bed Managers / Patient Allocations regarding the incoming patient 2. Liaison with treating team/s and allied health professionals 3. Requests for and collection of required equipment, consumables, medications 4. Preparation of documentation 5. Preparing for the dietary needs of the patient (particularly if after hours)
Patient discharged	1. Clean bed area 2. Restock / reset bed area in preparation for next patient 3. Communication with Shift Coordinators / Bed Managers / Patient Allocations regarding patients requiring placement 4. Documentation, filing, data entry 5. Liaison with internal and external health care professionals about ongoing care

RESULTS

Ward nurses provided detailed explanations of the activities they perform when a bed is unoccupied. Three reasons for an unoccupied bed were identified: 1) bed preparation, pre-patient admission; 2) temporary transfer, to facilitate other health service related provision; 3) bed preparation, post patient discharge. The nursing work, which is associated with each of the reasons for the bed being unoccupied are detailed in table 1. Nurses who were interviewed also highlighted that the time required for these activities and the complexity involved increased considerably after hours, when support systems are reduced; for example when administrative staff were off duty, catering facilities were unavailable or senior decision makers were absent.

DISCUSSION

This study provides the first in-depth analysis of the nursing work that is involved in managing an unoccupied bed. It differs from other investigations, conducted in a number of countries, which generally categorise nursing work into one or more of the following activities 'direct care', 'indirect care', 'unit related', 'documentation', 'professional', and 'personal time' (Capuano et al 2005; Herdman et al 2009; Weigl et al 2009; Williams et al 2009). The work is particularly important when bed occupancy rates, in some areas, may be in excess of 100%, indicating that this work may need to be repeated more than once in any 24-hour period.

The study is also important because it clearly shows that the unoccupied bed is not resource neutral. This has implications for nurses because calculations of nursing resource requirements are based, in part, on the rate of occupied beds, or the number of patients receiving inpatient care divided by the number of available beds (DeLia 2006). Such calculations ignore the nursing work consumed by an unoccupied bed and may contribute to inappropriate staffing levels.

Of the three reasons identified for a bed being unoccupied, discharge process and planning (Jack et al 2009; Preyde 2009; Steffen 2009), and the role of discharge co-ordinators (Day 2009) have received the most attention but there is practically no information about how this affects the clinical nurse. One exception is a recent report, which used focus groups to explore health professional's views about the discharge process (Connolly et al 2009). However, the unoccupied bed was not central to the study, so it drew out different responses from staff. The analysis in the Connolly (2009) study highlighted tensions between the need to 'get patients out' and the need to 'keep them in' and the issues surrounding these tensions for health professionals. Consequently there was minimal cross-over in findings between this study and theirs; apart from issues around equipment management and time involved in communicating with internal and external health care providers about ongoing care.

Limited information was available about the other two components of work associated with the unoccupied bed; planning for an imminent arrival and temporary transfers to other areas of the hospital. For example, although the proportion of nursing time allocated to tasks such as 'admission and assessment'; 'room or equipment set-up'; and 'escorting patients' has been calculated in work sampling studies (Chaboyer et al 2008; Williams et al 2009), an overall assessment of the total time consumed in managing the unoccupied bed in relation to these, or other activities that have been identified is not available.

LIMITATIONS AND STRENGTHS

The investigation was planned as a scoping study, to provide nurse managers with detailed information about the complex issues surrounding nursing and midwifery workloads and staffing. Because of this, data collection and analysis were not rigorously research based. However, the authors believe this may also be a strength of the study. Those collecting data were known insiders and had unencumbered access to appropriate informants, those who could reliably provide the information required. Results are also intuitively recognisable, adding validity to the findings. No attempt was made to measure the amount of time spent on any of the activities of the unoccupied bed, nor who undertakes these activities.

However, the study does provide a clear framework for future studies, which may wish to quantify the nursing work in this area. It also adds to conversations around capacity planning and what data should be factored into new models (Gondález-Torre 2002).

CONCLUSION

There are at least three reasons for a hospital bed to be unoccupied (temporary transfer, bed preparation for admission and patient discharge) and, for each of these reasons there are multiple associated nursing tasks. These tasks consume considerable resources, which remain to be quantified.

REFERENCES

Anon. 2009. Trends in hospital cost per day. Healthcare Financial Management, 63(6):120.

Anon. 1954. Unoccupied hospital beds. Lancet, 267(6845):964.

Capuano, T., Bokovoy, J., Hitchings, K. and Houser, J. 2005. Use of a validated model to evaluate the impact of the work environment on outcomes at a magnet hospital. Health Care Management Review, 30(3):229-236.

Chaboyer, W., Wallis, M., Duffield, C., Courtney, M., Seaton, P., Holzhauser, K., Schulter, J. and Bost, N. 2008. A comparison of activities undertaken by enrolled and registered nurses on medical wards in Australia: an observational study. International Journal of Nursing Studies, 45(9):1274-1284.

Connolly, M., Grimshaw, J., Dodd, M., Cawthorne, J., Hulme, T., Everitt, S., Tierney, S. and Deaton, C. 2009. Systems and people under pressure: the discharge process in an acute hospital. Journal of Clinical Nursing, 18(4):549-558.

Day, M.R., McCarthy, G., and Coffey, A. 2009. Discharge planning: the role of the discharge co-ordinator. Nursing Older People, 21(1):26-31.

Dedhia, P., Kravet, S., Bulger, J., Hinson, T., Sridharan, A., Kolodner, K., Wright, S. and Howell. 2009. A Quality Improvement Intervention to Facilitate the Transition of Older Adults from Three Hospitals Back to Their Homes. Journal of the American Geriatric Society Aug 18. [Epub ahead of print].

DeLia, P. 2006. Annual bed statistics give a misleading picture of hospital surge capacity. Annals of Emergency Medicine, 48(4):384-388.

Gondález-Torre, P.L., Adenso-Díaz, B. and Sánchez-Molero, O. 2002. Capacity planning in hospital Nursing: A model for minimal staff calculation. Nursing Economic, 20(1):28-36.

Halpern, N.A., and Pastores, S.M. 2009. Critical care medicine in the United States 2000-2005: An analysis of bed numbers, occupancy rates, payer mix, and costs. Critical Care Medicine. Aug 27. [Epub ahead of print].

Herdman, T.H., Burgess, L.P., Ebright, P.R., Paulson, S.S., Powell-Cope, G., Hancock, H., Wada, E and Cadman, E. 2009. Impact of continuous vigilance monitoring on nursing workflow. Journal of Nursing Administration, 39(3):123-129.

Jack, B.W., Chetty, V.K., Anthony, D., Greenwald, J.L., Sanchez, G.M., Johnson, A.E., Forsythe, S.R; O'Donnell, J.K; Paasche-Orlow, M.K; Manasseh, C; Martin, S. and Culpepper, L. 2009. A reengineered hospital discharge program to decrease rehospitalization: a randomized trial. Annals of Internal Medicine, 150(3):178-187.

Lin, P.C., Wang, C.H., Chen, C.S., Liao, L.P., Kao, S.F. and Wu, H.F. 2009. To evaluate the effectiveness of a discharge-planning programme for hip fracture patients. Journal of Clinical Nursing, 18(11):1632-1639.

Nguyen, J.M., Six, P., Antonioli, D., Glemain, P., Potel, G., Lombrail, P., Le Beux, P. 2005. A simple method to optimize hospital bed capacity. International Journal of Medical Information, 74(1):39-49.

Nour El Din, M.M. 2006. Bed utilization fluctuations at a university hospital in Eastern Saudi Arabia and their impact on hospital cost. Journal of Egyptian Public Health Association, 81(1-2):43-57.

Preyde, M., Macaulay, C. and Dingwall, T. 2009. Discharge planning from hospital to home for elderly patients: a meta-analysis. Journal of Evidence Based Social Work, 6(2):198-216.

Roswell, C.G. 1953. The cost of unoccupied beds. Hospitals, 27(6:1):56-57.

Steffen, S., Kosters, M., Becker, T. and Puschner, B. 2009. Discharge planning in mental health care: a systematic review of the recent literature. Acta Psychiatrica Scandinavica, 120(1):1-9.

Weigl, M., Muller, A., Zupanc, A., and Angerer, P. 2009. Participant observation of time allocation, direct patient contact and simultaneous activities in hospital physicians. BMC Health Services Research, 9, 110, doi: 10.1186/1472-6963-9-110.

Williams, H., Harris, R., and Turner-Stokes, L. 2009. Work sampling: a quantitative analysis of nursing activity in a neuro-rehabilitation setting. Journal of Advanced Nursing, 65(10):2097-2107.

Trends in workplace violence in the remote area nursing workforce

AUTHORS

Tessa Opie
B. Psych (Hons.) PhD Candidate
Centre for Applied Psychological Research, University of South Australia, City East Campus, Adelaide, South Australia.
Tessa.Opie@postgrads.unisa.edu.au

Sue Lenthall
RN, B. Ad Teach, MPH&TM
Project Manager, Back from the Edge Study, Centre for Remote Health, a joint centre of Flinders University and Charles Darwin University, Alice Springs, Northern Territory.

Professor Maureen Dollard
PhD
Director, Centre for Applied Psychological Research, University of South Australia, City East Campus, Adelaide, South Australia.

Professor John Wakerman
MBBS, MTH, FAFPHM, SACRRM
Director, Centre for Remote Health, a joint centre of Flinders University and Charles Darwin University, Alice Springs, Northern Territory.

Professor Martha MacLeod
RN, BA, MA, PhD
Chair, School of Nursing, University of Northern British Columbia, Prince George, BC, Canada.

Associate Professor Sabina Knight
RN, MTH
Remote Health Practice, Centre for Remote Health, a joint centre of Flinders University and Charles Darwin University, Alice Springs, Northern Territory.

Professor Sandra Dunn
RN, ADN, BN, MScN, PhD, FRCNA
Director, Graduate School for Health Practice, Charles Darwin University, Casuarina, Northern Territory.

Greg Rickard
RN, PhD
Principal Nursing Adviser, Northern Territory Department of Health and Families.

ABSTRACT

Objective
To assess incidence of workplace violence in the remote area nursing workforce and to compare present data to data collected 13 years previously.

Design
The research adopted a cross-sectional design, using a structured questionnaire.

Setting
Health centres in very remote Australia.

Subjects
349 nurses working in very remote regions across Australia.

Main Outcome Measure
The main outcome measure was posttraumatic stress disorder (PTSD) symptoms, as assessed using the PTSD Checklist (PCL).

Results
Findings indicate increases in all incidents of reported violence in the workplace between 1995 and 2008. Verbal aggression, property damage and physical violence are the most frequently experienced forms of violence as perpetrated directly towards remote area nurses, with statistically significant positive correlations between all types of workplace violence and PTSD symptoms. Verbal aggression, physical violence and property damage are the most commonly witnessed forms of violence occurring between other people. Statistically significant positive correlations were also found between each type of witnessed violence and PTSD symptoms, excluding sexual abuse/assault. Nurses working in very remote regions in Australia are fearful for their personal safety.

Conclusion
Working in fear for your personal safety can function as a major occupational stressor. The research has implications for the implementation of workplace policies that target the identification, management and prevention of violence in the remote area nursing workforce.

KEY WORDS

Remote Area Nurse, Workplace Violence, Posttraumatic Stress Disorder (PTSD).

INTRODUCTION

The health industry may be one of the most violent industries in Australia (Perrone 1999). Nurses reportedly experience workplace violence at a rate four times greater than the average employee (Gallant-Roman 2008), with more violence-related workers compensation claims (1995/1996) than correctional officers and police officers (Deans 2004 p14). Furthermore, an American National Crime Victimization Survey on violence in the workplace (1993-1999) found that nurses experienced work-related crime at twice the rate of any other health care provider.

In Australia, there are decreasing numbers of health practitioners with increasing remoteness across the country (Productivity Commission 2006), and nurses represent the largest and most evenly distributed health discipline across urban, rural and remote areas. They play a critical role in the delivery of services in very remote regions. Nurses working in isolated, remote areas are also subject to multiple stressors, one of which is violence in the workplace (Lenthall et al 2009). Violence in the workplace has been identified as a significant contributor to turnover in the remote area nursing workforce (Morrell 2005; Kelly 1999; Fisher et al 1996). Whilst the issues of violence and personal safety in this context have long been acknowledged by numerous government and organisational bodies (CRANA 1992), it was not until the mid-nineties that Fisher et al (1996 p1) documented that remote area nurses experienced "frequent and serious episodes of violence, with verbal aggression, property damage and physical violence the most common". Furthermore, the researchers reported that remote area nurses in small communities experienced more workplace violence than their metropolitan counterparts. Specifically, 86% of respondents had experienced aggression, and 43% of respondents had experienced abuse. Occupational violence has a significant impact on the well-being of nurses (Deans 2004), with research suggesting that, as a result of increased exposure to violent or traumatic incidents in the workplace, remote area nurses are at a greater risk of developing conditions such as PTSD (Kelly 1999). It has also been argued that there is an increased susceptibility to anxiety, impaired professional function and difficulties sleeping (Rippon 2000; Robbins et al 1997; Fisher et al 1995).

A key purpose of this paper was to build on existing empirical and anecdotal evidence and to determine whether the incidence of violence against remote area nurses has changed over time. The frequency of various forms of workplace violence and their relationships to PTSD symptoms in this population were assessed.

METHOD

Using a cross-sectional design, a structured questionnaire was distributed to 1,007 nurses working in very remote regions across Australia, according to the ARIA+ (Accessibility/Remoteness Index of Australia Plus) classification system of remoteness (AIHW 2004). Various recognised methods were adopted to maximise survey return, including pre and post survey contact with target health care facilities (Nakash et al 2006; Gore-Felton et al 2002). A database of very remote nursing positions belonging to the Council of Remote Area Nurses of Australia (CRANA) Inc. was accessed for the study. This database was refined by identifying all sites within very remote Australia that employed registered nurses and by searching the web for additional health service facilities, mine sites and tourist resorts that are also located within very remote Australia. The database was then further refined by referring the list of clinics to nurses at a national Council for Remote Area Nurses of Australia (CRANA) Inc. conference for confirmation or amendments. Ethics approval was granted by four human research ethics committees in the Northern Territory and South Australia.

The questionnaire assessed various workplace demands and resources, and further assessed both positive work outcomes and adverse psychological health outcomes. Violence in the workplace was the independent measure of particular relevance to this paper. The construct was assessed by asking

respondents how often they had experienced different manifestations of workplace violence in the preceding 12 months. Responses corresponded with a 4-point scale ranging from zero (*never*) to four (four *times or more*). Violence categories included verbal aggression or obscene language, property damage, physical violence or assault, sexual harassment, sexual abuse/assault, and stalking. Definitions of each of these categories were provided to encourage a more consistent standard of interpretation.

The outcome measure used was PTSD symptoms, which was assessed using the PCL (Weathers et al 1993). The PCL provides a list of 17 fundamental symptoms of PTSD which are clustered into three main symptom categories, including re-experiencing symptoms (e.g. nightmares or flashbacks), hyperarousal symptoms (e.g. easily startled), and avoidance and psychic numbing symptoms (e.g. trying to avoid activities, places or people). It asks respondents to rate "if and how" they have been bothered by any of the listed "reactions" (symptoms) over the past month, in relation to a traumatic experience or event. Responses correspond with a 5-point scale ranging from one (*not at all*) to five (*extremely*). Accordingly, the PCL yields a continuous measure of PTSD symptom severity. The scale demonstrates sound internal reliability ($\alpha = .93$).

Also of relevance was an assessment of nurses' perceptions of community violence and their personal safety. This was achieved by asking respondents how often they felt concerned about "violence in the community" and their "personal safety". Responses corresponded with a 7-point scale, ranging from zero (*never*) to six (*everyday*).

Data from the questionnaire were analysed using the Statistical Package for the Social Sciences (SPSS) for Windows, version 16. Bivariate correlations were performed to assess the relationships between types of violence and posttraumatic stress disorder symptoms. T-tests were performed to analyse the degree of difference between our results and the results from the 1995 study.

FINDINGS

Three hundred and forty-nine (349) nurses working in very remote Australia participated in the study, generating an overall response rate of 34.6%. The majority of respondents from this sample were female (88.5%), with ages ranging from 20 to 68 years ($M = 44$, $SD = 11$).

In the 12 months preceding survey completion, the form of violence most commonly experienced by remote area nurses was verbal aggression (79.5%), followed by property damage (31.6%), physical violence (28.6%), sexual harassment (22.5%), stalking (4.9%) and sexual abuse/assault (2.6%). These results represent incidents of workplace violence that were specifically experienced by remote area nurses only. These figures do not include the witnessing of violent incidents that were directed towards remote area nurses' co-workers, family, friends or other members of the community.

Results further indicate statistically significant positive correlations between all types of workplace violence and PTSD symptoms. Results are displayed in table 1.

Table 1: types and frequencies of workplace violence towards remote area nurses and their correlations with PTSD symptoms.

Type of violence (personal)	Frequency	Correlations with PTSD symptoms
Verbal aggression	79.5%	.25**
Property damage	31.6%	.16**
Physical violence	28.6%	.23**
Sexual harassment	22.5%	.21**
Sexual abuse/assault	2.6%	.16**
Stalking	4.9%	.18**

** = correlation significant at the $p < .01$
* = correlation is significant at the $p < .05$

Results also demonstrated that in the 12 months preceding survey completion, the type of violence most frequently witnessed by remote area nurses towards others was also verbal aggression (85.7%). The next most frequently witnessed types of violence towards others were physical violence (57.9%),

property damage (53.9%), sexual harassment (32.1%), stalking (14.3%) and sexual abuse/assault (10.9%). Statistically significant positive correlations were found between each type of witnessed violence and PTSD symptoms, excluding sexual abuse/assault which was found to have to have no relationship to PTSD symptoms. Results are displayed in Table 2.

Table 2: Types and frequencies of workplace violence witnessed by Remote Area Nurses towards others, and their correlations with Posttraumatic Stress Disorder (PTSD) symptoms.

Type of violence (witnessed)	Frequency	Correlations with PTSD symptoms
Verbal aggression	85.7%	.16**
Property damage	53.9%	.15**
Physical violence	57.9%	.24**
Sexual harassment	32.1%	.30**
Sexual abuse/assault	10.9%	.12
Stalking	14.3%	.16**

** = correlation significant at the $p < .01$
* = correlation significant at the $p < .05$

Comparisons were drawn between data from this study sample and data from a similar sample of 237 Australian remote area nurses from an earlier study (Fisher et al 1995) that also investigated violence in remote communities. As the previous study measured incidents of workplace violence as directed at "you, your family, other clients or health workers", this study amalgamated the data (to include violence towards "you" and violence witnessed as "occurring between other people") in an effort to make the datasets more comparable.

Results indicated a statistically significant increase in the incidence of physical violence ($p < .001$). Statistically significant increases were also found for stalking ($p < .01$), property damage ($p < .05$) and aggression ($p < .05$). Whilst there were increases in the incidence of sexual harassment and sexual abuse/assault, these were not significant. Results are displayed in table 3.

Finally, results relating to perceptions of safety revealed that 86.4% of remote area nurses indicated that they felt concerned about violence in the community, 33.2% of whom felt concerned at least once a week. Two thirds of nurses (66.4%) reported that they felt concerned about their personal safety, 14.3% of whom indicated feeling concerned about this at least once a week.

Table 3: comparisons between the present study sample and previous study sample for type and frequencies of violence experienced by remote area nurses.

Type of violence experienced	Frequency	
	Fisher et al 1995	Data from present study
Verbal aggression	82.1%	91.1%*
Property damage	46.7%	57.6%*
Physical violence	45.1%	61.1%***
Sexual harassment	31.8%	37.8%
Sexual abuse/assault	10.6%	12.0%
Stalking	8.3%	15.8%**

*** = difference is significant at the p < .001
** = difference is significant at the p < .01
* = difference is significant at the p < .05

DISCUSSION

The study found that self-reported incidents of workplace violence appear to have increased significantly in the past thirteen years (Fisher et al 1995). Whilst our study considered nurses working in very remote Australia, a similar trend has been found for nurses working in the public, private and aged care sectors. According to an Australian study conducted by Hegney et al (2006), results demonstrated an increase in workplace violence in each of these three sectors, from 2001 to 2004. A number of other researchers have also argued that violence against nurses is increasing (Jackson et al 2002; Erickson and Williams-Evans 2000; Taylor 2000). This finding runs counter to the various taskforce recommendations and zero tolerance policies that have been established in response to workplace violence in the nursing profession. The Australian Nursing Federation (ANF) (2008) stipulates that "nurses and midwives have the right to expect that employers will implement policies and procedures supporting a zero tolerance approach to occupational violence and aggression". The policy further specifies ways in which the safety and security of the physical environment can be improved, including "minimising public access points" and "implementing systems

for staff to screen patients". Of particular relevance to remote area nurses is the recommendation from the Australian Nursing Federation that employers "develop and implement policies and procedures for nurses and midwives working in isolation or external to the facility" in relation to violence and aggression in the workplace. Despite such policies and recommendations, however, the incidents of workplace violence do appear to be increasing.

Nurses working in very remote Australia are also fearful for their security and well-being, with two thirds of the population reporting concerns for their personal safety. Those remote area nurses who reported higher levels of exposure to violence also reported higher levels of PTSD symptoms, including difficulty sleeping, difficulty concentrating, irritability, feeling distant or cut off, reliving of the trauma and feeling emotionally upset when reminded of the trauma.

Working in fear for your personal safety can function as a major occupational stressor, and indeed, violence in the workplace has been cited as a common reason for resignation in the remote area nursing workforce (Morrell 2005; Kelly 1999; Fisher et al 1996). Alarmingly, nurses are not only resigning from the field, but fewer candidates are choosing to enter (Gallant-Roman 2008).

Whether our results reflect a real increase in actual workplace violence, or whether they reflect an increase in the ability of remote area nurses to better identify it, cannot be absolutely stated. Different sampling strategies were used for the two studies. Respondents from the 1995 sample held membership with the Council for Remote Area Nurses of Australia (CRANA) Inc., while the present study sample included participants irrespective of memberships with professional bodies. Furthermore, the issue of workplace violence is a difficult one to research as victims are often traumatised and receive inadequate emotional support (Rippon 2000). Such experiences may have deterred potential participants from responding to this survey. Fisher et al (1996) further note that nurses working remotely may often choose not to report incidents, such as workplace violence, so as to avoid any unwelcome media attention that may emphasise community problems. However, despite different sampling strategies and the potential for under-reporting, workplace violence against remote area nurses is occurring at unacceptable levels and is "a fundamental violation of their human rights" (Fisher et al 1996 p198).

RECOMMENDATIONS

Workplace violence poses significant threat to the physical and psychological well-being of remote area nurses (Kelly 1999; Fisher et al 1995). Whilst this issue has been acknowledged and responded to at a policy level, there is an increasing need to actively implement these policies in administration and practice. The robust implementation of such policies will require the participation and collaboration of all stakeholders, including remote area nurses themselves, state and federal governments, unions, occupational health and safety representatives, and other professional bodies, such as CRANA*plus*. We need a firm and united front that sends a clear message of zero tolerance of workplace violence.

There is also the capacity to establish zero tolerance assessment teams (Clements et al 2005) to evaluate the needs of the workplace and oversee worksite-specific policies and procedures. Such teams may also support the role of an occupational health nurse who implements compulsory education programs that target the identification and management of violence in the workplace. Additionally, there may be systems for mandatory reporting of violent and aggressive incidents, as well as mandatory debriefing for those individuals affected. Management may also benefit from training that focuses on best-practice provision of staff support. Future research may assess which of these strategies are most effective. Further to education programs, improved psychosocial care and mandatory reporting systems, workplace interventions should target the physical work environment itself, including improved security in the home, workplace and when attending to on-call or out-of-hours duties.

Previous research has demonstrated that while nurses acknowledge the existence of polices for the management of workplace violence, they also report that policies do not necessarily ensure safety (Hegney et al 2006). The time has come to transform policy into robust practice.

REFERENCES

Australian Institute of Health and Welfare (AIHW). 2004. Rural, regional and remote health: a guide to remoteness classifications. AIHW. Cat no. PHE 53. Canberra: AIHW.

Australian Nursing Federation (ANF). 2008. ANF Policy: Zero tolerance of violence and aggression in the workplace. Available at: www.anf.org.au/pdf/policies/P_Zero_tolerance_violence_aggression.pdf

Clements, P.T., DeRanieri, J.T., Clark, K., Manno, M.S. and Kuhn, D.W. 2005. Workplace violence and corporate policy for health care settings. *Nursing Economics,* 23(3):119–124.

Council of Remote Area Nurses of Australia Inc (CRANA). Occupational Health and Safety of Remote Area Nurses. Position paper prepared by Queensland Members of CRANA Executive, 1992.

Deans, C. 2004. Nurses and occupational violence: The role of organisational support in moderating professional competence. *Australian Journal of Advanced Nursing,* 22(2):14–18.

Erickson, J. and Williams-Evans, S. 2000. Attitudes of emergency nurses regarding patient assaults. *Journal of Emergency Nursing,* 26(3):210–215.

Fisher, J., Bradshaw, J., Currie, BA., Klotz, J., Robbins, P., Reid Searle, K., and Smith, J. 1995. *Context of Silence: Violence and the Remote Area Nurse.* Bundaberg: Central Queensland University.

Fisher, J., Bradshaw, J., Currie, B., Klotz, J., Robbins, P., Reid Searl, K., and Smith, J. 1996. Violence and remote area nursing. *Australian Journal of Rural Health,* 4(3):190–199.

Gallant-Roman, M.A. 2008. Strategies and tools to reduce workplace violence. *American Association of Occupational Health Nurses Journal*, 56(11):449–454.

Gore-Felton, C., Koopman, C., Bridges, E., Thoresen, C., and Spiegel, D. 2002. An example of maximizing survey return rates. Methodological issues for health professionals. *Evaluation & the Health Professions*, 25(2):152-168.

Hegney, D., Eley, R., Plank, A., Buikstra, E., and Parker, V. 2006. Workplace violence in Queensland, Australia: The results of a comparative study. *International Journal of Nursing Practice*, 12(4):220–231.

Jackson, D., Clare, J., and Mannix, J. 2002. Who would want to be a nurse? Violence in the workplace – a factor in recruitment and retention. *Journal of Nursing Management*, 10(1):13–20.

Kelly, K. 1999. Preventing job-related post-traumatic stress disorder among remote health practitioners: Best Practice Guidelines. Alice Springs: Council of Remote Area Nurses Australia (CRANA) Inc.

Lenthall, S., Wakerman, J., Opie, T., Dollard, M., Dunn, S., Knight, S., MacLeod, M., and Watson, C. 2009. What stressors remote area nurses? Current knowledge and future action. *Australian Journal of Rural Health,* 17(4):208–213.

Morrell, K. 2005. Towards a typology of nursing turnover: The role of shocks in nurses' decisions to leave. *Journal of Advanced Nursing,* 49(3):315–322.

Nakash, R.A., Hutton, J.L., Jørstad-Stein, E., Gates, S., and Lamb, S.E. (2006). Maximising response to postal questionnaires – A systematic review of randomised trials in health research. *BMC Medical Research Methodology*, 6(1):5.

Perrone, S. 1999. *Violence in the workplace.* Australian Institute of Criminology. Research and Public Policy Series: 22.

Productivity Commission. 2005. Australia's Health Workforce, Research Report, Australian Government: Canberra.

Rippon, T.J. 2000. Aggression and violence in health care professions. *Journal of Advanced Nursing,* 31(20):452–460.

Robbins, I., Bender, M. and Finnis, S. 1997. Sexual harassment in nursing. *Journal of Advanced Nursing,* 25(1):163–169.

Taylor, D. 2000. Student preparation in managing violence and aggression. *Nursing Standard,* 14(30):39–41.

U.S. "Violence in the Workplace 1993-1999", US Department of Justice, National Crime Victimization Survey, December 2001. Available at: http://www.ojp.usdoj.gov/bjs/pub/pdf/vw99.pdf

Weathers, F.W., Litz, B.T., Herman, D.S., Huska, J.A., and Keane, T.M. 1993. *The PTSD Checklist: Reliability, validity, and diagnostic utility.* Paper presented at the Annual Meeting of the International Society for Traumatic Stress Studies, San Antonio, TX.

Views and attitudes of nursing students towards ageing and older patients

AUTHORS

Sevilay Senol Celik
PhD, RN
Associate Professor, Hacettepe University Faculty of Health Science, Nursing Department 06100 Ankara, Turkey.
sevilay@hacettepe.edu.tr

Sevgisun Kapucu
PhD, RN
Assistant Professor, Hacettepe University Faculty of Health Science, Nursing Department 06100 Ankara, Turkey.

Zahide Tuna
MSN, RN
Research Assistant, Hacettepe University Faculty of Health Science, Nursing Department 06100 Ankara, Turkey.

Yeliz Akkus
PhD, RN
Assistant Professor, University of Kafkas, Kars School of Health Kars, Turkey.

KEY WORDS

Older patient, nursing student, ageing, attitudes

ABSTRACT

Objective
The objective of this study was to determine the views and attitudes of nursing students towards ageing and older patients.

Design
A qualitative approach with semi-structured interviews was used in this study.

Setting
Participants were selected from the students of a nursing school in Ankara, Turkey.

Subjects
Five focus group discussions were held with 42 students of a nursing school. The sample for this study was selected from second-year bachelour of scince, nursing (BSN) students. All of the participants were female with a mean age of 21.09±0.97.

Results
According to the results of this study, 42.8% of the participants had cared for an average of 7.46±4.57 older patients in hospital settings or homes for the aged. Results of this study showed more than half of the participants had negative views about ageing, but the majority of participants reported they behaved positively towards older patients and were sensitive whilst caring for them. Most of the participants indicated they had communication problems with their older patients.

Conclusions
This study demonstrates similarities with other international studies exploring nursing students' attitudes towards older people (Lambrinou et al 2009; Wang et al 2009; Burbank et al 2006; Hweidi and Al-Obeisat 2006; McKinlay and Cowan 2003). This study was the first reported research undertaken in Turkey, related to views and attitudes of nursing students about ageing. This study will offer an insight into new studies and educational programs about ageing.

INTRODUCTION

The percentage of the older population is gradually increasing in Turkey and throughout the world due to a number of important factors such as developments in science, technology and decreasing birth and mortality rates (Erdil et al 2006; Tuohy 2003). According to data from the United Nations Population Division (2008), the percentage of older people in the total population was 15.3 % in 2005 and by 2025 is estimated to represent 20.8% of the total population in developed countries. Whereas the percentage of people over the age of 65 in Turkey in 2007 was 6.8%, and by 2025 is estimated to represent 9.9% of the total population (TUIK 2009).

The decline in overall function of people worlwide as they age, may result in worsening chronic diseases, culminating in the loss of various life activities (Erdil et al 2006; Lovell 2006; Tuohy 2003; Happell 2002). It is clear the care of older people globally is an important issue, and the need for governments to adequately prepare nurses to care for the growing number of older adults is crucial (Aud et al 2006; Burbank et al 2006; Erdil et al 2006; Hancock et al 2006).

Nurses, as part of the interdisciplinary team, have a pivotal role as providers of care for older people and are in a unique position to influence the quality of care (Hweidi and Al-Obeisat 2006). The quality of care provided for older people is directly related to the attitudes of the nurses, physicians, medical and nursing students who care for them (Hweidi and Al-Obeisat 2006; Jacelon 2002). Because today's students are tomorrow's health care professionals, the development and cultivation of positive attitudes towards ageing and older people is crucial.

Studies investigating nursing students' attitudes towards older people have reported conflicting findings. Some studies have reported that nursing students have positive attitudes towards older patients (Lambrinou et al 2009; Wang et al 2009; Burbank et al 2006; Hweidi and Al-Obeisat 2006; McKinlay and Cowan 2003) however, other studies (Aud et al 2006; Happell 2002; Söderhamn et al 2001) have shown that nursing students have negative attitudes towards older patients. In studies, negative attitudes of nursing students were shown to be based on myths and stereotypes about older people (passive, frustrating, boring, fragile, depressed, lonely and useless) (Aud et al 2006; Happell and Broker 2001). These negative attitudes can lead to ageism, a process of stereotyping and discriminating against older people (Kearney et al 2000). One result of such attitudes is that many nursing students do not choose to work with older adults following graduation (McLafferty and Morrison 2004). Positive clinical experiences with older adults and instructors with positive attitudes towards older adults strongly influence nursing students' attitudes and interests (Fitzpatrick et al 2004; Wells et al 2004; Fitzgerald et al 2003).

This the first known study carried out in Turkey, regarding nursing students' views and attitudes of ageing and older patient care. Results of this study will be used by nurse instructors to plan and implement innovative and evidence-based learning experiences regarding the care of older patients in nursing schools and hospitals. The results hope to add valuable information concerning this important issue in a developing European-Asian country.

METHODS

A qualitative approach with semi-structured interviews was used in this study. Participants were selected from the students of a nursing school in Ankara, Turkey. The aim of this study was to determine the views and attitudes of the nursing students towards ageing and older patients. At the time this study was conducted, ninety-one BNS students in their second school year were asked to participate. The study's purpose was explained, and 42 (46.1%) nursing students voluntarily agreed to participate. Ageing and care of older patients are taught as subtopics of the medical-surgical courses. These courses are introduced to nursing students in the second year. The necessary written approval was

obtained from the administration department of the nursing school prior to this study. The researchers also obtained permission and informed consent from the participants. This was done according to the guidelines presented in the Declaration of Helsinki.

After reviewing the literature, a data collection tool was designed to use in five focus group discussions. Dates and times were arranged for interviews, and all focus group discussions were held in an appropriate room in a hospital. Before beginning the focus group discussions, participants gathered in a room and were placed around a table facing each other, and the aim of the study was explained to them. Participants were assigned a number to be used instead of names and all discussions were tape-recorded. Data was also gathered by the use of a questionnaire. The questions were tested for structure and clarity by the investigators in a pilot study with three informants. The results of the pilot study were not included in the results of this study.

Each group included 7-10 participants, and each group's interview lasted an average of 40 minutes. Discussions were open-ended and talk ranged widely over each topic. The researchers ensured that each question on the data collection schedule was adequately addressed. Transcribed data from the focus groups were validated through discussion between the focus group moderator and the investigator, who acted as recorder and also kept field notes. The tapes and notes were stored in a locked cupboard. The first and second authors of the study had the key and thus the only access to the tapes and the notes. All material associated with the study will be destroyed after five years when the data will be invalid.

Content analysis was used for the obtained data. The units of analysis for this study were words or concepts, themes, and numbers of subjects who described the same concept or themes. Transcribed data from the focus group discussions were grouped by themes and concepts, and then the statements of the participants were coded numerically according to these groups. The main purpose of grouping and coding was to ease data analysis. Obtained data were evaluated by frequency and percentages using the Statistical Package for Social Sciences for Windows 11.

FINDINGS

In this study, all of the participants were female with a mean age of 21.09±0.97, and 42.8% of the participants had cared for an average of 7.46±4.57 older patients in hospital settings or homes for the aged. Half of the participants were co-habiting with older adults. For example, some were living with their grandmothers (66.6%), grandparents and grandfathers (19.2% and 14.2%, respectively).

Six descriptive themes emerged from the data of this study: (1) the meaning of ageing, (2) views about ageing, (3) problems experienced, (4) attitudes of the nursing students, (5) knowledge and skills needed for care, and (6) work setting or area after graduation.

Theme one: the meaning of ageing

Half of the participants stated that ageing is a changing process from anabolism to catabolism, cellular ageing and dying (table 1).

Table 1: the meaning of ageing according to the nursing students (n:42)

Meaning of ageing	n*	%
Changing from anabolism to catabolism, cellular ageing, dying	21	50.0
Sickness	8	19.0
Increase in negative thoughts	7	16.6
Childlike behavior	6	14.3
Increase in care requirements	5	11.9
Loneliness	3	7.1
Cognitive decline/changes	2	4.8
Increase in knowledge	2	4.8
Process	2	4.8
Others**	3	7.1

* Participants gave more than one answer.
** Waiting for death, loss, and regret because of the past.

The following are examples of responses from participants about ageing: 'Ageing is to be the eldest person at home, to be an adviser', 'Ageing is a preparation period for death', 'Ageing is to feel regrets due to some mistakes done in the past and trying to make up for them'.

Theme two: views about ageing

Table 2 shows the views of the participants related to ageing and indicates that 23.8% of participants saw ageing as becoming dependent.

Table 2: the views of the nursing students about ageing (n:42)

Views	n*	%
To be dependent upon someone	10	23.8
To have more experiences	8	19.0
To be in a miserable state	5	11.9
To be finished with all things (marriage, birth, duties)	4	9.5
To be lonely	4	9.5
To be a humorous, funny person	4	9.5
To be childlike	3	7.1
To have chronic disease/diseases	3	7.1
To be losing hope	3	7.1
To be in a productive period (cognitive)	2	4.8

* Participants gave more than one answer.

Some examples of responses from participants' on their views about ageing: 'Older people cut themselves off from the world and worldly things', 'My children will look after me as I looked after my parents', 'Ageing is regression to infanthood, but they are not lovely babies'.

Theme three: problems experienced

A majority of the participants (n=35; 83.3 %) stated they had problems with their older patients. Communication problems due to mental, visual and hearing impairments and chronic diseases of the older patients were experienced by 38 % (n:16) of the participants. Furthermore, 42.8 % (n:18) of the participants had problems while giving instructions to their older patients. The participants had to repeat instructions mostly because of patients' forgetfulness. The following are examples of participants' responses about their experienced problems in caring for older patients: 'There was a patient, and she did not permit me to care for her, and she yelled at me', 'Older patients have communication problems, so we can not obtain the right data about them'.

Theme four: attitudes of the nursing students

A majority of participants (66.6%) stated they were patient, cheerful and sensitive whilst caring for older patients (table 3).

Table 3: the attitudes of the nursing students towards older patients (n:42)

Attitudes	n*	%
To be patient, cheerful and sensitive	28	66.6
To empathise	11	26.2
To spend more time with them	6	14.3
To be sorry for them	5	11.9
To not discriminate	2	4.8

* Participants gave more than one answer.

The following are examples of participants' attitudes while they were caring for the older patients: 'I am careful while caring for them because they are fragile psychologically and physically', 'I always do everything for them when they are unable to do it'.

Theme five: knowledge and skills needed for care

In table 4, participants agreed they needed to be knowledgeable about the physical and psychological changes of ageing, chronic diseases, and communication techniques.

Table 4: the views of the nursing students about the knowledge and skills needed to care for older patients (n: 42)

Views	n*	%
Knowledge		
Physical changes in elderly	14	33.3
Psychological changes in elderly	8	19.0
Communication techniques	7	16.6
Chronic diseases	4	9.5
Skills		
To empathise	7	16.6
To educate	4	9.5
To assess	4	9.5

* Participants gave more than one answer.

The following are participant responses regarding their views about the knowledge and skills needed in the care of older patients: 'We must use body language carefully so we will not be misunderstood

by our older patients'. Another participant stated: 'Older adults can be invited to the class to share their experiences. If it is not possible, you can show videos about older adults'.

Theme six: work setting or area after graduation

A majority of the participants (n=26; 61.9%) stated they would like to work in geriatric settings after their graduation. They specifically stated they wanted to specialise in geriatrics and gerontology. The following is a participant's response regarding their view about the type of patient categories they would like to care for after graduation: 'I prefer to work with older patients, because they need more care'.

The findings from this study have some limitations. It was conducted in only one school in Turkey with a small sampling of second year nursing students. The results of this study cannot be generalised to all nursing students.

DISCUSSION

A majority of nursing students participating in this study reported positive attitudes; this reflects Turkish society's as having a more positive view of older adults. This is supported by other studies from eastern cultures (Wang et al 2009; Hweidi and Al-Obeisat 2006). Traditionally, Turkish people view older adults as a source of wisdom and guidance based on their varied life experiences. Religious and cultural norms and traditions also encourage and support the contributions made to society by older people. Furthermore, older people usually remain with their children and other family members until death with care usually being given by the family no matter how seriously ill or disabled their aged relative may be. Feelings of guilt prevent most people from moving their aged parents to a nursing home or other such aged care facility, even though they believe that their parents may be given better care there (Bilir 2006; Cankurtaran et al 2006; Celik and Celik 2002). Nevertheless, Turkish society has undergone many social changes in recent years. Many more women are now working outside the home and the development of the nuclear family has impacted people's attitudes toward older people. In addition, factors such as religion, cultural norms, traditions and social changes can also affect students' thoughts, feelings and attitudes about ageing (Hweidi and Al-Obeisat 2006; McLafferty 2005; McKinlay and Cowan 2003).

More than half the participants in this study had negative views about ageing and almost half of them defined ageing as a negative process (table 1, table 2). The majority stated that they behaved positively towards older patients (table 3). The participants' negative views about ageing may have stemmed from the reality that the majority of older Turkish persons' lived inactive and unproductive lives after their retirement. In addition, the participants' negative views may have arisen because some of their older patients had refused nursing interventions offered by the study participants and had sometimes yelled at participants when they had been trying to provide care for them. More than half of the participants have lived or are presently living with older relatives. This fact may have also influenced their personal experiences about older patients and the formation of negative attitudes. A similar study performed by Tuohy (2003) found that overall the students exhibited positive attitudes towards older people and in general valued them. In the same study, one student stated "Touch can be good... just let them know you're there and supportive of their problems" (Tuohy 2003 p22). Hweidi and Al-Obeisat (2006) indicated nursing students displayed marginally positive attitudes towards older people. The findings of these two studies (Hweidi and Al-Obeisat 2006; Tuohy 2003) were similar to those in the study.

The findings from this study, shows that most of the participants may have had problems while caring for older patients because the older patients had refused nursing interventions such as the measurment of arterial blood pressure, the administration of injections, or aspects related to personal hygiene. The main reason why the older patients refused the care of the participants is the fear the participants might make a mistake in providing the care needed. In a study by Happell (2002), nursing students stated "working with older people was boring, frustrating,

and depressing" (Happell 2002 p532). Several students in another study by McLafferty and Morrison (2004) reported that elder care did not seem to be more than basic nursing care and described the work as "really dull and full of commodes" (McLafferty and Morrison 2004 p450) These two studies' findings were similar to those in this study.

In this study, more than half of the participants who care for older patients stated they could work in geriatric settings after their graduation. Conversely, Hweidi and Al-Obeisat's (2006) study found a majority of the participants (62.2%) preferred not to work with older people after graduation.

Most of the participants in this study agreed nurses caring for older patients need to be knowledgeable about the physical and psychological changes of ageing (table 4). The type and amount of geriatric and gerontological content in nursing curricula in Turkey is inadequate (Akın et al 2001). Generally, gerontology content is taught as a subtopic of other courses (medical, surgical, community health), and nursing students obtain clinical experiences about older patients care through hospital rotations and in aged care homes and primary health care facilities (Akın et al 2001). Lack of leadership and role modelling, together with under-resourced physical environments and inadequate education were significant barriers to integrating gerontological content into baccalaureate nursing curriculum (McLafferty 2005; McKinlay and Cowan 2003; Akın et al 2001). The unfortunate result of inadequate gerontological content in nursing curriculum, lack of leadership and role modeling and under-resourced physical environments is that after graduation, nursing students can be inexperienced and uninformed about geriatrics and gerontology.

CONCLUSION

This study was the first reported study in Turkey related to views and attitudes of nursing students about ageing. This study will offer an insight into new studies and educational programs about ageing. Further research is needed to more clearly identify Turkish nursing students' attitudes by replicating this study, using a random and larger sample size to improve the external validity of the findings. It is also recommended that it may be useful to study nursing faculty members' attitudes towards older patients since their attitudes have been found in studies to affect their students' attitudes (McLafferty 2005; Akın et al 2001). More emphasis on gerontological curricula and training in BSN programs are strongly needed. Nurse educators should consider restructuring nursing curricula in Turkey so that integration of aspects related to nursing older people takes place early in the BSN program.

REFERENCES

Akın, B., Seviğ, Ü. and Karataş N. 2001. Türkiye'de gerontoloji hemşireliği eğitimi (II): bir sertifika eğitim programı geliştirme çalışması- deneyimler ve eğitim programı önerisi. (Gerontological nursing education in Turkey (II): Study to develope a certificate education programme- experiences and suggestion for an educational programme). *CÜ Hemşirelik Yüksekokulu Dergisi (Journal of CU School of Nursing)*, 5(1):40-42.

Aud, M.A., Bostick, J.E., Marek, K.D. and McDaniel, R.W. 2006. Introducing baccalaureate student nurses to gerontological nursing. Journal of Professional Nursing, 22(2):73-78.

Bilir, N. 2006. Ageing and community health, in J. Troisi, Y.G. Kutsal (ed). *Ageing in Turkey*. Veritas Pres: Malta.

Burbank, P.M., Dowling-Castronovo, A., Crowther, M.R. and Capezuti, E.A. 2006. Improving knowledge and attitudes toward older adults through innovative educational strategies. Journal of Professional Nursing, 22(2):91-97.

Cankurtaran, M., Halil, M., Ulger, Z., Dagli, N., Yavuz, B.B., Karaca, B. and Ariogul, S. 2006, Influence of medical education on students' attitudes towards the Elderly. *Journal of the National Medical Association*, 98(9):1518-1522.

Celik, S.S. and Celik, Y. 2002. Ageing in Turkey. *Journal of Hacettepe University School of Nursing,* 9(1):30-40.

Erdil, F., Celik, S.S. and Baybuga, M.S. 2006. Ageing and nursing services, in J. Troisi, Y.G. Kutsal (ed). *Ageing in Turkey*. Veritas Pres: Malta.

Fitzgerald, J.T., Wray, L.A., Halter, J.B., Williams, B.C. and Supiano, M.A. 2003. Relating medical students' knowledge, attitudes, and experiences to an interest in geriatric medicine. *The Gerontologist,* 43(6):849-855.

Fitzpatrick, J.J., Salinas, T.K., O'Connor, L.J., Stier, L., Callaban, B., Smith, T. and White, M.T. 2004. Nursing care quality initiative for care of hospitalized elders and their families. *Journal of Nursing Care Quality,* 19(2):156–161.

Hancock, D., Helfers, M.J., Cowen, K., Letvak, S., Barba, B.E., Herrick, C., Wallace, D., Rossen, E. and Bannon, M. 2006. Integration of gerontology content in nongeriatric undergraduate nursing courses. *Geriatric Nursing*, 27(2):103-111.

Happell, B. 2002. Nursing home employment for nursing students: valuable experience or harsh deterrent?. *Journal of Advanced Nursing,* 39(6):529–536.

Happell, B. and Broker, J. 2001. Who will look after my grandmother? Attitudes of student nurses toward the care of older adults. *Journal of Gerontological Nursing*, 27(12):12-17.

Hweidi, I.M. and Al-Obeisat, S.M. 2006. Jordanian nursing students' attitudes toward the elderly. *Nurse Education Today,* 26(1):23-30.

Jacelon, C.S. 2002. Attitudes and behaviors of hospital staff toward elders in an acute care settings. *Applied Nursing Research*, 15(4):227-234.

Kearney, N., Miller, M., Paul, J. and Smith, K. 2000. Oncology healthcare professionals' attitudes toward elderly people. *Annals of Oncology,* 11(5):599-601.

Lambrinou, E., Sourtzi, P., Kalokerinou, A. and Lemonidou, C. 2009. Attitudes and knowledge of the Greek nursing students towards older people. *Nurse Education Nurse*, 29(6):617-622.

Lovell, M. 2006. Caring for the elderly: Changing perceptions and attitudes. *Journal of Vascular Nursing*, 24(1):22-26.

McKinlay, A. and Cowan, S. 2003. Student nurses' attitudes towards working with older patients. *Journal of Advanced Nursing*, 43(3):298–309.

McLafferty, E. 2005. A comparison of nurse teachers' and student nurses' attitudes toward hospitalized older adults. *Nurse Education Today*, 25(6):472-479.

McLafferty, I. and Morrison, F. 2004. Attitudes towards hospitalized older adults. *Journal of Advanced Nursing,* 47(4):446-453.

Söderhamn, O., Lindencrona, C. and Gustavsson, S.M. 2001. Attitudes toward older people among nursing students and registered nurses in Sweden. *Nurse Education Today,* 21(3):225-229.

Tuohy, D. 2003. Student nurse-older person communication. *Nurse Education Today*, 23(1):19-26.

Türkiye Istatistik Kurumu (TUIK) (Turkey Statistical Institution). 2009. http://www.tuik.gov.tr/VeriBilgi.do?tb_id=39&ust_id=11. (accessed 23.07.09).

United Nations Population Division. 2008. World population prospects: The 2008 revision population database. http://esa.un.org/unpp/p2k0data.asp. (accessed 03.06.09).

Wang, C., Liao, W., Kao, M., Chen, Y.J., Lee, M.C., Lee, M.F. and Yen, C.H. 2009. Taiwanese medical and nursing student interest levels in and attitudes towards geriatrics. *Annals Academy of Medicine Singapore*, 38(3): 230-236.

Wells, Y., Foreman, P., Gething, L. and Petralia, W. 2004. Nurses' attitudes towards ageing and older adults. *Journal of Gerontological Nursing*, 30(9):5-13.

Attendance at outpatient cardiac rehabilitation: is it enhanced by specialist nurse referral?

AUTHORS

Natalie A. Johnson
BEd, GradDipHlthSocSci, PhD
Lecturer, School of Medicine and Public Health, University of Newcastle, Callaghan, New South Wales, Australia.
Natalie.Johnson@newcastle.edu.au

Kerry J. Inder
BN, GradDipClinEpi, PhD
Lecturer, School of Medicine and Public Health, University of Newcastle, Callaghan, New South Wales, Australia.
Kerry.Inder@newcastle.edu.au

Amanda L. Nagle
BSc(Hons), PhD
Heartmoves Program Manager, NSW Division Heart Foundation, Kotara, New South Wales, Australia.

John H. Wiggers
BA(Hons), PhD
Director, Population Health, Hunter New England Health. Associate Professor, School of Medicine and Public Health, University of Newcastle. Wallsend, New South Wales, Australia.

Acknowledgements
Natalie Johnson's contribution to this project was supported by a NHMRC Public Health Postdoctoral Fellowship (Regkey 964208) between 1998 and 2001 and by a University of Newcastle Equity Research Fellowship in 2008. The authors wish to acknowledge the significant contribution of the late Mrs Janet Fisher to data collection and management and thank the Hunter New England Heart and Stroke Health Outcomes Council for permission to use the data.

KEY WORDS

coronary disease, rehabilitation, outpatients, nurses

ABSTRACT

Objective
Strength of physician recommendation is the principal predictor of outpatient cardiac rehabilitation (CR) participation. Since nurses spend more time with inpatients than physicians, recommendations by nurses may be significant. This study sought to determine which health care provider recommendations were independently associated with CR attendance.

Design and setting
Secondary analysis of cross-sectional survey data provided by patients discharged between March 1998 and February 1999 with coronary heart disease from public hospitals in the Hunter region of New South Wales.

Subjects
Surveys seeking information about advice to attend CR and CR attendance were mailed to 1933 patients aged 20 to 84 years, discharged with a principal diagnosis of acute myocardial infarction, unstable angina pectoris, congestive heart failure, and ischaemic heart disease including those undergoing coronary artery bypass graft surgery and percutaneous coronary intervention. Multiple logistic regression was used to determine which health care provider recommendations were associated with CR attendance.

Main outcome measures
Self-report of one or more health care provider recommendations to attend CR and self-reported attendance.

Results
Among the 404 patients advised to attend CR (70% male, 53% ≥65 years), 66% (266/404) attended at least one session. The odds of attendance were significantly higher among patients referred to CR by a CR nurse after adjustment for strength of physician recommendation and other potential confounding variables (odds ratio 3.40, 95% confidence interval 1.74-6.64).

Conclusions
Since recommendations by CR nurses increased the odds of CR attendance, CR nurse recommendations should be included in strategies designed to increase CR utilisation.

INTRODUCTION

Coronary heart disease (CHD) is a major cause of death and disability in Australia (AIHW 2009). Guidelines for the management of acute coronary syndromes recommend that cardiac rehabilitation (CR), a multidisciplinary intervention designed to promote recovery after a coronary event and prevent recurrence, be available and routinely offered to all patients (Aroney et al 2006). Despite this, fewer than half of eligible patients attend outpatient CR (Suaya et al 2007; Scott et al 2003; Bunker et al 1999). This may be due to non-referral of eligible patients or non-attendance after referral (Bunker and Goble 2003). Automatic referral, which is recommended in Australian best practice guidelines for CR (Goble and Worcester 1999), addresses the problem of a lack of initial referrals but does not address the problem of non attendance after referral.

Comprehensive reviews of the factors associated with CR attendance conclude that strength of physician recommendation is the principal predictor of participation (Jackson et al 2005; Cooper et al 2002; Daly et al 2002). Ades et al (1992) found that 1.8% of patients attended CR when they perceived the physician recommendation to be weak compared with 66% when they perceived a strong physician recommendation. Shanks et al (2007) also found strength of physician recommendation to be the strongest predictor of CR attendance but suggested that recommendations from nurses may also be significant because nurses spend more time with inpatients than physicians.

Advice to attend CR for clinically stable patients is commonly provided by CR nurses in the Hunter region (area around Newcastle in New South Wales, Australia), which is consistent with national best practice recommendations (Goble and Worcester 1999). Since medical referral is not always required, the purpose of this secondary analysis of data from the Hunter Outpatient Cardiac Care study (Johnson et al 2004) was to determine which health care provider recommendations were associated with CR attendance after adjustment for potential confounding variables. The association between various health care provider recommendations and patient attendance has not, to the authors' knowledge, been explored elsewhere.

METHOD

At the time of this study, the tertiary referral hospital for cardiology in the Hunter region employed 2.5 full-time equivalent CR nurses who were responsible for identifying inpatients suitable to attend outpatient CR in addition to supervising the outpatient services. Thus, patients admitted with an acute myocardial infarction (AMI) or for coronary revascularisation with an uncomplicated clinical course were referred routinely to outpatient CR by CR nurses without a medical referral. Other patients were referred to attend CR by cardiologists on a case by case basis. While other hospitals in the region employed CR nurses to supervise outpatient CR, these staff had limited time to identify and invite eligible inpatients. Subsequently, referrals were predominantly made by medical staff, allied health staff, and ward nurses at these sites. Waiting time between referral and CR attendance varies according to demand and is estimated to be approximately one month.

Sample and procedure

The primary aim of the Hunter Outpatient Cardiac Care study was to determine CR referral, attendance and completion rates in the Hunter region. Surveys seeking information about advice to attend CR and CR attendance were mailed to 1,933 patients aged 20 to 84 years discharged from public hospitals in the Hunter region between 1 March 1998 and 28 February 1999 with a principal diagnosis of AMI, unstable angina pectoris (UAP), congestive heart failure (CHF), and ischaemic heart disease (IHD). Patients undergoing coronary artery bypass graft surgery (CABGS) and percutaneous coronary intervention (PCI) were also included. As described elsewhere, a greater proportion of the respondents (1,202/1,933) were male, lived in the urban health sector, had been treated by a specialist or undergone a procedure in a hospital that offers CR while a smaller proportion had been discharged with the diagnosis of CHF (Johnson et al 2004). Information provided by respondents who did not report being advised to

attend CR or reported being advised to attend after further treatment or surgery was excluded from this secondary analysis of the data.

Persons eligible for the study were identified by staff of the Heart and Stroke Register and sent a participant information sheet and questionnaire, including a reply paid envelope, after hospital discharge. Reminders were sent according to the usual register protocol (a reminder letter after two weeks, a letter and second copy of the questionnaire after eight weeks and a final reminder letter ten weeks after initial mailing). Approval for the study was obtained from The University of Newcastle and Hunter Area Health Service Ethics Committees.

Study subjects were asked: 'Did any of the following people advise you to attend an Outpatient Cardiac Rehabilitation Program?' (a yes or no response was required for each): a general practitioner, a cardiologist (cardiac specialist), a cardiac surgeon, a cardiac rehabilitation nurse, a ward nurse, a physiotherapist, a social worker, a lay support person (eg Open Heart Association, Heart Support Australia), family or friends, or other patients. CR attendance was assessed by the question: 'After your discharge from hospital, did you attend any sessions of a hospital-based Outpatient Cardiac Rehabilitation Programme?' (response options were 'yes' and 'no').

The potential confounding variable of age was classified as 20 to 64 years and 65 to 84 years because age younger than 65 years has been shown to be associated with referral to CR in the region (Johnson et al 2004). The other potential confounding variables considered were gender, marital status (married or defacto relationship/other), education level (primary or some high school education/completed high school or above), employment status (employed/not employed), health sector of residence (semi-rural or rural/urban), self-reported health (poor or fair/good-to-excellent), number of self-reported cardiac risk factors (0/1/2/≥3), discharge diagnosis (AMI/UAP/CHF/IHD), revascularisation (not revascularised/CABGS/PCI), length of stay (<7days /≥7days), previously admitted to hospital 'for heart trouble' (yes/no), previous CR participation (yes/no), and strength of physician recommendation (did not mention CR or suggested patient might like to attend/advised or strongly advised CR).

Statistical Analyses

The data were analysed using Intercooled Stata 10.0 (Stata Corporation, College Station, TX). Differences between CR attendees and non-attendees were analysed using χ^2 tests. Multiple logistic regression was used to determine which health care provider recommendations were associated with attendance at CR after adjustment for potential confounding variables. All variables with a *P*value less than 0.25 in the χ^2 analyses were entered into the logistic model simultaneously and retained. The strength of associations was quantified by estimated odds ratios and 95% confidence intervals.

FINDINGS

Among respondents to the Hunter Outpatient Cardiac Care study (1,202/1,933), 493 reported being advised to attend CR. Of these, 89 had been advised to attend after further treatment and were excluded from this analysis. Of the remaining 404 study subjects, the majority were male (70%), 65 to 84 years of age (53%) and lived in the urban (Greater Newcastle) health sector (66%). Thirty-five percent had been admitted with an AMI and most had not been revascularised (64%).

Table 1: Source of recommendations to attend cardiac rehabilitation (n = 379*)

Source of recommendation	Advised CR n (%)	Attended CR n (%)	χ^2; df=1; P-value
GP	60 (16)	43 (72)	0.9; 0.36
Cardiologist	133 (35)	104 (78)	12.6; <0.0001
Cardiac surgeon	44 (12)	33 (75)	1.6; 0.20
CR nurse	215 (57)	163 (76)	19.4; <0.0001
Ward nurse	72 (19)	40 (56)	4.8; 0.03
Physiotherapist	111 (29)	69 (62)	1.3; 0.25
Social worker	44 (12)	24 (55)	3.2; 0.07
Lay support person	62 (16)	39 (63)	0.4; 0.51
Family or friend(s)	44 (12)	34 (77)	2.6; 0.11
Other patients	19 (5.0)	14 (74)	0.5; 0.50

Note: CR: cardiac rehabilitation; GP: General practitioner. *Missing data (n=25)

Table 2: Association between various health care provider recommendations to attend cardiac rehabilitation and patient attendance (n = 313*)

Variable	n (% who attended CR)	Unadjusted OR (95% CI)	Adjusted OR (95% CI)
Age group, y			
20-64	189 (70)	1	1
65-84	211 (64)	0.80 (0.49, 1.29)	0.89 (0.47, 1.70)
Gender			
Male	218 (71)	1	1
Female	95 (64)	0.71 (0.43, 1.19)	0.74 (0.36, 1.51)
Education			
Primary or some high school education	143 (64)	1	1
Completed high school or above	170 (74)	1.54 (0.95, 2.50)	1.13 (0.58, 2.18)
Health sector of residence			
Semi-rural or rural	104 (55) 209 (77)	1	1
Urban		2.69 (1.63, 4.45)‡	3.06 (1.55, 6.06)†
Self-reported health			
Fair or poor	104 (60)	1	1
Good-to-excellent	209 (74)	1.94 (1.18, 3.20)†	2.32 (1.13, 4.79)*
Discharge diagnosis			
AMI	117 (79)	1	1
UAP	88 (72)	0.68 (0.36, 1.30)	0.60 (0.24,1.52)
CHF	36 (69)	0.62 (0.27, 1.42)	2.04 (0.62, 6.73)
IHD	72 (52)	0.29 (0.15, 0.54)‡	0.18 (0.06, 0.56)†
Revascularisation			
No	202 (70)	1	1
CABGS	73 (62)	0.68 (0.39, 1.19)	2.32 (0.72, 7.47)
PCI	38 (79)	1.58 (0.69, 3.66)	2.96 (0.95, 9.19)
Length of stay			
< 7 days	151 (74)	1	1
≥ 7 days	162 (65)	0.68 (0.42, 1.11)	0.35 (0.16, 0.79)*
Admitted previously "for heart trouble"			
No	175 (75)	1	1
Yes	138 (62)	0.56 (0.34, 0.90)*	0.74 (0.37, 1.50)
Strength of physician recommendation			
Didn't mention CR or suggested patient might like to attend Advised or strongly advised CR	140 (47)	1	1
	173 (87)	7.70(4.41,13.43)‡	13.55(6.24,29.44)‡
Cardiologist recommendation			
No	196 (63)	1	1
Yes	117 (80)	2.43 (1.41, 4.16)†	0.83 (0.39, 1.81)
Cardiac surgeon recommendation			
No	278 (69)	1	1
Yes	26 (74)	1.32 (0.59, 2.93)	0.57 (0.19, 1.72)
CR nurse recommendation			
No	132 (58)	1	1
Yes	181 (78)	2.60 (1.59, 4.25)‡	3.40 (1.74, 6.64)‡
Ward nurse recommendation			
No	132 (58)	1	1
Yes	181 (78)	0.70 (0.39, 1.25)	0.99 (0.43, 2.27)
Social worker recommendation			
No	278 (71)	1	1
Yes	35 (60)	0.63 (0.30, 1.29)	0.66 (0.24, 1.83)
Family/friend recommendation			
No	274 (68)	1	1
Yes	39 (82)	2.20 (0.93, 5.18)	2.67 (0.85, 8.40)

Note: CR: cardiac rehabilitation; OR: odds ratio; 95% CI: 95% confidence interval; AMI: acute myocardial infarction; UAP: unstable angina pectoris; CHF: congestive heart failure; IHD: ischemic heart disease; CABGS: coronary artery bypass graft; PCI: percutaneous coronary intervention. *Missing data excluded, data complete in 313 responders. * P<0.05 † P<0.01 ‡ P<0.001.

A variety of people had recommended CR. The median number of recommendations was two (25th percentile=1, 75th percentile=3). Among patients advised to attend CR by a CR nurse (57%) or a cardiologist (35%), 76% and 78% attended, respectively (table 1).

Sixty-six percent (266/404) of the study subjects reported attending CR, 33% (134/404) did not report attending CR, and 1% (4/404) did not answer this question. A recommendation from a cardiologist, cardiac surgeon, CR nurse, ward nurse, social worker, and by family and friends all had a *P*value less than 0.25 in the χ^2 analyses and were included in the logistic regression analysis. All the potential confounding variables, except number of self-reported cardiac risk factors, marital status, and previous attendance at CR, had a *P*value less than 0.25 and were also included in the logistic regression analysis. Employment status was not included because of missing data (11%). Strength of physician recommendation was retained despite a large amount of missing data (13%), because of its association with CR attendance in the literature.

Table 2 presents the results of the logistic regression analyses. Univariate logistic regression results are provided to enable comparison of the adjusted and unadjusted odds ratios. Of the patients with complete data, 69% (217/313) had attended and 31% (96/313) had not. The factors significantly associated, statistically, with CR attendance were residing in the urban health sector, having good-to-excellent self-reported health, not having a principal discharge diagnosis of IHD, having a length of stay of less than seven days, being advised or strongly advised to attend CR by a physician and advice from a CR nurse to attend CR. The Hosmer-Lemeshow goodness-of-fit test indicated that the model fitted the data well (χ^2 =8.61, df=8, *P*=0.38). Overall, 77% of the cases were correctly classified.

DISCUSSION

Strength of physician recommendation was associated with CR attendance, which is consistent with previous research (Grace et al 2008; Shanks et al 2007; Jackson et al 2005; Cooper et al 2002; Daly et al 2002; Ades et al 1992). A recommendation from a CR nurse was associated with attendance after adjustment for strength of physician recommendation and other potential confounding variables. This finding has not previously been demonstrated. Recommendations from other health care providers were not statistically significantly associated with attendance nor were recommendations from lay support, family and friends, or other patients. These findings are consistent with Australian best practice guidelines which recommend that cardiologists and cardiac surgeons refer patients to programs and encourage them to attend and suggest that CR co-ordinators encourage patients to attend (Goble and Worcester 1999). This study showed that recommendations by CR nurses increased the odds of CR attendance. Therefore, CR nurse recommendations should be included in strategies designed to increase CR utilisation.

Self-reported health was also associated, independently, with attendance. The odds of CR attendance were significantly lower among patients who perceived their health to be fair or poor compared with those who perceived their health to be good, very good or excellent. This supports the view expressed by Jackson et al (2005) that referring professionals should inform patients that severity of disease, co-morbidity, depression and low exercise capacity are not obstacles to CR participation. A discharge diagnosis of IHD and a length of stay of seven days or more were associated with non attendance. Although it is plausible that these findings are due to severity of disease, which the authors could not assess, these are not necessarily obstacles to CR participation as noted above.

The odds of attending CR were lower among patients who lived outside the urban (Greater Newcastle) health sector. This is consistent with the findings of a recent Australian study that showed patients were less likely to attend CR as travel time increased (Higgins et al 2008). Since some of the hospitals

outside the urban health sector provide CR, and the provision of additional services is unlikely, this highlights the importance of research testing the efficacy of alternative models of CR in the Australian setting (Redfern et al 2008; Vale et al 2003).

This study has several limitations. First, only 62% of eligible patients completed the survey in the primary study. If respondents were more health oriented, then this study will overestimate the proportion of patients who attend CR after referral. However, since the aim of the study was to determine which heath care provider recommendations were associated with CR attendance, the response rate is not a threat to the internal validity of the study. Second, disease severity could not be assessed. While the appropriateness of non-attendance at CR could not be established, all of the study subjects included in this analysis had been advised to attend CR. Third, the direction of significant associations could not be ascertained. Therefore, results could be interpreted to suggest that patients who attend CR are more likely to recall CR nurse advice to attend CR or that patients who receive CR nurse advice to attend CR are more likely to attend. Fourth, the reasons why CR nurse recommendations might enhance CR attendance were not identified. Further research is required to determine whether it is a consequence of the relationship CR nurses establish with inpatients, a consequence of the enthusiasm CR nurses exhibit when describing and recommending CR, or a consequence of the CR nurses' knowledge of CR services and useful contacts within the region or a combination of the above. This knowledge may clarify why recommendations from other health professionals, lay support, family and friends were not associated with attendance. The strengths of the study include the ability to separate non attendance from non referral and the use of multivariable statistical methodology.

National data regarding current referral practices throughout Australia is needed. However, this study conducted in the Hunter region has demonstrated that CR nurses and other health professionals, in addition to medical practitioners, regularly refer patients with heart disease to CR. While there are anecdotal reports to suggest that not all medical practitioners welcome the involvement of CR nurses in the referral process, further research is required to confirm or refute this.

CONCLUSION

To the authors' knowledge, this is the first study to examine the role of health care provider recommendations to attend CR on attendance. Only a CR nurse recommendation was associated with attendance after adjustment for strength of physician recommendation and other potential confounders. These data provide evidence that CR nurse recommendations should be included in strategies designed to increase patient participation in CR.

REFERENCES

Ades, P.A., Waldman, M.L., McCann, W. and Weaver, S.O. 1992. Predictors of cardiac rehabilitation participation in older coronary patients. *Archives of Internal Medicine*, 152(5):1033-1035.

Aroney, C.N., Aylward, P., Kelly, A., Chew, D.P.B., Clune, E., on behalf of the Acute Coronary Syndrome Guidelines Working Group. 2006. Guidelines for the management of acute coronary syndromes 2006. *Medical Journal of Australia*, 184(8 Suppl): S1-S32. Available from: http://www.mja.com.au/public/issues/184_08_170406/suppl_170406_fm.html (accessed May 2010).

Australian Institute of Health and Welfare (AIHW). 2009. *Impact of falling cardiovascular disease death rates: deaths delayed and years of life extended*. Australian Institute of Health and Welfare: Canberra, Australia. Available from: http://www.aihw.gov.au/publications/index.cfm/title/10688 (accessed May 2010).

Bunker, S.J. and Goble, A.J. 2003. Cardiac rehabilitation: under referral and underutilisation [Editorial]. *Medical Journal of Australia*, 179(7):332-333.

Bunker, S., McBurney, H., Cox, H., and Jelinek, M. 1999. Identifying participation rates at outpatient cardiac rehabilitation programs in Victoria, Australia. *Journal of Cardiopulmonary Rehabilitation,* 19(6):334-38.

Cooper, A.F., Jackson, G., Weinman, J. and Horne, R. 2002. Factors associated with cardiac rehabilitation attendance: a systematic review of the literature. *Clinical Rehabilitation*, 16(5):541-552.

Daly, J., Sindone, A.P., Thompson, D.R., Hancock, K., Chang, E. and Davidson, P. 2002. Barriers to participation in and adherence to cardiac rehabilitation programs: a critical literature review. *Progress in Cardiovascular Nursing*, 17(1):8-17.

Goble, A.J. and Worcester, M.U.C. 1999. *Best practice guidelines for cardiac rehabilitation and secondary prevention.* Melbourne: Heart Research Centre, on behalf of the Department of Human Services Victoria. Available from:http://www.health.vic.gov.au/nhpa/downloads/bestpracticecardiacrehab.pdf (accessed May 2010).

Grace, S.L., Gravely-Witte, S., Brual, J., Monette, G., Suskin, N., Higginson, L., Alter, D.A. and Stewart, D.E. 2008. Contribution of patient and physician factors to cardiac rehabilitation enrolment: a prospective multilevel study. *European Journal of Cardiovascular Prevention and Rehabilitation*, 15(5):548-556.

Higgins, R.O., Murphy, B.M., Goble, A.J., LeGrande, M.R., Elliott, P.C. and Worcester, M.U.C. 2008. Cardiac rehabilitation program attendance after coronary artery bypass surgery: overcoming the barriers. *Medical Journal of Australia,* 188(12):712-714.

Jackson, L., Leclerc, J., Erskine, Y. and Linden, W. 2005. Getting the most out of cardiac rehabilitation: a review of referral and adherence predictors. *Heart*, 91(1):10-14.

Johnson, N., Fisher J, Nagle A, Inder K, Wiggers J. 2004. Factors associated with referral to outpatient cardiac rehabilitation services. *Journal of Cardiopulmonary Rehabilitation*, 24(3):165-170.

Redfern, J., Briffa, T., Ellis, E. and Freedman, S.B. 2008. Patient-centred modular secondary prevention following acute coronary syndrome: a randomized controlled trial. *Journal of Cardiopulmonary Rehabilitation and Prevention*, 28(2):107-15.

Scott, I.A., Lindsay, K.A., Harden, H.E. 2003. Utilisation of outpatient cardiac rehabilitation in Queensland. *Medical Journal of Australia*, 179(7):341-5.

Shanks, L.C., Moore, S.M. and Zeller, R.A. 2007. Predictors of cardiac rehabilitation initiation. *Rehabilitation Nursing*, 32(4):152-7.

Suaya, J.A., Shepard, D.S., Normand, S.T., Ades, P.A., Prottas, J., Stason, W.B. 2007. Use of cardiac rehabilitation by Medicare beneficiaries after myocardial infarction or coronary bypass surgery. *Circulation,* 116(15):1653-62.

Vale, M.J., Jelinek, M.V., Best JD, Dart, A.M., Grigg, L.E., Hare, D.L., Ho, B.P., Newman, R.W. and McNeil, J.J., for the COACH Study Group. 2003. Coaching patients on achieving cardiovascular health (COACH). *Archives of Internal Medicine*, 163(22):2775-2783.

A university clinic: an innovative model for improving clinical practice

AUTHORS

Paul Warner
RN; BAEd; MEd; PhD Candidate
Lecturer in Nursing, Faculty of Science, School of Nursing and Midwifery, Charles Sturt University, Albury, NSW, Australia.
pwarner@csu.esdu.au

Dr. Herbert Jelinek
PhD
Senior Lecturer, Faculty of Science, School of Community Health, Charles Sturt University, Albury, NSW, Australia.

Professor Patricia M Davidson
RN, PhD
Professor of Cardiovascular and Chronic Care, Curtin Health Innovation Research Institute for Palliative and Supportive Care Research Australia, Curtin University of Technology, Faculty of Health Sciences, Chippendale, NSW, Australia.

KEY WORDS

Nursing, interprofessional learning, interdisciplinary collaboration, undergraduate student, research, community screening, clinical skills

ABSTRACT

Objective
This paper discusses interprofessional learning through interdisciplinary collaboration between undergraduate nursing and podiatry students at a university based cardiovascular screening clinic.

Setting
A cardiovascular risk assessment clinic at a university campus in rural New South Wales, Australia.

Subjects
Students from nursing and podiatry enrolled in a baccalaureate degree at Charles Sturt University (CSU) Albury Wodonga Campus.

Main Outcome Measures
Undergraduate health care students develop their clinical skills primarily through clinical rotation within accredited health care facilities. The value of these clinical placements to students is dependent upon availability, the quality of the facilitation and the perceived burden to the organisation of providing places for students. There is increasing competition for these clinical places with health care service managers and their staff frequently highly stressed due to increased demand for clinical services, workforce shortages and increasing fiscal constraints. As a consequence of these challenges, an innovative, interdisciplinary program, designed to both improve and extend the repertoire of clinical skills of undergraduate health care students was piloted at a regional university campus. The pilot program used an established community screening clinic conducted by CSU. Students were invited to attend the clinic and undertake assessment tasks relevant to their profession and curriculum requirements as well as learn and practice clinical skills outside their usual professional practice. Students were able to practise these skills in a supportive environment, without the inherent time constraints and pressures experienced in health care facilities. The effectiveness of this model was evaluated through interviews as well as a pre and post test evaluation of one clinical skill. Students reported enthusiasm towards the program and were particularly interested in the opportunity of working in an interprofessional community focussed context and having the opportunity to expand their scope of practice.

INTRODUCTION

Universities are charged with producing health care graduates that are competent and able to adapt to dynamic (changing) clinical environments. Traditionally, clinical skills are acquired within university laboratories and ward simulations, with consolidation and expansion of these skills obtained through clinical rotation in health care facilities. Whilst this current system has merit, there has been some criticisms of the feasibility of this model (Maben et al 2006) accessing appropriate high quality clinical placements. These problems are exacerbated in rural Australia with less placement opportunities available and the tyranny of distance conspiring against efforts to avail students of diverse and clinically challenging placement opportunities. .

In recognition of these challenges, a university campus in regional Australia has piloted an innovative program, using a campus based cardiovascular risk screening program to provide an environment where undergraduate health care students are able to work in a familiar environment supported by academics and laboratory staff that foster interdisciplinary collaboration and interprofessional learning (Priest et al 2007; Selle et al 2008).

A description of a community screening program

The World Health Organization (WHO) describes primary health care as; essential health care accessible to communities and individuals at a cost that the community can sustain, and underpinning this philosophy is health promotion and disease prevention (Gillam 2008; Anderson 2005; Talbot and Verrinder 2005). This philosophy underpins the community cardiovascular screening program established at Charles Sturt University (Albury Wodonga campus) in 2002. Over this period, the program has invited community members to respond to newspaper advertisements and enrol in the program. There is no cost to participants and consent for data collection and ethical approval for the use of these data sets for research purposes has been obtained from the university human ethics committee. The participants, adults ranging in age from mid forties to mid eighties (divided into two groups) (non diabetes: n = 481 60.45±12.77 years, diabetes: n = 143 62.36 ± 11.27 years) receive a range of cardiovascular tests in order to provide them with a cardiovascular risk profile (Jelinek et al 2006). This cardiovascular profiling helps to identify individuals at risk of cardiovascular disease (disease prevention) as well as providing those participants previously diagnosed with cardiovascular disease updated information on the progress of their illness.

Community participation in the project has been sustained over a period of four years with many participants attending the clinic for a second and third time. The ability to compare data from participants who attend on more than one occasion provides an opportunity to investigate changes in cardiovascular disease profiles as well as look at changes in participant behaviour, including health consumption patterns and modification of risk factors. Participants are overwhelmingly appreciative of the opportunity to participate in the program. This community engagement with the project further strengthens the argument for the ongoing funding and expansion of the program to other campuses within CSU and presents a template for other institutions to develop a similar university based screening program.

Key principles underpinning the community screening program are: research, clinical facilitation, and community engagement. Academics and laboratory staff from across the disciplines of nursing and podiatry are involved in data collection, interpretation and research. This professional interdisciplinary collaboration has increased the research output of the schools as well as provided the opportunity for both novice and experienced researchers to expand their research interests and profiles.

As interest in the program grew it became apparent that a natural progression for the screening program would be to involve our undergraduate students. Consequently in 2005 following appropriate approval from the university, students from nursing and podiatry were given an orientation to the clinic, including presentations from academics about the philosophy underpinning the program,

including ethical considerations and confidentiality requirements, as well as practical information about the actual tests performed and data gathered.

CSU, provides undergraduate education for nursing and allied health students. Of the allied health cohort, physiotherapy and podiatry students are required to undertake clinical placement similar to those of the nursing students. Due to the current curriculum requirements for physiotherapy, time spent at the clinic could not be considered as either clinical practice time or tutorial work and consequently their inclusion in the program was deemed to be problematic. Nurses attending the clinic did so as part of their tutorial time in one of their medical/ surgical subjects, whilst podiatry students used the opportunity as part of their fourth and final year to develop their clinical practice skills prior to graduation.

Although there is the need to acquire discipline specific knowledge for these students, there is a recognition of the increasing importance on interprofessional practice and collaboration within clinical teams (McNair et al 2001) with (Fewster-Thuente and Velsor-Friedrich 2008) suggesting that up to 70% of adverse outcomes may be due to a lack of interdisciplinary communication and collaboration.

History taking, physical assessment and health counselling underpin much of the work undertaken by health care professionals and it is this common ground that allows professional groups to come together within a shared learning context, giving reality to interdisciplinary collaboration and interdisciplinary practice (IDP) (Pistole 2008 p475; Rossen 2008 p246; Selle 2008 p480; Hegarty 2009 p257).

At the undergraduate level, research is usually taught as a standalone subject, fulfilling the requirements of registering authorities, but the evidence is clear, that in order to inculcate students into a research culture, research needs to be embedded in the curriculum across all subjects and that the more relevant the research is perceived to be by the students, the more engaged they become with the process (Veeramah 2004, Courtney 2005). Introducing students to the clinic was ideal in demonstrating both the reason for clinical research as well as how easily research may be undertaken and the potential of research to modify clinical practice (Hanberg and Brown 2006) and support evidence based practice. The importance of encouraging a research culture at an undergraduate level cannot be overstated with (Minichiello et al 2004 p4) observing that …'the opportunities for evidence- based practice is at an all time high …but the lack of academically prepared researchers continues to impede progress'.

METHOD

Groups of four – five students from the two disciplines, nursing and podiatry were assigned to a clinic day and allocated to a station. A station was a designated area appropriately screened and provided with the resources to obtain the required information as shown in table 1. The skills stations were overseen by either an academic from nursing or podiatry and or laboratory staff. There were no additional costs to the university other than that of consumables and some research assistance and data entry.

Table 1: Clinical Skills Station

An initial interview where students interviewed participants and collected a detailed medical history including known morbidities and medication being taken. Supervised by an academic from either discipline
12 lead ECGs; 10 second and 5 minutes, conducted initially by nursing students with podiatry students observing and then performing the tests.
Ankle Brachial Index (ABI) conducted initially by podiatry students with nurses observing then performing the tests.
Retinal Photography; initially demonstrated by an academic then students invited to perform the test.
Venous blood sampling for a battery of tests including BGL; conducted by a qualified phlebotomist with students observing.
Lying and standing blood pressure; all students
Valsalva manoeuvrers; all students
20 minute single lead ECG; all students
A final interview with a copy of the test results provided to the participant and advise provided regarding any follow up required; all students

An orientation program to the clinic was provided for all students prior to their active participation, issues of consent, confidentiality and ethics approval were discussed and each testing station was explained including the rationale for the test as well as a review of the theoretical knowledge underpinning the tests. The students were provided with in-depth reasoning behind the choice of tests, and gave examples that demonstrated the reason for what in the first instance may look repetitious showing how a 10 second 12 lead electrocardiogram (ECG) in one participant showed no abnormalities whilst a 5 minute 12 lead ECG on the same person identified multifocal premature ventricular contractions (PVCs), a potentially serious finding.

This study used an experiential model of learning (Higginson 2004), to help develop students clinical and research skills, as well as promote an understanding of group concepts and professional roles (Pistole et al 2008). Undergraduate nursing and podiatry students were given the opportunity to further advance their clinical assessment skills, research and therapeutic dialogue with clients (Levett-Jones et al 2009). Student learning was facilitated by academics with whom they were familiar. In this model, there was less emphasis on time constants, which is a frequently identified barrier to learning on clinical placement (Atencio et al 2003). This model also encouraged students to engage in research through the process of data collection; the clinical findings obtained at each station as well as the interpretation of this data through discussion with academics.

Of particular interest was the exchange of discipline specific knowledge between the students. The podiatry students taught the nursing students the theory and practice of ankle brachial index measurement, abnormal results of which significantly increase the risk of developing CVD (Criqui et al 2008; Lacroix et al 2008; Mostaza et al 2008) whilst the nursing students reciprocated with the rationale for and the interpretation of ECGs where the presence and frequency of some cardiac arrhythmias including atrial fibrillation and voltage changes may also be suggestive of CVD (de Ruijter et al 2007).

At the end of each clinic day, students from both disciplines were provided a debriefing session and pertinent clinical findings were discussed.

RESULTS

Of the 20 students involved in the study, 12 returned a questionnaire. The questionnaire consisted of five questions and using a Likert scale the students were asked to rate their response to; interdisciplinary collaboration; the learning environment; practicing discipline specific clinical skills in a unique environment; learning new skills and the value of the experience and how they felt about interacting with participants.

All students felt the experience was worthwhile and gave them the opportunity to practice complex clinical skills in a supportive, interprofessional, low stress environment. Students were particularly positive about the opportunity to learn from each other and expand their scope knowledge and to apply this knowledge to their practice and felt much more likely to collaborate with other professions once graduated. Part of this study looked at the value of this unique clinical experience to skill acquisition. Nursing students were given a test to assess their knowledge of blood pressure, including the definition of hypertension, normal values and procedural accuracy. Students were given the same test upon completion of four half days attendance at the clinic over four weeks and all students (n10) demonstrated improved procedural performance and accuracy of measurement. In particular, no student prior to the study, performed brachial auscultation to estimate systolic pressure prior to the procedure. Eight students were able to differentiate between systolic and diastolic hypertension, an improvement of 50% from pre-test values. The advantages of this university based program allowed students to progress at their own rate with support and guidance from academics with whom they were familiar.

Barriers and facilitators to program implementation

Whilst the authors recognise that the numbers in this study were small we felt that the study offered a unique perspective on interdisciplinary learning and collaboration.

CONCLUSION

Health care graduates in the future will be exposed to an extraordinary set of challenges (Hegarty 2009), including an ageing population, increased acuity and budgetary constraints. Graduates that are able to expand their scope of practice (Priest et al 2007) through multidisciplinary collaboration and learning, will be better able to respond to these challenges.

Interdisciplinary collaboration has been shown to improve job satisfaction, improve the quality of patient care, assist with treatment goal settings and importantly provide a more effective resolution mechanism when conflict over treatment occurs (Koch et al 2005) (Chang et al 2009). A university based community screening programs provides an ideal environment for undergraduate health care students to engage in interdisciplinary collaboration, allowing them to interact across professional boundaries, whilst expanding their scope of practice and building sustainable collegial relationships between professions.

REFERENCES

Anderson, L. 2005. Health Promotion. *Women's health: a handbook*, 19.

Atencio, B.L., Cohen, J. and Gorenberg, B. 2003. Nurse retention: is it worth it? *Nursing Economics, 21*(6):262.

Chang, W.-Y., Ma, J.-C., Chiu, H.-T., Lin, K.-C., and Lee, P.-H. 2009. Job satisfaction and perceptions of quality of patient care, collaboration and teamwork in acute care hospitals. *Journal of Advanced Nursing, 65*(9):1946-1955.

Criqui, M.H., Ninomiya, J.K., Wingard, D.L., Ji, M. and Fronek, A. 2008. Progression of Peripheral Arterial Disease Predicts Cardiovascular Disease Morbidity and Mortality. *Journal of the American College of Cardiology, 52*(21):1736-1742.

de Ruijter, W., Westendorp, R.G.J., Macfarlane, P.W., Jukema, J.W., Assendelft, W.J.J., and Gussekloo, J. 2007. The Routine Electrocardiogram for Cardiovascular Risk Stratification in Old Age: The Leiden 85-Plus Study. Journal of the American Geriatrics Society, 55(6):872-877.

Fewster-Thuente, L. and Velsor-Friedrich, B. 2008. Interdisciplinary collaboration for healthcare professionals. Nursing Administration Quarterly, 32(1):40-48.

Gillam, S. 2008. Is the declaration of Alma Ata still relevant to primary health care? *British Medical Journal, 336*(7643):536.

Hanberg, A., and Brown, S.C. 2006. Bridging the theory--practice gap with evidence-based practice. *Journal of Continuing Education in Nursing, 37*(6):248-249.

Hegarty, K. 2009. Sustaining collegiality through the imperative of interdisciplinary practice. *London Review of Education, 7*(1):83-90.

Higginson, R. 2004. The theory--practice gap still exists in nursing education. *British Journal of Nursing, 13*(20):1168-1168.

Jelinek, H., Warner, P., King, S., and De Jong, B. 2006. Opportunistic screening for cardiovascular problems in rural and remote health settings. *Journal of Cardiovascular Nursing, 21*(3):217-222.

Koch, L., Egbert, N. and Coeling, H. 2005. Speaking of research. The working alliance as a model for interdisciplinary collaboration. *Work, 25*(4):369-373.

Lacroix, P., Aboyans, V., Voronin, D., Le Guyader, A., CautrÃs, M. and Laskar, M. 2008. High prevalence of undiagnosed patients with peripheral arterial disease in patients hospitalised for non-vascular disorders. *International Journal of Clinical Practice, 62*(1):59-64.

Levett-Jones, T., Lathlean, J., Higgins, I. and McMillan, M. 2009. Staff-student relationships and their impact on nursing students' belongingness and learning. Journal of Advanced Nursing, 65(2):316-24.

Maben, J., Latter, S. and Clark, J. M. 2006. The theory practice gap: impact of professional bureaucratic work conflict on newly-qualified nurses. *Journal of Advanced Nursing, 55*(4):465-477.

McNair, R., Brown, R., Stone, N., and Sims, J. 2001. Rural interprofessional education: Promoting teamwork in primary health care education and practice. Australian Journal of Rural Health, 9:19-26.

Mostaza, A., Suarez, Carmen., Manzano, L., Cairols, M., LÃpez-FernÃ¡ndez, F., Aguilar, I., Diz Lois, F., Sampedro, J.L., SÃ¡nchez-Huelva, H. and Sanchez-Zamorano', M.A. 2008. Sub-clinical vascular disease in type 2 diabetic subjects: Relationship with chronic complications of diabetes and the presence of cardiovascular disease risk factors. *European Journal of Internal Medicine, 19*(4):255-260.

Pistole, M.C., Kinyon, J. and Keith, C.B. 2008. Group Experiential Learning with Undergraduate Nursing Students: An Interdisciplinary Approach. *Journal for Specialists in Group Work, 33*(2):161-178.

Priest, C., Kooken, W.C., Ealey, K.L., Holmes, S.R., and Hufeld, P. 2007. Improving baccalaureate nursing students' understanding of fundamental legal issues through interdisciplinary collaboration. *Journal of Nursing Law, 11*(1):35-42.

Selle, K.M., Salamon, K., Boarman, R. and Sauer, J. 2008. Providing interprofessional learning through interdisciplinary collaboration: The role of "modelling". *Journal of Interprofessional Care, 22*(1):85-92.

Talbot, L., and Verrinder, G. 2005. *Promoting health: the primary health care approach*: Churchill Livingstone.

Veeramah, V. 2004. Utilization of research findings by graduate nurses and midwives. *Journal of Advanced Nursing, 47*(2):183-191.

Advanced nursing practice: a futures model derived from narrative analysis of nurses' stories

AUTHORS

Karen Kucera
RN, BSc, MNurs
Practice Nurse; Tutor, School of Nursing and Midwifery, Faculty of Health, University of Newcastle, Callaghan, Newcastle, New South Wales, Australia.
Karen.Kucera@newcastle.edu.au

Isabel Higgins
PhD RN FRCNA FCN
Professor of Nursing, Older Person Care, School of Nursing and Midwifery, Faculty of Health, University of Newcastle & Nursing & Midwifery Centre for Practice, & Opportunity and Development CPOD Hunter New England Area Health Service. University Drive, Callaghan, Newcastle, New South Wales, Australia.
isabel.higgins@newcastle.edu.au

Margaret McMillan
PhD RN FRCNA FCN OAM
Conjoint Professor of Nursing, School of Nursing and Midwifery, Faculty of Health, University of Newcastle, University Drive, Callaghan, Newcastle NSW.
Margaret.Mcmillan@newcastle.edu.au

KEY WORDS

advanced, nursing, practice, roles, futures model, narrative analysis

ABSTRACT

Objective
To present a model of advanced nursing practice based on a narrative analysis of advanced practice stories provided by nurses.

Design
Using narratives depicting their clinical practice, nurses were asked to provide illustrations of advanced practice. Analysis of fifty nine narratives enabled exploration of aspects of advanced practice.

Setting
Stories depicted contexts of advanced nursing practice including mental health, child and family health, acute and aged care.

Results
Findings revealed six themes: *Knowticing; Getting a doctor; Trans-action; Taleoring care; Experiencing vulnerability* and *Transporting: facilitating comfort and control*. Three narrative aspects representing advanced practice were described: *Rescue; Recognition* and *Responsibility;* and *Respect.* The stories were of complex care situations relating to diverse areas of work highlighting critical incidents. Some incidents gave nurses great satisfaction whilst others were challenging.

Conclusions
The findings are presented as a model of advanced practice. Both the *world of advanced practice* a diagrammatic representation of the findings, and the futures model of advanced nursing practice incorporate the themes that emerged from the study. They highlight the central, often invisible place of the nurse in patient care. Advanced practice nurses assume responsibility for optimising care. They believe they make a difference and they call for recognition. The models reflect the multi-dimensional nature of advanced practice, its inherent complexity, dynamism and the potential for amplification of practice roles and functions.

INTRODUCTION

The research reported in this paper is based on a secondary analysis of data from a study that was commissioned by the Australian Nursing Federation (ANF) (in McMillan et al 1997). The overall purpose of this study was to determine the essential elements underpinning competencies for nurses practising at an advanced level. The method for the study, (hereafter referred to as the Advanced Nursing (AN) Project) used storytelling by nurses. The 142 stories were elicited from nurses in workshops, and by mail, through advertising in nursing publications (McMillan et al 1997). Nurses were asked "to provide a story from your practice which illustrates an aspect of what you see as advanced practice" (McMillan et al 1997). Whilst the practice stories were commissioned some time ago, the essential elements of advanced practice are consistent with contemporary practice.

The main aim of the discussion that follows in this paper is to present a representation of the *World of advanced practice* and the *futures model of advanced nursing practice*, which were developed as a result of analysing the stories of the nurses who participated in the AN project.

The stories provided by the nurses were of complex care situations. Their content related to diverse areas of work and highlighted critical practice incidents. Some incidents gave nurses great satisfaction whilst others were disturbing. In the first phase of the AN project, behaviours relating to advanced practice were identified and coded to the ANCI competencies (ANCI 1994) but the meaning of many of the incidents remained unexplored from an advanced practice perspective. For the secondary analysis of this data set the researchers asked, "What else were the nurses saying?" (Kucera 2007)

Literature review

According to the Victorian Nurse Practitioner Project Taskforce, the advanced practice nurse is:

an umbrella term given to a registered nurse who has met advanced clinical practice and educational requirements (ANA[1] 1997). These nurses demonstrate a high level of professional autonomy, conduct comprehensive health assessments, and have expert skills in the diagnosis and treatment of complex responses of individuals, families and communities to actual or potential health problems. Working in collaboration with other health care professionals, the advanced practice nurse formulates clinical decisions to manage acute and chronic illness and to promote health. The advanced practice nurse integrates advanced clinical practice with education, research, management, leadership, and consultation. (ANA 1991) (in Victorian nurse practitioner project: Final report of the taskforce 2000 p. 102).

There is much debate about the roles and functions of advanced practice nurses (Bryant-Lukosius et al 2004) which largely emphasise inconsistency. Read et al (as cited in Furlong and Smith 2005) argue that the "ANP[2] has broader knowledge and skills, while the CNS[3] uses narrower knowledge and practices within a specialist area" (p.1062). Chiarella (2006) and Bryant-Lukosius et al (2004) argue there is overlap and confusion between the various titles and the roles that are used around the world. Bryant-Lukosius et al, (2004 p 520) argue that whilst variability amongst roles is to be expected and desired, there needs to be consistency with regards to the core characteristics. In Australia, the terms used for advanced practice roles include clinical nurse specialist (CNS), nurse practitioner (NP), clinical nurse consultant (CNC) and advanced practice (AP) (Refer to ANMC 2007a). The National Nursing and Nursing Education Taskforce (2006) provide a comprehensive overview of definitions, including specialist practice and advanced practice (Heartfield 2006)[4].

Irrespective of, and despite the difficulty with labels and definitions, examination and investigation into the nature of advanced practice continues. For example, there is lack of understanding of the role of nurse practitioners within the nursing profession as well as amongst other health care providers (Lathlean

[1] American Nurses' Association

[2] Advanced nurse practitioner

[3] Clinical nurse specialist

[4] Because all were considered as potentially belonging to 'advanced practice' as an initial premise of the literature review the differences between countries regarding terminology was not an issue and not pursued further. This allowed all categories to be considered for their potential to add to meaning and for later comparison with the findings. Where required, distinctions between titles are noted.

2007; Murphy 2007; Chang et al 2006). The need for clarification and understanding of advanced practice roles is indisputable as is the need for the identification of the core characteristics. Research designed to compare the roles of clinical nurse specialists and nurse practitioners (both viewed as advanced nursing practice) were often limited to surveys and comparisons of curricula (Fenton and Brykczynski 1993). More recently Higuchi et al (2006) examined the success of advanced practice nursing. Whilst interviews with nurses were conducted the focus was on the more concrete outcomes of the project, thus limiting understanding of how nurses viewed the meaning of their work. From their research, Furlong and Smith (2005) suggested the "core concepts for the advanced nursing practice role are: autonomy in clinical practice, pioneering professional and clinical leadership, expert practitioner and researcher" (p. 1059). The findings of the narrative analysis presented in this paper elucidate these concepts.

Rationale

At the time of the original work, in response to pressures from changes in the health care environment (Cooke 1993; McGee 1993; Hockenberry-Eaton 1991; Keane 1994;) nurses from all areas of practice were encouraged to explore and to clarify their roles. In addition there was limited literature that defined advanced practice. Terms such as *advanced, expert, specialist* and *independent practitioner* were often used interchangeably. Because of such confusion, and given the uniqueness of Australian society and nursing, the stories collected in the AN project, provided a rare and valuable opportunity to explore what advanced practice means to these nurses.

Later a document that discussed the implications for contemporary nursing education and practice on the scope of nursing practice provided support for this when "the need to differentiate more effectively and consistently between roles functions and expectations of levels of nurses" and "the need for transferable principles due to the diversity of practice contexts" are recognised (McMillan et al 2001, p. 8). Contemporary practice needed to meet many new expectations. Increasing consumer demand had forced roles to change. Hospital based practice had changed. Many community based programs had been developed. Practice nurses were increasingly gaining more independence. This expansion in responsibility alerted the authors to the importance of thinking about and acting on opportunities for the future.

This situation is still relevant today. With nurse practitioners, clinical nurse consultants and other advanced level clinicians practising in contexts that demand advanced and extended functions within their roles, there is an increasing need to appreciate the elements of the suite of abilities that inform education and practice and enable nurses to provide optimal patient care. The latter centres on preventive as well as acute care and have particular relevance for the encouragement of patient managed care. More importantly, there is a critical need for nurses to engage in thinking about the future and their relevance to quality patient care. Linton (2005) believes the challenge is to shape the future of nursing in a positive way (p. 3) "The future is not something that just happens to us. The future is something we do" (Hiemstra 2005).

To date, there are no known studies on advanced practice that use multi-staged narrative analysis for the development of a futures based practice model.

Aim and Objectives

While the primary aim of the study was to uncover the meanings and experiences within the stories provided by nurses, based on a narrative analysis, other study objectives were to:

- explore activities and roles and identify how nurses see themselves;
- explore and link some of the social, historical and cultural forces that shape or influence how nurses think and act; and
- develop a model of advanced nursing practice.

Research Questions

The key research questions were:

- What are the meanings nurses have of their practice, as expressed through their stories of advanced practice?
- What does nursing practice at an advanced level mean to and for nurses?

Methodology

Narrative analysis was used in this study. The purpose of narrative analysis is "to see how respondents impose order on the flow of experience to make sense of events and actions in their lives... It tells not only about past actions, but how individuals understand those actions, that is, meaning" (Reissman 1993, p. 2).

The methodological approach examines the story and analyses how it is put together, including the linguistic and cultural resources it draws on. Analyses of narrative studies do not simply focus on the content to which language refers, but asks why the story was told that way? (Polkinghorne 1988, p. 1).

Data Collection

Originally nurses were invited "to provide a story from your practice which illustrates an aspect of what you see as advanced practice". The stories were returned by mail, or collected at workshops as part of the AN project. Workshop participants completed a consent form that allowed use of the stories for further research. Consent was granted from the ANF to access the stories for the secondary data analysis reported here. The anonymity of all participants was ensured: personal details were not accessed by the researcher. Any identifying information was coded. Ethics clearance was granted from the University of Newcastle.

In total one hundred and forty two stories were obtained from voluntary participants. Ninety one stories were obtained for use in the study reported here, based on their eligibility from the consent given. A total of 59 stories were selected for analysis. Stories that focused on research, administration, management and infection control were excluded. Incomplete stories or stories that had major or numerous transcription errors were excluded. Stories that were written in the third person were also excluded. Adherence to methodology was a major determinant in the final selection of stories. The accounts had to be suitable for narrative analysis. To be compatible with the chosen method, two critical conditions had to be met (Polanyi 1985):

1. the response had to be defined as a story; and
2. the research question required that the stories were the nurses' own.

Data Analysis

Analysis was based on the writings of Polanyi (1985), and further guided by the work of Hall et al (1992), Meleis et al (1994) and Stevens (1994). Stevens (1995) called this method a 'multi-staged narrative analysis'. Chart 1 summarises the process of data analysis.

Chart 1: procedure for data analysis: 'multi-staged narrative analysis'* (Kucera 2007, p 63)

1. **Selection and reading of stories:** Accounts were classified as stories during selection process. Stories were then reread identifying and recording the events. Each story was read to obtain overall understanding.
2. **Construction of adequate paraphrase:** an adequate paraphrase of each story was constructed to identify the points being made, based on evaluation
3. **Theme identification:** Once the paraphrases were written, the most important heavily evaluated aspects were identified, listed, considered and explored. Questions were asked: Why this story? How is it organised? Patterns or responses were grouped together and common meanings and patterns of shared experience were identified. This enabled the identification of the themes and meanings expressed by the story tellers, i.e. the common points of the stories. Points were identified and grouped, then collapsed into themes. The less common points were acknowledged These were discussed where appropriate.
4. **Recheck and confirm:** the process and results of the identification of themes from paraphrases until satisfied that all key points, meanings, common characteristics and patterns were identified
5. **Identification of narrative aspects:** It was asked: what else is the story about? What world is evoked? Identification and formulation of the narrative aspects was achieved by 'decomposing' the paraphrases, identifying propositions that were common and categorising the aspects. Considering the 'moves' (see Method, Kucera 2007) and comparing them between stories was attended. Confirming and formalising interpretation of the aspects in terms of what advanced practice meant to these nurses was completed.
6. **Recheck and confirm the resultant themes and aspects:** A final look at both the paraphrases and stories to ensure the most important points, meanings and messages portrayed by teller were identified. Links between themes and aspects were noted.
7. **Identity:** Revisit the paraphrases and stories. Identify and list the qualities laid claim to by the nurse. Interpretation allowed the development of a picture shaped by the common qualities, skills and approaches discovered by the analysis.

Each stage involved interpretation
Examples were chosen and presented in the research report.

Reissman (1993) notes that ensuring quality in narrative analysis is difficult; the researcher must take responsibility for the view of the subject's experience. Bailey (1996) argues that validity, as a measure of quality, is a process of confirmation, whereby there is a reconstruction of meaning, not truth, that the researcher wishes to understand and reinterpret theoretically (p. 187). Presentation of the original data and a clear outline of each step undertaken in the analysis give the reader the opportunity to validate the researcher's interpretations or draw alternate conclusions. Based on this commentary, care was taken to document the methodology, making obvious and reinforcing the interpretative nature of the process.

FINDINGS

The identification of the themes and aspects in the stories informed the research on how nurses conceptualised nursing at an advanced level. The people, events and processes that are important to the nurses were identified as well as the qualities, abilities and skills that are valued[5]. A list of components and competencies is not what defined practice for these nurses. Critically, the nurses 'told' the authors that advanced practice is represented by much more than the event.

Analysis led to the formation of six themes: *Knowticing; Getting a doctor; Trans-action; Experiencing vulnerability; Taleoring care;* and *Transporting: facilitating comfort and control*. These themes are representative of what practicing at an advanced level means to the nurse. The themes are the point of the stories. Using these themes, the model depicting 'the world of advanced practice' was derived.

Knowticing is represented by knowing and noticing. It is complex, described in varying ways and defined by four criteria (Kucera 2007). The nurse notices or notes *something* about the patient or situation.

Getting a doctor depicts the nurses' attempts to get the patient's situation attended to by a medical officer. The timely action of the nurse in *getting a doctor* is a key factor in classifying advanced practice. The struggle to get a doctor emphasises the difficulties and importance of nurse/doctor relationships. The success of developing favourable *working relationships* was found to be greatly dependent upon conviction, communication and credibility. While conflict between doctors and nurses was acknowledged, interestingly it was rarely pursued in these stories. As with many of the studies that accessed nurses' views, the focus was directed towards the patient's need and the nurse's resolve.

Trans-action is knowing what to do and doing it. It involves the ability, knowledge, skill and competence to practice. The translation of thought to action is fundamental and encompasses all levels of skills as well as cognitive processes, and involves technical, physical and emotional responses.

Experiencing vulnerability, deals with nurses dealing with vulnerability including their own. *Taleoring care* constitutes the relationship between the nurse and the patient.

By *taleoring care* the nurse is specific to and focused on and with the individual. The nurses described care as being achieved through three essential components: *discussion, negotiation and direction*. Care is tailor made. Equally relevant is the way nurses nurse. An open, unassuming, non-judgemental dialogue and contact is established with the patient, allowing the patient to tell their story is a priority. This is what sets advanced practice apart from usual practice. In a way care is compartmentalised in that it is often only one instant in time we see through these stories, but we sense that it is dynamic and ongoing. It relies on a workable relationship and while the encounter is ended it is clear that the relationship is not. Care is planned, facilitated and given. *Taleored care* is person-centred relying on the nurse's confidence but not arrogance.

Transporting: facilitating comfort and control. By using a variety of mechanisms to provide comfort and control, the nurses *transport* the patient through the disruption or difficult period. Comfort and control take on new meaning, they are vehicles.

[5] The main qualities laid claim to by the tellers were identified and interpreted to create a composite of an advanced practice nurse: an identity but are not addressed in this paper

Transporting is represented by decreasing distress, anxiety, pain and discomfort. There is a transition from helplessness to control. It includes maintaining dignity and promoting a feeling of command over the situation, thus fostering coping.

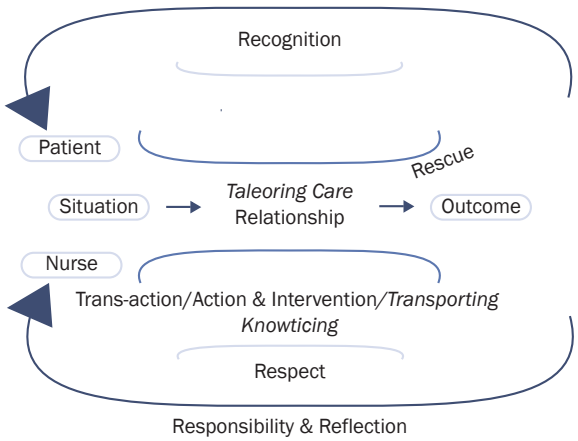
Narrative aspects were also identified (Polyani 1985). Narrative aspects represent underlying and embedded messages inherent in the stories. The narrative aspects encompass the themes and link the stories. They demand and direct attention not only to the work, but to the world of advanced practice. In answer to the question 'what else is the story about?' three narrative aspects represented this facet of analysis and depict the 'world evoked by stories' (Polyani 1985). These were: *Rescue; Recognition and Responsibility; and Respect.*

The findings collectively represent advanced practice as highly developed, requiring a capacity to deal with dynamic and complex situations, many in need of improvement. Advanced practice nurses have foresight and consider consequences to all involved. Practice is based on genuine respect. The nurse guides, supports and travels with the patient through the encounter. Thought and action are connected; knowledge and experience are the foundations for advanced practice. Competence, capability and maturity are prominent qualities of the advanced practice nurse. Being able to deal with their own vulnerability add to the advanced nature of practice. Advanced practice nurses often achieve improvement (rescue) and make a difference. At all times the nurse's practice is in the interest of the people for whom they care.

The World of Advanced Nursing Practice

The themes and aspects are inextricably linked and are brought together diagrammatically in figure 1, The World of Advanced Practice. This world derives directly from the findings and reflects the situation and interactions between the patient and nurse. Two arcs outline the encounter and *taleoring care* is located between them. Some themes and features of advanced practice are located below, signifying the support and guidance within the relationship. Nurses' activity is carried out alongside and with the patient (*transporting*), not in isolation. The overlapping of activity is apparent. This relationship is strategically embraced and surrounded by the aspects that extend and blur any boundaries.

Figure 1: The World of Advanced Practice



Recognising advanced practice – the messages, the meanings

In the stories the nurses called for recognition. Important concepts have been identified that constituted advanced practice. The relationships between several of these concepts represented in the models are described more specifically in the following discussion.

Knowticing

Advanced practice means, to many nurses, *knowticing*. Feelings are heeded, actions often affording protection to the patient. The stories suggested that *intuition* belongs to the advanced practitioner. Varied attempts exist to identify, define and explain *intuition* (McCutcheon and Pincombe 2001; Cioffi 1997; Carper 1978). However, no nurse wrote the word intuition in their stories. Instead, nurses explained actions based on the ability to recognise worrying situations, as *knowing* when to ask questions, and *knowing* from past experience. In offering explanations nurses said they had refined applying knowledge, experience, perception, awareness and thinking.

From the stories, *knowticing* is rational and logical. Benner and Tanner (1987) use the term intuitive judgement (p. 23) to explain the phenomena of

knowing. Lumby (1996) uses Kennedy's term 'practice knowledge' (as cited in Lumby 1996) or practical knowledge, practical know-how, personal knowledge and intuition distinguishing it from book knowledge (p. 327). Brokensha (2002) also argues that intuition is related directly to knowledge and experience. McCutcheon and Pincombe's (2001) study demonstrates the interaction of a number of factors: experience, expertise and knowledge, personality, environment, acceptance of intuition as valid, and the presence or absence of a relationship with the patient. Herbig et al (2001) argue that tacit knowledge is acquired during experiences in a special domain or 'experience-guided' working. Interestingly, Ruth-Sahd and Hendy (2005) note nurses have difficulty explaining intuition to colleagues "whom nurses believe support more logical and analytical clinical diagnostics to guide decision on patient care." (para. 2). Paley (2006) asserts that the non-scientific 'ways of knowing' are not evidence" (p. 39).

While it is not questioned that knowing the patient facilitates care, the stories do not tell us that this is a requirement for *knowticing* (recognising, interrogating, worrying about, questioning). Searching for tangible evidence not only justifies the initial concerns but is required when attempting *to convince the doctor to respond*.

Respons-ability

The translation of thought to action is fundamental. The ability to respond and act has been described as *trans-action* (knowing what to do and doing it. It involves the ability, knowledge, skill and competence to practise.). In their stories, nurses referred to what needed to be done and that they did it. It was not determined by the complexity of the act or task.

Respons-ability assumes *recognition* of the need to be ready and be capable of acting. Knowing what to do and knowing how to do it is linked to experience. They have the ability to understand, prioritise, organise and respond manually, technically and emotionally.

Responding to dynamic situations and environments requires *managing vulnerability*, theirs and others' concentration and management of work progress.

The ability to *knowtice*, prioritise and respond effectively relies on a sense of responsibility and intent. The latter entails constant awareness, attending, conscious receptiveness and readiness. The nurse is ready to respond. Benner et al (1996) talk of "collective" or "pooled" "attentiveness and responsiveness" (p. 207). This study elevates these qualities of surveillance to 'states of being', a critical element of identity.

RESPONSIBILITY

Nurses devoted enormous attention to *recognition and responsibility* within their stories. This illustrated the centrality of the nurse; they made the difference. The stories show that the advanced practice nurses places themself physically and mentally at the centre of the situation. They bring themselves to the situation, their knowledge and experience. There is *responsibility* for improving the patient situation, controlling the situation and facilitating comfort. These actions are emphasised because others fail to do it.

Nurses demand attention and claim this area of *responsibility* because nurses' actions are often invisible. In practice, many actions, interchanges and feelings are not reported. Maintaining a presence, protecting, guarding and monitoring are abstract. One cannot see the states of attentiveness, receptiveness, readiness or responsiveness. The subjective aspects of practice, the *responsibility* for other patients and the routine that goes on in the background lead to the invisibility of much of the nurses' work. Similarly the nurse's involvement and effort in *getting a doctor* goes unnoticed. Reassurance is invisible.

Development of the Model: the Advanced Practice Story

The world of advanced practice (figure 1) formed the beginning of a story. Particular patterns became evident from the analysis and interpretation and informed on the nature of practice, the dimensions of time and the evolving future. Analysis highlighted the inextricable link between the nurses' thoughts and actions and the meaning of action in context. Because the nurses tell the authors how they do what

they do, because they tell us why – so through the stories the authors gain insight into their behaviour, motivations and intent, the author realise the genuine person centred stance underlying practice. The concept of authenticity thus expressed led to the following inference:

the essence of the meaning of advanced practice centres on the authentic relationship between the nurse's thought about his/her practice and his/her actual practice, that is in all instances, person/patient centred.

Overwhelmingly the analysis suggested the nurses were carving out a place that had not as yet been *recognised*. The nurses were calling for recognition. Advanced practice nurses are not rule or routine bound. Though they are rule conscious and respectful, they are role making, making nursing and oriented to the future. Degeling et al (2000, p.133) said an accounting of how 'nurses make nursing' within specific contexts will aid in understanding the identity of nursing. If, nurses make nursing, then advanced practice nurses make advanced practice.

Futures thinking and studies provides tools, theories, methods and processes to look at the future in an attempt to better understand, decide strategy, and even create the future. This seemed an appropriate way to explore the nursing situations presented in this study.

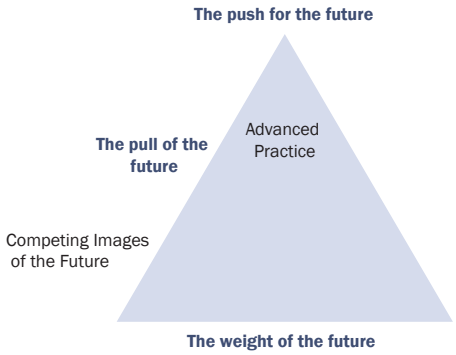
According to futures thinking, there are three dimensions that shape the future: the pulls, the pushes and the weights (Inayatullah 2004a). The futures triangle allows us to map these influences (Inayatullah 2004b Mapping the future section, para. 2).

Using this framework it was possible to reflect on and consider how nurses engage in role making or 'making' nursing.

Figure 2 presents a futures triangle for advanced practice nursing. Advanced practice emerges and develops in response to pushes and pulls, often despite the perceived weights. Competing images belong to the *pulls*.

Specific to nursing, factors such as improved technology, demographic shifts, acuity and chronicity within the clientele accessing health services, enabling legislation and models of health care belong to the pushes, while limited resources, interdisciplinary tensions and fiscal constraint can be identified as *weights* (McMillan et al 2004). However importantly, it is how these competing tensions are perceived by the individual nurse that will determine their influence on and effect in practice, both present and future.

Figure 2: Futures Triangle



Advanced practice nurses demonstrate high level practices that align with patient needs in contemporary health care. They are not caught in tradition and they have learned how to move beyond the weights and obstacles to 'make' advanced practice nursing.

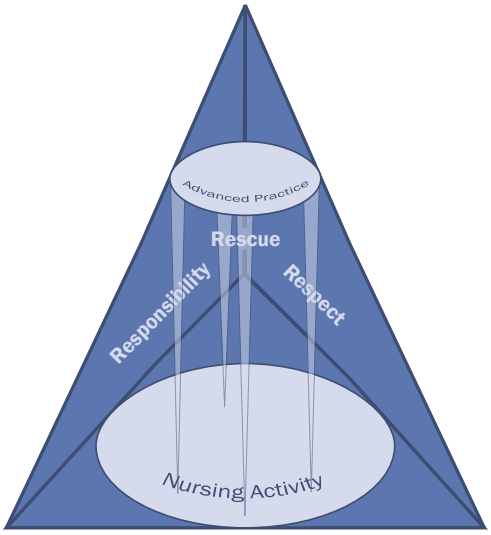
The futures triangle thus provided the framework for a model of advanced practice based on the findings from the stories (the stories commented on many things that enhance or limit advanced practice).

A Futures Model of Advanced Practice Nursing

The nature of practice, the subjective reality, where nurses place themselves within the world of practice and how they portray themselves culminates in a story, the advanced practice story.

Figure 3 presents a model of advanced nursing practice that emerges from and is supported by the interpretation and examination of nurses' stories. This diagrammatic representation illustrates the links: what practising at an advanced level means to the nurse.

Figure 3: A Futures Model of Advanced Nursing Practice



'The world of advanced practice' is represented in figure 1. When the futures triangle (figure 2) is superimposed over the world of advanced practice, a futures model of advanced practice emerges. Situated near the base of the futures triangle, Nursing Activity represents the foundations of practice, viewed here as *usual* practice.

In this model nursing activity is represented by Andersen's Nursing Activity Model (1991). This model is applicable today despite changing contexts, technology and increased acuity. It was derived from observation of actual practice and represents "an activity called into being in response to a change in a person's situation" (Andersen 1991, p.105). The goal of action taking in this model is situation improvement or "the process of enquiry as it applies to and shapes nursing intervention" (Andersen 1991, p. 105). The concept of situation improvement, along with other concepts such as initiating, guiding and responsible care, are consistent with the findings of this study. Based on these associations Andersen's model was used to depict the minimum requirements of contemporary nursing practice.

Advanced practice is distinguishable from usual practice because of its placement higher up in the Futures Model of Advanced Nursing Practice (figure 3). While the parallels in the findings to Andersen's model are evident (Andersen 1991, p. 106), the extension of this model in particular areas allows the additional dimensions identified within the stories to be envisaged. The amplification of selected activities, practice states, skills and abilities define advanced practice. While anchored, they arise and expand from the elements within Andersen's Nursing Activity Model (1991). Components of experience, knowledge, achieving and functioning at a higher level, and using a full repertoire of skills are all represented by this elevation of practice. Because it is higher up the diameter is smaller representing the refinement and honing of skills.

However as with Andersen's (1991) model, "the activity is more than the sum of its parts or elements" (p. 105). The relationship between thinking, judgement and action-taking that is represented in Andersen's (1991) model, crucial to advanced practice, is amplified. The stories qualify thinking as intelligent and knowledgeable. Action is accurate, appropriate and purposeful. Behaviour and attitudes are critical. The person centred care is better represented. The relationship between the nurse and the patient and its importance is depicted more strongly for advanced practice. Nurses' activity is carried out alongside and with the patient (*transporting*), not in isolation.

The nature of advanced practice emanates primarily and prominently because of the nurse's focus. The focus for the advanced practice nurse is the patient. The progressive nature of interaction is seen as well as the overlapping of activity, rather than a stepwise process as in usual practice (refer figure 1 for details). These are the things that make the difference - that set practice apart as advanced.

At the same time, the futures triangle frames the world of advanced practice describing the competing dimensions of the future and illustrating the dimension of time. The world of advanced practice is further away from the weights; closer to the pushes and less stretched by the pulls (smaller circumference), illustrating that the nurses are role-making for 'their future'. Dealing with difficulties and troublesome issues (weights) are acknowledged in this model, issues not obvious and not mastered

in usual practice. Advanced practice nurses are not weighed down, they have responded to the pulls. They have the capacity to deal with contemporary demands. They are utilising a range of futuristic functions. They are forever updating. Making nursing practice is an approach to respond to and meet demands, a complex integration of thought and activity, a dynamic process. This model allows us to see the influences and responses as well as where advanced practice nurses are situated in time, and in practice. We see where advanced practice fits. Colour attempts to emphasise the complexity and dynamic nature of practice and shows the fluidity of practice and room for expansion. The pillars show how the level of practice is raised and amplified. The pyramid represents the enveloping of the aspects: how they surround, support, form and shape advanced practice. The multidimensional form signifies the nature of advanced practice.

CONCLUSION

In Australia nursing activities were described in the ANMC statement on the roles of the registered nurse and enrolled nurse (ANCI 1995; ANMC 2007b). Although nurses have input into the policies and regulations that define the scope of nursing practice, including all fields and specialities, by necessity the result is limited to the formulation of general goals and basic core competencies. There is recognition that "clinical decision making needs to be consistent with elements of National Competency Standards, Codes of Ethics and Professional Conduct" (Bellchambers and McMillan 2006 p. 24). Despite the usefulness and necessity of professional guidelines, since it is often unclear how decisions are finally made, any understanding of what influenced the decisions to include a particular activity, or of how nurses view their practice, is impossible to decipher from this literature.

Many studies that describe nursing roles and the boundaries of practice are limited in that they place little relevance on the nurse's view. The focus of many studies, the nature of the questions, and the methodologies employed, has limited the contribution to an understanding of practice from the nurses' perspective. In general, studies that focus on competencies or activities of nursing provide little insight as to how nurses perceive their work.

When processes are included, much more understanding is gained. From the AN project the researchers compiled a set of guidelines regarding advanced practice. Much detail and explanation was included which when explored and examined using the modified narrative analysis methods, allowed a more complete picture to surface.

The development of the Futures Model of Advanced Nursing Practice presented here assists in clarifying and understanding the complete narrative that emerged from the nurses' stories about their experiences.

REFERENCES

Australian Nursing Council Inc (ANCI). 1994. National Competency Standards for the Registered and Enrolled Nurse in Recommended Domains. Turner.A.C.T. Australia: Australian Nursing Council Inc.

Australian Nursing Council Inc (ANCI). 1995. Outline of the ANCI national nursing competencies for registered and enrolled nurses.

Andersen, B. 1991. Mapping the terrain of the discipline. In G. Gray and R. Pratt (Eds.), Towards a Discipline of Nursing (pp. 95-123). London: Churchill Livingston; Longman Group UK Limited.

Australian Nursing and Midwifery Council (ANMC). 2007a. National competency standards for the nurse practitioner http://www.anmc.org.au/docs/Competency_Standards_for_the_Nurse_Practitioner.pdf (accessed 14.03.07)

Australian Nursing and Midwifery Council (ANMC). 2007b. National competency standards for the registered nurse. http://www.anmc.org.au/docs/Competency_standards_RN.pdf (accessed 14.03.07).

Bailey, P. 1996. Assuring quality in narrative analysis. Western Journal of Nursing Research, 18(2):186-194.

Bellchambers, H., and McMillan, M. (2006). Progression QUM in aged care. *Geriaction, 24*(2), 15-26.

Benner, P. A., and Tanner, C. A. 1987. Clinical judgment: How expert nurses use intuition. American Journal of Nursing.

Benner, P. A., Tanner, C. A., and Chesla, C. A. 1996. Expertise in nursing practice. Caring, clinical judgement and ethics. . New York: Springer Publishing Company.

Brokensha, G. 2002. Clinical intuition: More than rational? Australian Prescriber, 25, 14-15. Retrieved from www.australianprescriber.com/magazine/25/1/14/5/

Bryant-Lukosius, D., DiCenso, A., Browne, G., and Pinelli, J. 2004. Advanced practice nursing roles: Development; implementation and evaluation. *Journal of Advanced Nursing, 48*(5): 519-529.

Carper, B. A. 1978. Fundamental patterns of knowing in nursing. In L. H. Nicoll (Ed.), Perspectives on Nursing Theory (3rd ed.). Philadelphia: Lippincott.

Chang, W., Mu, P., and Tsay, S. 2006. The experience of role transition in acute care nurse practitioners in Taiwan under the collaborative practice model. Journal of Nursing Research, 14(2): 83-92.

Chiarella, M. 2006. 30th anniversary commentary on Lorentzon, M. and Hooker, J.C. 1996. Nurse practitioners, practice nurses and nurse specialists: What's in a name? Journal of Advanced Nursing 24; 649-651. Journal of Advanced Nursing, 55 (3):276.

Cioffi, J. 1997. Heuristics, servants to intuition, in clinical decision making. *Journal of Advanced Nursing* 26(1):203-208.

Cooke, H. 1993. Boundary work in the nursing curriculum: The case of sociology. Journal of Advanced Nursing, 18(12):1990-1998.

Degeling, P., Hill, M., Kennedy, J., Coyle, B., and Maxwell, S. 2000. A crossnational study of differences in the identities of nursing in England and Australia and how this has affected nurses' capacity to respond to hospital reform. *Nursing Inquiry*, 7(2):120-135.

Fenton, M. and Brykczynski, K. 1993. Qualitative distinctions and similarities in the practice of clinical nurse specialities and nurse practitioners. *Journal of Professional Nursing,* 9:313-326.

Furlong, E., and Smith, R. 2005. Advanced nursing practice: Policy, education and role development. *Journal of Clinical Nursing,* 14(9):1059-1066.

Hall, J., M., Stevens, P., and Meleis, A. 1992. Developing the construct of role integration: A narrative analysis of women clerical workers' daily lives. *Research in Nursing and Health*, 15(6):447-457.

Heartfield, M. 2006. Specialisation and advanced practice discussion paper. A select analysis of the language of specialisation and advanced nursing and midwifery practice. http://www.nnnet.gov.au/downloads/recsp_paper.pdf (accessed 20.03.07).

Herbig, B., Bussing, A., and Ewert, T. 2001. The role of tacit knowledge in the work context of nursing. *Journal of Advanced Nursing,* 34(5):687-695.

Higuchi, K., Hagen, B., and Brown, S. 2006. A new role for advanced practice nurses in Canada: Bridging the gap in health services for rural older adults. *Journal of Gerontological Nursing,* 32(7):49-55.

Hockenberry-Eaton, M. 1991. Merging advanced practice roles: The NP and CNS. *Journal of Paediatric Health Care,* 5(3):158-159.

Inayatullah, S. 2004a. Why futures thinking. http://www.metafuture.org/futures_thinking.htm (accessed 20.03.07).

Keane, A. 1994. Critical care nurse practitioners: Evolution of the advanced practice nursing role. *American Journal of Critical care*, 3(3):232-237.

Kucera, K. 2007 Nurses' stories of advanced nursing practice: the subjective reality. unpublished thesis, Master of Nursing Research, The University of Newcastle.

Lathlean, J. 2007. Researching the implementation of pioneering roles in nursing and midwifery. *Journal of Research in Nursing,* 12(1):29-39.

Linton, A. 2005 . A Christmas carol revisited - nursing's past, present and future. *Journal of Gerontological Nursing,* 31(12):3.

Lumby, J. 1996. Theory generation through reflective practice. In J. Greenwood (Ed.), Nursing Theory Australia. Development and Application (pp. 321-338). Pymble NSW Australia: Harper Educational Publishers; Harper Collins South Wood Press.

McCutcheon, H., and Pincombe, J. 2001. Intuition: An important tool in the practice of nursing. *Journal of Advanced Nursing*, 35(3):342-348.

McGee, P. 1993. Defining nursing practice. *British Journal of Nursing,* 2(20):1022-1026.

McMillan, M. 2004. Conference Presentation, unpublished, The University of Newcastle.

McMillan, M., Little, P., Conway, J. and Bujack, E. 2001. The scope of nursing practice. The implications for contemporary nursing education and practice. Newcastle. Faculty of Nursing, The University of Newcastle, higher Education Division, Department of education, Training and Youth Affairs.

McMillan, M., Keatinge, D., Little, P., Madjar, I., Bujack, E., Andrews, J. 1997. The development of competency standards for the advanced nurse clinician. 1996/1997 A report to the Department of Employment, Education, Training and Youth Affairs on a project carried with funding from that department and under the auspices of the Australian Nursing Federation: Australian Nursing Federation.

Meleis, A., Arruda, E., Lane, S., and Bernal, P. 1994. Veiled, voluminous, and devalued: Narrative stories about low income women from Brazil, Egypt, and Columbia. *Advances in Nursing Science,* 17(2):1-15.

Murphy, B. 2007. Medical role substitutions and delegations - overcoming the fear. Australian Health Review, 31, S20-24

Paley, J. 2006. Evidence and expertise. *Nursing Inquiry,* 13(2):82-93.

Polanyi, L. 1985. Telling the American story. A structural and cultural analysis of conversational storytelling. New Jersey: Ablex Publishing Corporation.

Polkinghorne, D.E. 1988. Narrative knowing and the human sciences. New York: State University of New York press.

Reissman, C. 1993. Narrative Analysis. Newbury. California: SAGE Publications Inc.

Ruth-Sahd, L.A., and Hendy, H.M. 2005. Predictors of novice nurse' use of intuition to guide patient care decisions. *Journal of Nursing Education,* 44(10):450-458. Retrieved from OVID

Stevens, P. 1993. Marginalized women's access to health care: A feminist narrative analysis. *Advances in Nursing Science,* 16(2):39-56.

Stevens, P. 1994. Protective strategies of lesbian clients in health care environments. *Research in nursing and Health,* 17(3):217-229.

Stevens, P. 1995. Structural and interpersonal impact of heterosexual assumptions on lesbian health care clients. *Nursing Research,* 44(1):25-30.

Victorian nurse practitioner project: Final report of the taskforce, December, 1999. 2000 http://www.dhs.vic.gov.au/pdpd/pdfs/nurseprac.pdf (accessed 14.03.07; 21/06/10).

Historical imagination and issues in rural and remote area nursing

AUTHOR

Pamela J. Wood
RN, PhD
Associate Professor, Graduate School of Nursing, Midwifery and Health, Victoria University of Wellington, New Zealand.
pamela.wood@vuw.ac.nz

KEY WORDS

Nursing history, rural and remote area nursing, bush nursing, recruitment, historical imagination

ABSTRACT

Objective
Using issues in rural and remote area nursing as the example, this paper explores how nurses can use their historical imagination in considering professional issues today.

Setting
Rural and remote area nursing.

Primary argument
Historical imagination is the creative capacity to imagine possibilities of engaging with the past. Historical imagination in nursing has the potential to help nurses address current professional issues. Points of familiarity with the past can show nurses which issues are enduring and which are transient. A sense of familiarity can bring strength, encouragement and comfort. Points of difference can show nurses that problems are not necessarily permanent or can be dealt with differently. This paper uses aspects of the history of bush nursing in Australia to illustrate how nurses in rural and remote area nursing today could use their historical imagination in addressing current issues. It explores points of familiarity and difference between issues faced by bush nurses in the past and current issues in the international literature. Ways of using historical imagination in rural and remote area nursing recruitment are considered to illustrate the process.

Conclusions
As the example of engaging with the history of bush nursing in Australia attempts to demonstrate, nurses can use their historical imagination to identify points of familiarity and difference with the past to prompt a shift in thinking and strengthen creativity in addressing current issues.

INTRODUCTION

A number of schemes arose in different countries in the early twentieth century to provide nursing services to people living in isolated, remote regions where medical aid was scarce. Research into their history shows that nurses faced strikingly similar issues to those encountered by nurses in rural and remote area nursing today. Nurses could find that viewing issues through the lens of the past offers a new perspective – historical imagination can bring fresh insights to current professional issues. This paper explores how this might be done.

Historical imagination in nursing

The imagination nurses display in their nursing practice, especially in empathising with patients, can be extended to an imaginative use of history. The author defines historical imagination as the creative capacity to envisage possibilities of engaging with the past. Historical imagination in nursing includes envisaging the ways that history might offer insight into current professional concerns. Nurses often claim that it is necessary to know about the past in order to understand the present and plan for the future (Black 1997/98). Some nurse historians have briefly mentioned the idea that nursing history can have application in the present (Mitchell 2002; Rafferty 1997/98; Lusk 1997; Cushing 1995; Hezel and Linebach 1991; Sarnecky 1990). No explanation has been offered, however, for *how* nurses can use history in addressing present professional interests.

As the historian Tosh (2006) has pointed out, a sense of familiarity when reacting to the past can allow us to distinguish between what is enduring and what is transient. He regards this ability as vital to any realistic social program in the present. In contrast, a sense of difference reminds us that there is more than one way to interpret or respond to a situation. A sense of familiarity with the past does not mean that history is repeating itself. While the issue might be the same, the details will be different as these are always determined by the context – the specific circumstances of time and place.

Nurses can use their historical imagination by engaging with an account of nursing in the past to shift their frame of reference on a current issue. Engaging with history can inspire a fresh outlook.

History of Australian rural and remote area nursing

Historical research on aspects of rural and remote area nursing in Australia between 1911 and 1930 forms the basis in this paper for exploring historical imagination in nursing. Historical sources included accounts from bush nurses published in nursing journals, early histories of bush nursing and archival records of the New South Wales Bush Nursing Association (NSWBNA) as an example of a particular service. Bush nursing services remain in different forms today (Greene and Burley 2006). Only brief summaries of this historical research are possible in this paper.

Lady Dudley, wife of the Governor-General of Australia, proposed a scheme for people in the Australian outback based on the service she had previously established in the remote west of Ireland. Proclaiming her idea on travels around Australia in 1910, she miscalculated both the nature of the system needed (state rather than federal) and Australian settlers' likely reaction to what some perceived as interference from the old country (Andersen 1951; ANJ 1911c). However, Amy Hughes, Superintendent of the Queen Victoria Jubilee Institute that provided a rural service in Britain, followed in her wake and her adept intervention saved the situation. Separate bush nursing associations were established in individual states (ANJ 1911a; 1911b; 1910b; 1910c; 1910d). The first bush nurses in Victoria and New South Wales (NSW) were appointed in 1911.

The nurse's role often combined nursing and emergency care, midwifery and public health. Their work demanded creativity, resilience, determination and courage, as well as political astuteness to deal with the often conflicting demands of policy and pragmatic necessity.

DISCUSSION

To avoid influencing the historical analysis, issues in bush nursing were identified from the historical

record before examining current international remote and rural nursing literature. Historical issues were recruitment of nurses, preparation for the role, practicalities of the work (including the difficulty in getting about, and adapting and developing practice for this new and diverse nursing role), the challenges of living and working in a community, the taxing nature of long hours of work, professional isolation and professional relationships with doctors. Literature on current rural and remote area nursing in Australia, New Zealand, Ireland, Canada and the USA identifies several issues, some of which show international trends (MacLeod et al 2004; Bushy 2002; Litchfield and Ross 2000; MacLeod et al 1998).

Points of familiarity

Recruitment of nurses

In their first 20 years, bush nursing associations could not rely on a sufficient supply of Australian nurses. Nurses were actively recruited and carefully screened in Britain by the Society for the Oversea Settlement of British Women (SOSBW), a part-voluntary part-state organisation founded in 1919 by merging influential women's emigration societies (Pickles 2002).

The NSWBNA told the SOSBW that it wanted nurses who were self-reliant, reliable, trustworthy and preferably with some knowledge of country life. Being able to ride or drive was an advantage but (surprisingly) not essential (Kirkcaldie 1923). As both the candidates and SOSBW members were usually unfamiliar with Australian outback conditions, the screening process relied heavily on assessing the nurses' upbringing and qualities against this list, judged through references and interview. The Belfast matron interviewing Nurse M. Mitchell from Londonderry in 1924, for example, reported that she appeared a tall, well-made, strong, healthy woman. Although she could not ride a horse or bicycle or drive a motor car, and had no experience outside her hospital training, she had other qualities. She understood practical housekeeping and cooking, recognised that initiative, discretion and knowledge were essential, appeared to be a woman of common sense and was quite prepared for hard work. The matron judged she would fill the position creditably (Musson 1924).

The recruitment strategy worked well. The NSWBNA told the SOSBW in 1929 that the nurses it sent were doing wonderful work and seemed to cope with the most difficult situations in a remarkable manner (Morrice 1929). At that time there were 10 overseas nurses in the service (Wing 1970).

Bush nurses required qualifications in nursing, midwifery and in some regions child welfare but in times of shortage less qualified nurses were appointed (Bardenhagen 2003; Wing 1970). In an attempt to address this, bush nursing associations sometimes offered to pay for the missing training if the nurse agreed to work for a specified period afterwards (Wing 1970).

The difficulties of recruitment remain today. Literature on rural and remote area nursing services in Australia, for example, shows falling numbers, high turnover and an ageing workforce but also the active development of recruitment and retention strategies (Hegney et al 2002a; 2002b; 2002c; Hegney and McCarthy 2000; van Haaren and Williams 2000; Witham 2000). As in the past, nurses are recruited from overseas (Francis et al 2008). Enhancing job satisfaction is central to rural nurse retention (Pan et al 1995; Stratton et al 1995).

Challenges in living and working in a rural community

The bush nurse was a significant and valued member of her community but as the only nurse she could feel a conflicting mix of both social isolation and social exposure. Personal and professional boundaries were permeable. Trying to keep a professional distance conflicted with the need to be accepted as a community member and could exacerbate her loneliness. The most successful at settling into the role were those who enjoyed rural living, were able to manage life far from their usual social and professional supports and could deal with the ambiguity of their position in the community. Political astuteness was needed for relating well to local committees, fitting into the community and effectively managing the health system. The ability to use social and professional connections was crucial in ensuring an effective bush nursing service.

Recent literature identifies fitting into a rural community, being highly visible and therefore lacking anonymity and privacy, having unclear boundaries between personal and professional life, and being socially isolated as problems in remote and rural nursing today. On the other hand, the rural lifestyle, relationships with the community and having community respect are still sources of satisfaction (Henderson-Betkus and MacLeod 2004; Bushy 2002; Hegney et al 2002a; 2002b; 2002c; Crosby et al 2000; Hegney and McCarthy 2000; MacLeod et al 1998). As earlier bush nurses found, nurses today who establish networks and personal connections with hospital staff tend to be successful when seeking advice or support and are effective resource brokers (Conger and Plager 2008; Murrell-McMillan 2006; Bushy 2002).

Independence and diversity of practice

The bush nurse could see several patients in one day, with a diverse range of conditions, or she could care for a sick person in their home for an extended period, depending on her other cases. Her professional isolation was amplified by the absence of doctors. Superiors sharply reminded nurses of their duty to seek and follow medical instructions yet the distance to the nearest doctor (measured in miles, hours or difficulty of intervening terrain) meant this expectation was hard to meet. Having a telephone connected to their home made it easier to seek advice. The bush nurse at Jindabyne in NSW in 1911, however, had to ask the local exchange to leave her switchboard plugs in at night as they normally disconnected subscribers from 6 p.m. to 9 a.m. (ANJ 1911d).

Nurses usually made pragmatic and skilful decisions about immediate treatment yet were relieved when these were affirmed by the doctor. Nevertheless, judging clinical situations in this context of professional isolation brought an independence of practice that they identified as one of the most satisfying features of the role. They were also keenly aware of the degree of responsibility accompanying it.

Nurses today value the diversity and independence of remote and rural practice and the absence of organisational structures (Hegney and McCarthy 2000). The complex nature of nursing practice as an expert generalist still brings a sense of carrying a major responsibility and an anxiety to maintain excellent practice (e.g. Conger and Plager 2008; Eldridge and Judkins 2003). Nurses' anxiety is exacerbated when practice interventions are vital but not necessarily legally endorsed (Witham 2000). Rural nurses in Ireland appreciate clinical supervision (Coleman and Lynch 2006) and Australian nurses the support of their managers (van Haaren and Williams 2000).

Professional relationships with doctors

Bush nurses required political acumen to manage a professional relationship with doctors who often did not relish having a nursing service diminish their income by depleting the number of patients paying fees for medical visits. Amy Hughes had alerted Australian nurses to the need to work in harmony with them (ANJ 1910c). The NSWBNA Council investigated several complaints by doctors in 1912. A medical member of the council advised one nurse to be extremely circumspect in her relation with the doctor. She was not there to take his place but to act under his direction whenever that was available (Wing 1970).

This, of course, was the nub of the problem. When a doctor could be reached, the nurse was to seek and follow his instruction. When medical advice was not available, nurses were expected to take the doctor's place proficiently and act decisively to treat the patient on their own. Apart from the necessary clinical expertise, they clearly needed political savvy to manage this conflicting situation.

As in the past, some nurses strike difficulties in their professional relationships with doctors and with doctors' views of the nurse's role (Murrell-McMillan 2006; Muus et al 1993). A positive professional relationship and nurses' sense of being valued in their role can contribute to a stable rural nursing workforce (Murrell-McMillan 2006; Litchfield and Ross 2000).

Points of difference

Accommodation and location of practice

Bush nurses had to deal with often very different living conditions than they were used to and had to rough it along with settlers. Nursing in settlers' homes was challenging when they lived in a tent, hut or basic homestead, sometimes in conditions nurses regarded as anything but clean and without separate accommodation for them. One NSW bush nurse, tending a patient in a tent, had to get what sleep she could on a chair and case, as a bed on the ground was impossible 'on account of the number of snakes' (ANJ 1913, p.94).

Getting about to patients was a major, daily issue. Reaching patients by horseback was often extremely challenging. As one example, Nurse Rowe in Victoria had to use roads that bushmen said would 'bog a duck' – they were rarely passable in summer and in winter 'worse than awful'. On one night-time journey, her horse was on its haunches, slipping and sliding. The twelve miles took three hours across paddocks, swamps, drains, marshes and streams, 'horrible enough in the daylight' but 'awful in the darkness'. The journey to the patient's cottage ended in a scramble on foot over a fallen tree across a creek (Kai Tiaki 1910, p.89). Reaching patients can still be challenging today but is infrequently mentioned as an issue in the literature (MacLeod et al 1998).

Some bush nurses had a cottage provided. Eleanor Davies in NSW in 1917 had a little two-roomed cottage for which she stencilled curtains and hangings, making it 'cosy and homelike' (ANJ 1917, p.436). Living in an adapted or purpose-built cottage with an additional room designed to accommodate a patient lessened the nurse's privacy yet presumably made it easier to care for people and meant she could enjoy her own surroundings. Some also tended patients in very small rural hospitals. In the past, breaks between cases were limited. As one bush nurse remarked: 'A nurse ought to be like a machine, ready to go day and night. Unfortunately, we are not made that way' (ANJ 1915, p.286).

Nurses in remote rural services in different countries today deliver care in a variety of locations but do not usually live in patients' homes to nurse them. Long hours of work, particularly in being approached for help 'after hours', is occasionally identified in the literature as an issue today (MacLeod et al 1998).

Preparation for the role was not possible for the first nurses in the bush services. The reality and requirements of the work had to be figured out on the job. As they adapted their practice, nurses tried to share their new knowledge so others could prepare for this role or enhance their existing work. Several bush nurses exchanged ideas through long letters (ANJ 1915). Specific preparation for rural and remote area nursing is now strongly advocated (Hegney 2003) and available in undergraduate and postgraduate nursing education (Conger and Plager 2008; Yonge et al 2006; Kenny et al 2004; MacLeod et al 1998).

Issues identified by nurses now but not in the past relate to technological support and dissatisfaction with lack of career pathways and access to education, excessive administration and paperwork, poor remuneration, lack of managers' support and repeated restructuring of health systems (Hegney et al 2002b; 2002c; MacPhee and Scott 2002; Crosby et al 2000; Hegney and McCarthy 2000; van Haaren and Williams 2000). These differences are largely due to the specific characteristics of the current context.

Using historical imagination to address current issues

Deciding how historical imagination might be applied in addressing current issues in remote rural services is the prerogative of nurses associated with those services. As a nurse historian, the author can only suggest some possible directions. As recruitment remains an international issue, nurses might consider using the past to promote recruitment today. Bush nurses and those in similar services in other countries nursed patients in often trying circumstances. Nurses were creative and resourceful. One bush nurse, for example, who nursed a little boy with pneumonia in a tent, quickly made an emergency steam kettle. She shaped a piece of tin into a long spout and fitted it into a hole in the lid of an old honey tin.

She published her idea so others could use it (ANJ 1910a). Nurse W. M. Thomas wrote a booklet on first aid in the bush that was also recommended for use in the New Zealand backblocks (Kai Tiaki 1911). Bush nurses were among the few nurses publishing suggestions for improving practice, a collegial effort significantly expanded today with specialist rural nursing journals. The qualities nurses displayed in the past could be celebrated as the qualities needed and shown by remote and rural nurses in any current location and used in recruiting nurses today. Nurses considering remote rural practice could identify with what Bushy (2002, p.109) has described as rural nurses' 'rich heritage of resilience, resourcefulness, adaptability and creativity'. The fact that the satisfyingly diverse and independent nature of practice is an *enduring* characteristic of remote and rural nursing could also be promoted. This does not address more fundamental issues such as isolation and remuneration but could be used as a positive aspect of recruitment strategies.

Although we need to remain aware that the specific conditions leading to issues are different in each time context, a sense of familiarity with the past can bring strength and encouragement. There might be comfort, rather than frustration, in knowing that some of the more difficult issues persist because they are determined by rural circumstances rather than any inability to resolve them. Equally, a sense of difference can show that problems are not necessarily permanent or can be interpreted or dealt with differently.

Engaging with nursing history necessarily depends on the availability of historical research relevant to different nursing interests. Care must be taken not to 'read history backwards, to see events and attitudes in the light of subsequent preoccupations and not as they occurred' (Baly 1980, p.xi). This is why in this research past issues were identified before addressing current literature. As Rafferty (1997/98) has suggested, careful historical scholarship is needed as well as scholars trained in both nursing and history. We also need to acknowledge that it is not always comfortable to engage with the past. We can be confronted by events that are perceived very differently now. History can, however, prompt a shift in thinking and stimulate creativity.

CONCLUSION

Historical imagination in nursing has the potential to help nurses address current professional issues. As the example of engaging with the history of rural and remote area nursing has attempted to demonstrate, points of familiarity and difference with the past can show nurses today which issues are enduring and therefore not solely caused by current circumstances. Positive aspects of nursing in a particular service evident in both the past and present can be drawn on in promoting the service today. Different responses to familiar issues in the past can encourage nurses by showing there are always alternative ways of dealing with situations. New ways can be imagined. Whether generating a sense of familiarity or difference, engaging with accounts of nursing in the past can lead to a fresh reflection on issues today and open up possibilities for action.

REFERENCES

Andersen C. 1951. The story of bush nursing in Victoria. Bush Nursing Association of Victoria: Melbourne.

Australasian Nurses' Journal (ANJ). 1910a. Miss Amy Hughes. *Australasian Nurses' Journal,* 8(6):183.

Australasian Nurses' Journal (ANJ). 1910b. An emergency steam kettle. *Australasian Nurses' Journal,* 8(7):244.

Australasian Nurses' Journal (ANJ). 1910c. Miss Hughes in Queensland. *Australasian Nurses' Journal*, 8(7):233.

Australasian Nurses' Journal (ANJ). 1910d. District nursing in Australia. *Australasian Nurses' Journal*, 8(9):290.

Australasian Nurses' Journal (ANJ). 1911a. Miss Hughes in Australia. *Australasian Nurses' Journal,* 9(1):12, reprinted from the *Nursing Times.*

Australasian Nurses' Journal (ANJ). 1911b. The New South Wales Bush Nursing Association. *Australasian Nurses' Journal,* 9(4):114.

Australasian Nurses' Journal (ANJ). 1911c. Bush nursing. *Australasian Nurses' Journal,* 9(7):225.

Australasian Nurses' Journal (ANJ). 1911d. The New South Wales Bush Nursing Association. *Australasian Nurses' Journal*, 9(10):329.

Australasian Nurses' Journal (ANJ). 1913. Bush nursing in New South Wales. *Australasian Nurses' Journal*, 11(3):94.

Australasian Nurses' Journal (ANJ). 1915. From a bush nurse. *Australasian Nurses' Journal*, 13(8):286.

Australasian Nurses' Journal (ANJ). 1917. New South Wales Bush Nursing Association. *Australasian Nurses' Journal*, 15(12):436-7.

Baly, M. 1980. Nursing and social change (2nd edn). William Heinmann Medical Books: London.

Bardenhagen M. 2003. Professional isolation and independence of bush nurses in Tasmania 1910-1957: 'We were very much individuals on our own'. PhD thesis, University of Hobart.

Black, S. 1997/98. Editorial. *Nurse Researcher*, 5(2):3-4.

Bushy A. 2002. International perspectives on rural nursing: Australia, Canada, USA. *Australian Journal of Rural Health*, 10(2):35-7.

Coleman, D. and Lynch, U. 2006. Professional isolation and the role of clinical supervision in rural and remote communities. *Journal of Community Nursing,* 20(3):35-7.

Conger, M.M. and Plager, K.A. 2008. Advanced nursing practice in rural areas: Connectedness versus disconnectedness. *Online Journal of Rural Nursing and Health Care*, 8(1):24-38, http://www.rno.org/journal/index.php/online-journal (accessed 16.02.09).

Crosby, F., Ogden, A., Heady, J., Agard, N.P. and Kerr, S.L. 2000. Survey of NYS rural nurses: Practice characteristics, needs, and resources. *Journal of the New York State Nurses Association*, 31(2):10-15, http://www.nysna.org/images/pdfs/communications/journal/fl_wntr00.pdf (accessed 18.02.09).

Cushing, A. 1995. An historical note on the relationship between nursing and nursing history. *International History of Nursing Journal*, 1(1):57-60.

Eldridge, C.R. and Judkins, A. 2003. Rural nurse administrators: essentials for practice. *Online Journal of Rural Nursing and Health Care*, 3(2):9-16, http://www.rno.org/journal/index.php/online-journal (accessed 16.02.09).

Francis K., Chapman, Y., Doolan, G., Sellick, K. and Barnett, T. 2008. Using overseas registered nurses to fill employment gaps in rural health services: Quick fix or sustainable strategy? *Australian Journal of Rural Health*, 16(3):164-169.

Greene, P. and Burley, M. 2006. The changing role of bush nurses in East Gippsland, Victoria. *Rural Society Journal*, 16(1):98-112.

Hegney, D. 2003. Rural and remote area nursing: An Australian perspective. *Online Journal of Rural Nursing and Health Care*, 3(1):5-7, http://www.rno.org/journal/index.php/online-journal (accessed 16.02.09).

Hegney, D. and McCarthy, A. 2000. Job satisfaction and nurses in rural Australia. *Journal of Nursing Administration,* 30(7/8):347-50.

Hegney, D., McCarthy, A., Rogers-Clark, C. and Gorman, D. 2002a. Retaining rural and remote area nurses: The Queensland, Australia experience. *Journal of Nursing Administration*, 32(3):128-135.

Hegney, D., McCarthy, A., Rogers-Clark, C. and Gorman, D. 2002b. Why nurses are attracted to rural and remote practice. *Australian Journal of Rural Health,* 10(3):178-86.

Hegney, D., McCarthy, A., Rogers-Clark, C. and Gorman, D. 2002c. Why nurses are resigning from rural and remote Queensland health facilities. *Collegian*, 9(2):33-39.

Henderson-Betkus, M. and MacLeod, M. 2004. Retaining pubic health nurses in rural British Columbia: The influence of job and community satisfaction. *Canadian Journal of Public Health*, 95(1):54-8.

Hezel, L.F. and Linebach, L.M. 1991. The development of a regional collection: Its relevance to practice, education, and research. *Nursing Outlook*, 39(6):268-72.

Kai Tiaki. 1910. The bush nurse. *Kai Tiaki: Journal of the Nurses of New Zealand*, 3(2):89.

Kai Tiaki. 1911. Books for study and leisure hours. *Kai Tiaki: Journal of the Nurses of New Zealand*, 4(3):133.

Kenny, A., Carter, L., Martin, S. and Williams, S. 2004. Why 4 years when 3 will do? Enhanced knowledge for rural nursing practice. *Nursing Inquiry,* 11(2):108-16.

Kirkcaldie, R., New South Wales Bush Nursing Association (NSWBNA) Secretary, to Miss Potts, Society for the Oversea Settlement of British Women (SOSBW), 29 October 1923. Letter. NSWBNA records, 2815, 14 (65), K48710, 1924-29. Mitchell Library: Sydney.

Litchfield, M. and Ross, J. 2000. The role of rural nurses national survey. Centre for Rural Health, University of Otago: Christchurch.

Lusk, B. 1997. Historical methodology for nursing research. *Image: Journal of Nursing Scholarship*, 29(4):355-9.

MacLeod, M., Browne, A.J. and Liepert, B. 1998. Issues for nurses in rural and remote Canada. *Australian Journal of Rural Health*, 6(2):72-8.

MacLeod, M., Kulig, J.C., Stewart, N.J., Pitblado, J.R. and Knock, M. 2004. The nature of nursing practice in rural and remote Canada. *Canadian Nurse*, 100(6):27-31.

MacPhee, M. and Scott, J. 2002. The role of social support networks for rural hospital nurses. *Journal of Nursing Administration*, 32(5):264-272.

Mitchell, D. 2002. A reflection on personal reminiscence and history in nurse education. Guest editorial, *Nurse Education Today*, 22(7):509-10.

Morrice, N., NSWBNA Secretary, to Franklin, A.C., SOSBW Secretary, 6 May 1929. Letter. NSWBNA records, 2815, 14 (65), K48710, 1924-29. Mitchell Library: Sydney.

Murrell-McMillan, K. 2006. Why nurses in New Zealand stay working in rural areas. *New Zealand Family Physician,* 33(3):173-5.

Musson, A.E., Matron, Royal Victoria Hospital, Belfast, to SOSBW Secretary, 6 March 1924. Letter. NSWBNA records, 2815, 14 (65), K48710, 1924-29. Mitchell Library: Sydney.

Muus, K.J., Stratton, T.D., Dunkin J.W. and Juhl, N. 1993. Retaining registered nurses in rural community hospitals. *Journal of Nursing Administration*, 23(3):38-43.

Pan, S., Dunkin, J., Muus, K.J., Harris, R. and Gellar, J.M. 1995. A logit analysis of the likelihood of leaving rural settings for registered nurses. *Journal of Rural Health*, 11(2):106-113.

Pickles K. 2002. Pink cheeked and surplus: Single British women's inter-war migration to New Zealand, in L. Fraser and K. Pickles K (eds). *Shifting centres: Women and migration in New Zealand history*. University of Otago Press: Dunedin.

Rafferty, A.M. 1997/98. Writing, researching and reflexivity in nursing history. *Nurse Researcher*, 5(2):5-18.

Sarnecky, M. 1990. Historiography: A legitimate research methodology for nursing. *Advances in Nursing Science,* 12(4):1-10.

Stratton, T.D., Dunkin, J.W., Juhl, N. and Geller, J.M. 1995. Retainment incentives in three rural practice settings: Variations in job satisfaction among staff registered nurses. *Applied Nursing Research*, 8(2):73-80.

Tosh, J. with Lang, S. 2006. The pursuit of history: Aims, methods and new directions in the study of modern history (4th edn). Pearson Longman: Harlow.

van Haaren, M. and Williams, G. 2000. Central Australian nurse management model (CAN Model): A strategic approach to the recruitment and retention of remote-area nurses. *Australian Journal of Rural Health*, 8(1):1-5.

Wing, W. 1970. The history of the New South Wales Bush Nursing Association (Inc). New South Wales Bush Nursing Association: Sydney.

Witham, H. 2000. Remote and rural nursing: An endangered profession? *Australian Nursing Journal*, 7(9):18-21.

Yonge, O., Ferguson, L. and Myrick, F. 2006. Preceptorship placements in western rural Canadian settings: Perceptions of nursing students and preceptors. *Online Journal of Rural Nursing and Health Care*, 6(2):47-56, http://www.rno.org/journal/index.php/online-journal (accessed 16.02.09).

Building research capacity in the nursing workforce: the design and evaluation of the nurse researcher role

AUTHORS

Raymond Chan
RN, BN, MAppSc (Research)
Nurse Researcher, Cancer Care Services, Royal Brisbane and Women's Hospital, Qld, Australia.
Raymond_Chan@health.qld.gov.au

Glenn Gardner
RN, PhD
Professor of Clinical Nursing, School of Nursing and Midwifery, Queensland University of Technology, Kelvin Grove, Qld, Australia/ Director, Centre for Clinical Nursing, Royal Brisbane and Women's Hospital, Qld, Australia.

Joan Webster
RN, BA
Nursing Director, Research, Centre for Clinical Nursing, Royal Brisbane and Women's Hospital, Qld, Australia.

Alanna Geary
RN, BN, MHlthSc
Nursing Director, Cancer Care Services, Royal Brisbane and Women's Hospital, Qld, Australia.

KEY WORDS

Capacity building, cancer care, evidence based practice, nursing research, nurse researcher

ABSTRACT

Objectives
The Nurse Researcher Project (NRP) was initiated to support development of a nursing research and evidence based practice culture in Cancer Care Services (CCS) in a large tertiary hospital in Australia. The position was established and evaluated to inform future directions in the organisation.

Background
The demand for quality cancer care has been expanding over the past decades. Nurses are well placed to make an impact on improving health outcomes of people affected by cancer. At the same time, there is a robust body of literature documenting the barriers to undertaking and utilising research by and for nurses and nursing. A number of strategies have been implemented to address these barriers including a range of staff researcher positions but there is scant attention to evaluating the outcomes of these strategies. The role of nurse researcher has been documented in the literature with the aim to provide support to nurses in the clinical setting. There is, to date, little information in relation to the design, implementation and evaluation of this role.

Design
The Donabedian's model of program evaluation was used to implement and evaluate this initiative.

Methods
The 'NRP' outlined the steps needed to implement the nurse researcher role in a clinical setting. The steps involved the design of the role, planning for the support system for the role, and evaluation of outcomes of the role over two years.

Discussion
This paper proposes an innovative and feasible model to support clinical nursing research which would be relevant to a range of service areas.

Conclusion
Nurse researchers are able to play a crucial role in advancing nursing knowledge and facilitating evidence based practice, especially when placed to support a specialised team of nurses at a service level. This role can be implemented through appropriate planning of the position, building a support system and incorporating an evaluation plan.

INTRODUCTION

It is well recognised that the demand for cancer care is growing due to the increasing number of people affected by cancer and the effectiveness of cancer treatments. Data from the World Health Organization (2009) suggested that the number of new cancer cases is projected to increase from 11.3 million in 2007 to 15.5 million in 2030. This growing demand has presented a challenge for nursing services in relation to workload, workforce issues, and most importantly, the need to provide innovative and cost-effective nursing care. Cancer nurses play an important and unique role in responding to the needs of people affected by cancer throughout the continuum of care, from prevention to end of life care and bereavement support (Clinical Oncology Society 1996, Oncology Nursing Society 1996). It is important that cancer nurses are not only aware of the expectations imposed upon their specialty, but also support and contribute to improving and measuring nursing outcomes.

Cancer nursing is a dynamic entity (Yates 2001). Changes are inevitable and have presented a high demand for innovative nursing interventions in cancer nursing. Other than the growing population experiencing cancer, there are several factors contributing to the changes that occur in cancer nursing over time: (i) scientific and technological advancement in cancer care, (ii) the dynamic nature of cancer care and (iii) the evolving nursing profession (Miaskowski 1990).

The development of science and technology in health has significant impact on nursing care (Miaskowski 1990). One example is the addition of monoclonal antibodies to the radiation regime for head and neck cancer patients in recent years. This has presented challenges for nurses to generate new knowledge and strategies to manage the associated increased incidence of acneiform rash (Bonner et al 2006). The changing nature of service in cancer care with the move in emphasis from an inpatient to an ambulatory care setting (Ireland et al 2004) has also had a profound impact on nursing services. As a result, hospital nurses are treating sicker patients, and the community nurse generalists need to acquire further knowledge and evidence to care for cancer patients in the community during and after treatment. Finally, it is evident that nursing services are evolving. Advancements in nursing include extended scope of nursing practice (Duffield et al 2009), nurse-led clinics (Loftus 2001, Williamson et al 2007) and care coordination (National Institute for Clinical Excellence 2003, Yates 2004). A new generation of nurse leaders are required to provide evidence to justify change (Brown and Sorrell 2009). Hence, continual development and utilisation of research knowledge in nursing practice is necessary to respond to the ever changing contemporary environment (Chang and Daly 1996).

Background

There is a robust body of literature reporting the barriers to research utilisation amongst nurses (Retsas 2000, Yates et al 2002). These barriers include poor research skills, lack of understanding of critical appraisal and statistical analysis, lack of time to access research and lack of training in undertaking research (Yates et al 2002, Hutchinson and Johnston 2004). The primary role of clinical nurses is direct care. Consequently, time for activities associated with improving care, such as keeping up to date with the literature or implementing findings from research is extremely limited (Upton 1999, Retsas 2000). Further, nurses have identified a lack of support for evidence-based nursing from their organisations and their nursing leadership. There is now a call for hospitals to provide infrastructure support for clinical research (Brown and Sorrell 2009).

Nursing research has historically been seen as the responsibility of nurse academics (Richardson 2005). Clinical nurses have been traditionally employed in the position of research nurses, assistants, trial coordinators or data collectors to conduct research under the supervision of a medical practitioner (Richardson 2005). Over the past two decades, there have been a number of strategies employed to foster research and evidence based practice in

the clinical setting. These include the appointment of nursing directors with specific responsibility for research (Buffum 1996), researchers who are based in a university and hold research fellow status (Deave 2005, Gattuso et al 2007) and professorial chairs (Dunn and Yates 2000); the latter appointments are mostly designed to achieve effective partnerships between academia and the health care sector. These appointments address research at an organisational level, rather than a focus on a particular specialised service area. Therefore, strategies targeting a service level are warranted to foster research amongst nurses within specialised teams.

White and Taylor (2002) assert that the strategy of educational institutions to prepare clinical nurses for appraising and utilising research at both pre and post-registration levels of training has been ineffective. A more 'realistic approach' based on the development of research specialists within nursing is advocated, rather than expecting all nurses to be competent at finding, appraising and utilising research-based evidence (White and Taylor 2002). The development of a collaborative research effort between nurse researchers and nurse clinicians was recommended as a strategy for generating clinically meaningful nursing knowledge (Kotzer 2000). This academic clinical strategy for research needs to be considered as a mandate, rather than an option (Brown and Sorrell 2009).

With the emergence of the nurse researcher role in the clinical setting, a distinction is highlighted between a 'nurse researcher' and a 'research nurse' (Deave 2005). The role of a nurse researcher is to conduct and facilitate nursing-oriented research, rather than simply providing support for research conducted by others. Post graduate qualifications are typically required for nurse researchers, whereas knowledge or experience of research is not usually a requirement for research nurses' posts (Deave 2005). In responding to the barriers to evidence based nursing, the literature has suggested strategies to establish the culture of inquiry including orientation programs, evidence based programs, journal clubs and in-service education (Krugman 2003, Gattuso et al 2007, Milne et al 2007). The leadership and coordinating role of a nurse researcher, at the service level is well placed to carry out the activities outlined above. While the literature has documented the role of a nurse researcher in the clinical setting (Buffum 1996, Colbourne and Sque 2004, Deave 2005, Richardson 2005); there is a paucity of information with regard to the design, implementation and evaluation of the nurse researcher model at a service or departmental level.

METHODS

Setting

The Nurse Researcher Project (NRP) involved the design, implementation and evaluation of a nurse researcher model at Cancer Care Services of an Australian tertiary referral hospital. The nurse researcher was responsible for supporting a team of 210 full-time equivalent (FTE) nurses in Cancer Care Services, which include the departments of medical oncology, radiation oncology and haematology. This proposed model was innovative in that it was located in the midst of the clinical setting and functioned at the service level, rather than the organisational level.

Design

The implementation of the nurse researcher model aimed to increase research capacity in creating culture change and initiating actions and effects. It was envisaged by the research team that the implementation of this model would have a long causal chain on outcomes due to the complex nature of the nurse researcher role. As a result, a formalised evaluation was considered inappropriate. Therefore, Donabedian's (1988) model of program evaluation was used in this project. It was adopted to reflect its underlying premise in evaluating and describing the nurse researcher model. This well-established model has also been used for evaluating health care services / programs (Rossi and Freeman 1993, Sheen et al 2009). This approach focuses on classic 'structure', 'process' and 'outcome' in assessment of quality (Donabedian 1988). According to Parsley and Corrigan (1999), 'structure' refers to the resources in

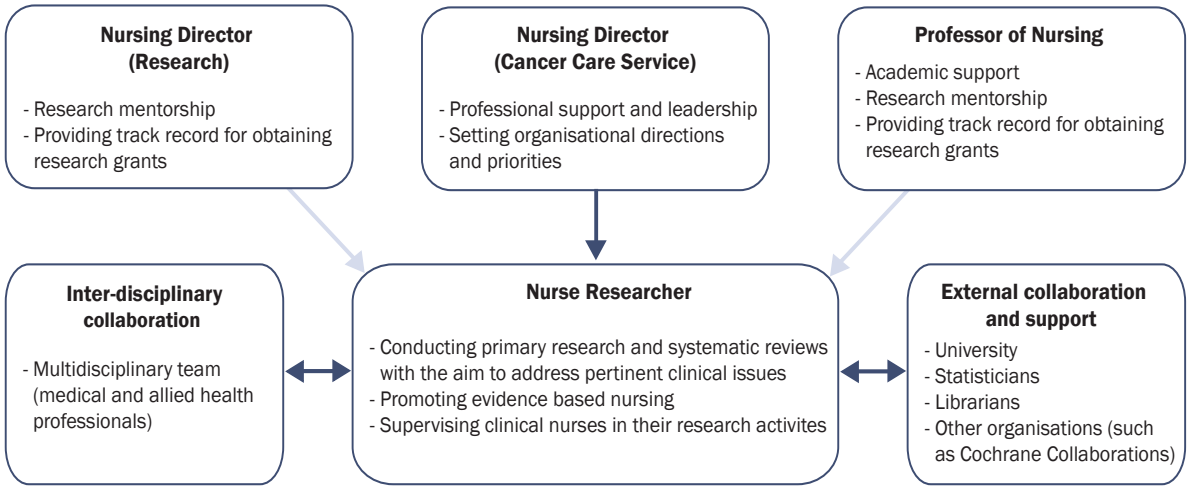
the system which are required to meet the standard; 'process' measures the actions required to meet the standard; and 'outcome' reflects the effect of the health care program (Parsley and Corrigan 1999).

Structure

The structure is the nurse researcher model with the following features and support system. In this project, the nurse researcher model was developed from the literature and designed to be responsive to service needs. This model included a dedicated position and a support system that involved collaboration with key stakeholders. In this case, this included collaboration with senior researchers in the organisation, such as the Professor of Nursing and the Nursing Director (research). It also involved close liaison with the Nursing Director of Cancer Care Services (CCS), the multidisciplinary team, administrators and universities. The CCS Nursing Director was the major sponsor for this position and, with her leadership team, generated the initial vision for the role and its potential in building nursing research. Importantly, the CCS Nursing Director provided the professional leadership necessary for sequestering ongoing funding for the nurse researcher position in a tight budgetary environment and ensuring the primacy of nursing research for this role in the multidisciplinary service context. Over the duration of the evaluation, the nurse researcher was appointed as an advanced practice nurse, with the salary and associated on-costs of approximately $96,776 - $113,453 per annum.

This nurse researcher professional structure was feasible and appropriate considering the context of the department. It provided the nurse researcher with access to organisational leadership and mentorship and support to target external research funding opportunities for research programs. The expectation of the nurse researcher was to be accountable at an advanced practice level for the development, coordination, implementation and evaluation of nursing research projects/programs to ensure clinical practice within Cancer Care Services was evidence based. Figure 1 provides an overview of the structure of the nurse researcher model.

Figure 1: Model of support system for the nurse researcher



Process

Prior to the commencement of the role, an extensive literature review was conducted to further translate the job description into activities which were considered relevant to the nurse researcher role. Data collection took place over the 24 month period, an activity log was used to record activities undertaken by the nurse researcher since commencement of service. Table 1 outlines a list of actions and strategies that were taken by the nurse researcher over the 24 month project period in order to achieve the expected outcomes. All these activities were considered the main role of the nurse researcher and therefore, were undertaken during the paid time.

Table 1: The role of nurse researchers in an acute care setting

Anticipated outcome of the nurse researcher position	Strategies used by the NRP
1. Participating in evidence generation • Leading research projects • Conducting primary research and systematic review • Encouraging other nurses to conduct research as investigators and to disseminate findings	1. Writing research protocols 2. Writing grant proposals 3. Applying for research grants 4. Applying for ethics approvals from the local Human Research Ethics Committee 5. Establishing links with research academics 6. Conducting evidence based practice programs 7. Supporting nurses to submit abstracts to conferences
2. Supporting research utilisation • Encouraging clinicians to question their practice • Participating in teams in policy making and implementation of research • Conducting translational research	1. Establishing working parties with policy makers, nurse educators and managers 2. Attending regular senior nursing staff meeting/ clinical case conferences 3. Providing consultations to nurses who have clinical questions on their practice 4. Providing information and pathways of research higher degree
	Collaborations Nurses in the specified clinical area, Nurse academics, Cochrane collaboration, Joanna Briggs Institute, granting bodies, librarians, nursing directors, nursing specialist, multidisciplinary team, policy makers

Outcomes

The anticipated outcomes included (i) building capacity for a nursing research environment within the Cancer Care Services, (ii) disseminating research findings and research activities within and beyond the local level at Cancer Care Services, (iii) providing support for nurses to conduct primary research and systematic reviews and (iv) educating nurses to provide evidence-based care. As a result, an evaluation was conducted 24 months post implementation of the role. Over the 24 month implementation period, the engagement of clinical nurses in research was evident (see table 2).

i. Conducting primary and secondary research

Over the 24 months, 13 research proposals were submitted to research funding bodies. Of these 13 submissions, four were funded with a total amount of $132,500 AUD. Fourteen cancer nurses from the Cancer Care Services were involved in these funded research studies as investigators. As a result of the research activities, seven manuscripts were submitted and accepted for peer-reviewed publications. These outcomes demonstrate the involvement of clinical nurses and the potential impact of research activities undertaken in the CCS as a result of the appointment of the nurse researcher.

ii. Conference presentations

Over the implementation period, 13 abstracts were submitted to national and international cancer care conferences. Of these abstracts, six abstracts were written by the nurse researcher and ten were written by clinical nurses with assistance from the nurse researcher. All abstracts were accepted and presented in the form of either a poster or oral presentation. The presenters had to either self-fund their travel and conference registration, or apply for travel scholarships through internal or external opportunities. The nurse researcher did not receive more financial support for travel and conference costs than other nursing staff from the department. However, the nurse researcher could apply for conference leave (paid time) to present at conferences, because disseminating outcomes of research studies was one of the key roles of the nurse researcher.

Table 2: Deliverables of the nurse researcher over the first 24 months of appointment

Outcomes for first 24 months of appointment of the nurse researcher	
Domain 1: Conducting primary and secondary research	
Number of proposals submitted to funding bodies	13
Number of clinical nurses who are involved in research studies as investigators	14
Number of funded studies	4
Total amount of funds granted for research studies (funded by external funding bodies)	$132,500 AUD
Total amount of funds granted for disseminating research outcomes in conferences (funded internally by the organisation)	$7,000 AUD
Total amount of funds granted for participating in conferences (funded by external bodies)	$2,500 AUD
Number of completed systematic reviews	4
Number of ongoing systematic reviews	2
Number of abstracts submitted and accepted	13
Number of peer-reviewed publications submitted and accepted	7
Domain 2: Promoting evidence based practice	
Number of consultations with nurses	
• for their abstract submissions	16
• for evidence searching and appraisal directly related to their practice	20
Number of in-service education sessions provided	9
Number of nurses completed a 12 week evidence based practice workshop	3
Number of nurses who attended the education	126

iii. Evidence based practice promotion

A 12 week evidence based practice workshop was commenced 12 months after the appointment of the nurse researcher. A total of three clinical nurses have completed the workshop. In this workshop, they each conducted a systematic review, using the Cochrane Collaboration methodology, on a topic relevant to their clinical practice. All of them have presented the outcomes locally to the nursing staff in their department, as well as at cancer care conferences. Additionally, a total of 126 nurses, from various departments of Cancer Care Services, have attended at least one of the 30 minute in-service education sessions on developing relevant clinical questions and database searching.

DISCUSSION

The NRP has been successful in integrating the role of a nurse researcher at a service level of a large tertiary hospital. Within the first year of appointment, primary research and systematic review activities have been initiated. While it was identified in the literature that one of the barriers to evidence utilisation could be lack of support from the organisation or nursing administrators (Parahoo 2000); in this study context, this has not been the case. The nursing leadership has played an important role in creating a supportive environment for evidence generation and utilisation by creating the nurse researcher position and designing a support system for the position. The project has demonstrated the success and usefulness of the nurse researcher model in supporting nurses at a specialist service level. This paper demonstrates progress to date in building research capacity, but does not completely identify the full potential of such a role in the future. The evaluation shows that this model is feasible and may be effective in supporting clinical nursing research in a range of service areas.

With today's emphasis on multidisciplinary care and its benefits in improving patient outcomes (Wright et al 2007), it is necessary for multidisciplinary research to be undertaken. By building research capacity in the nursing workforce, the position of nurse researcher may enhance the involvement of nurses in the specialist service to collaborate with

clinicians from other disciplines in designing research programs, which can truly reflect the 'complex, multidimensional nature' of cancer care and its associated problems experienced by patients and their families (O'Connor 2009).

CONCLUSION

While evidence-based nursing has become an expected standard and an integral component of improving patient care, barriers and resistance to research remain. This project has demonstrated the successful implementation of the nurse researcher role. This required the commitment of the nursing director in sponsoring the position and experienced senior researchers in supporting the nurse researcher role. The authors recommend that genuine recognition, moving beyond rhetoric, by nursing leaders in the clinical settings is urgently required. The literature is clear that a supportive infrastructure and environment for evidence generation and utilisation is necessary to inform safe, effective and quality nursing care.

REFERENCES

Bonner ,J., Harari, P., Giralt, J., Azarnia, N., Shin, D., Cohen, R., Jones, C., Sur, R., Raben, D., Jassem, J., Ove, R., Kies, M., Baselga, J., Youssoufian, H., Amellal, N., Rowinsky, E. and Ang, K. 2006. Radiotherapy plus cetuximab for squamous-cell carcinoma of the head and neck. New England Journal of Medicine, 354(6):567-578.

Brown, G.V. and Sorrell, T.C. 2009. Building quality in health - the need for clinical researchers. The Medical Journal of Australia, 190(11):627-629.

Buffum, M. 1996. Staff action: the Nurse Researcher in the clinical setting. Journal of Neuroscience Nursing, 28(6):399-406.

Chang, E. and Daly, J. 1996. Clinical research priorities in oncology nursing: An Australian perspective. International Journal of Nursing Practice, 2(1):21-28.

Clinical Oncology Society. 1996. Outcome standards for Australian cancer Nursing Practice 2nd edn. COSA, Sydney.

Colbourne, L. and Sque, M. 2004. Split personalities: Role conflict between the nurse and the Nurse Researcher. Nursing Times Research, 9(4):297-304.

Deave, T. 2005. Research nurse or Nurse Researcher: How much value is placed on research undertaken by nurses? Journal of Research in Nursing, 10(6):649-657.

Donabedian, A. 1988. The quality of care. How can it be assessed? Journal of the American Medical Association, 260(12):1743-1748.

Duffield, C., Gardner, G., Chang, A. and Chatling-Paull, C. 2009. Advanced nursing practice: A global perspective. Collegian, 16(2):55-62.

Dunn, S.V. and Yates, P. 2000. The roles of Australian chairs in clinical nursing. Journal of Advanced Nursing, 31(1):165-171.

Gattuso, J.S., Hinds, P.S., Beaumont, C., Funk, A.J., Green, J., Max, A., Russell, P. and Windsor, K. 2007. Transforming a hospital nursing research fellowship into an evidence-based practice fellowship. The Journal of Nursing Administration, 37(12):539-545.

Hutchinson, A.M. and Johnston, L. 2004. Bridging the divide: a survey of nurses' opinions regarding barriers to, and facilitators of, research utilization in the practice setting. Journal of Clinical Nursing, 13(3):304-315.

Ireland, A., DePalma, J., Arneson, L., Stark, L. and Williamson, J. 2004. The oncology nursing society ambulatory office nurse survey. Oncology Nursing Forum, 31(6):E147-E156.

Kotzer, A. 2000. Linking practice with research: the role of the unit research coordinator. Journal for Specialists in Paediatric Nursing, 5(3):143-145.

Krugman, M. 2003. Evidence-based practice: the role of staff development. Journal for Nurses in Staff Development, 19(6):279-285.

Loftus, L. 2001. The development of nurse-led clinics in cancer care. Journal of Clinical Nursing, 10(2):215-220.

Miaskowski, C. 1990. The future of oncology nursing. A historical perspective. Nursing Clinics of North America, 25(2):461-473.

Milne, D.J., Krishnasamy, M., Johnston, L. and Aranda, S. 2007. Promoting evidence-based care through a clinical research fellowship programme. Journal of Clinical Nursing, 16(9):1629-1639.

National Institute for Clinical Excellence. 2003. Guidance on Cancer Services. Improving Supportive Care for Adults with Cancer. Research Evidence. NHS, UK.

O'Connor, S. 2009. It is time to stop paying lip service to the ideal of multiprofessional collaboration in cancer research and start delivering on the agenda. European Journal of Cancer, 18(5):219-221.

Oncology Nursing Society. 1996. Statement on the scope and the standards of oncology nursing practice. American Nurses Publishing, Washington, DC.

Parahoo, K. 2000. Barriers to, and facilitators of, research utilization among nurses in Northern Ireland. Journal of Advanced Nursing, 31:89-98.

Parsley, K. and Corrigan, P. 1999. Quality improvement in health care- Putting evidence into practice, 2 edn. Nelson Thrones.

Retsas, A. 2000. Barriers to using research evidence in nursing practice. Journal of Advanced Nursing, 31(1):599-606.

Richardson, S. 2005. Incorporation of research in clinical practice: the development of a clinical Nurse Researcher position. Nursing Praxis in New Zealand, 21(1):33-42.

Rossi, P. and Freeman, H. 1993. Evaluation: A Systematic Approach, 5th edn. Sage, Newbury Park.

Sheen, N.J., Fone, D., Phillips, C.J., Sparrow, J.M., Pointer, J.S. and Wild, J.M. 2009. Novel optometrist-led all Wales primary eye-care services: evaluation of a prospective case series. The British Journal of Ophthalmology, 93(4):435-438.

Upton, D. 1999. Attitudes towards, and knowledge of, clinical effectiveness in nurses, midwives, practice nurses and health visitors. Journal of Advanced Nursing, 29(4):855-893.

White, R. and Taylor, S. 2002. Nursing practice should be informed by the best available evidence, but should all first-level nurses be competent at research appraisal and utilisation? Nurse Education today, 22(3):220-224.

Williamson, G., Collinson, S. and Withers, N. 2007. Patient satisfaction audit of a nurse-led lung cancer follow-up clinic. Cancer Nursing Practice, 8(6):31-35.

World Health Organization. 2009. Are the number of cancer cases increasing or decreasing in the world? WHO.

Wright, F., Devito, C. and Hunter, A. 2007. Multidisciplinary cancer conference: A systematic review and development of practice standards. European Journal of Cancer, 43(6):1002-1010.

Yates, P. 2001. Recent developments in Cancer Nursing: Overview. Cancer Forum, 24(1):3-6.

Yates, P. 2004. Cancer care coordinators: realising the potential for improving the patient journey. Cancer Forum, 28(3):128-132.

Yates, P., Baker, D., Barrett, L., Christie, L., Dewar, A., Middleton, R., Moore, D., Stallan, G. and Bennetto, G. 2002. Cancer Nursing Research in Queensland, Australia: Barriers, Priorities, and Strategies for Progress. Cancer Nursing, 25(3):167-180.