Imperatives and Strategies for Developing an Evidence-Based Practice in Perioperative Nursing

Introduction

The scope of nursing practice in acute care is continually changing. Practices and protocols that provided guidance yesterday are today modified or abandoned. In addition, everything in acute health service comes under the economic microscope. Along with the need to rationalise the health dollar also comes the obligation to continue to provide health care that delivers optimal health outcomes[1]. It is these twin aims that form the basis of evidence-based practice; that is, to provide systematically developed guidelines for economically efficient and clinically effective practice in order to achieve desired patient outcomes. By knowing which interventions and practices are efficient and effective, wiser clinical decisions can be made about the distribution of limited health care resources[2]. As such, evidence-based practice has become an imperative for health professionals and health service researchers.

Evidence-based practice is an approach to health care that has direct relevance for nursing service. Nurses make up the largest professional work force, deliver the majority of direct patient care, have direct impact on patient outcomes, play a central role in the purchase of resources, and are increasing their influence on quality improvement and outcome management, more so than any other health professional[3]. Nurses recognise the importance of evidence-based practice to improve decisions about the use of limited health care resources to maximise quality care while limiting costs[4]. Additionally, evidence-based practice with its emphasis

on demonstrated effectiveness can prove to be a valuable tool for nurses who are seeking to implement innovations in practice and patient care strategies.

Perioperative nurses are well placed to positively influence patient outcomes however, in order to progress the specialty, perioperative nurses must be able to engage the evidence-based practice agenda. In 1999, a targeted search of the perioperative nursing literature was conducted and found that only two of the 10,063 located references were identified as systematic reviews[5]. A targeted search in 2002 using the same search terms as Stevens and Pugh and adding 'theatre nursing,' 'surgical patients,' ambulatory care nursing,' 'pre admission clinic,' and 'pre operative education,' located 17,693 articles, of which 20 were identified as systematic reviews. Whilst this indicates a small growth in evidence based perioperative nursing (.09%) it also provides a salient reminder that perioperative nurses are not engaging in developing and publishing the evidential basis considered necessary for contemporary perioperative practice.

In this paper we seek to promote the development of evidence based perioperative nursing. The paper will provide a background focus through an analysis and critique of the process and methodology of evidence-based practice. We will then argue the relevance of evidence-based practice to perioperative nursing and the contribution this movement can make to the development and enhancement of patient centred perioperative care.

The meaning of evidence-based practice

The rising cost of health care produces imperatives for selection of the most clinically efficacious and cost effective health care practice. Clinical decisions need to be subjected to a critical scrutiny of the costs and benefits of interventions. Evidence-based practice provides information on efficacy. It emphasises the need for clinicians to measure success not only in terms of the achievement of outcomes of care, as experienced by the patient but also in the achievement of these outcomes within the most judicious use of resources available.

Evidence-based practice effectively closes the theory-practice gap by applying research findings to individual patient populations. It is patient centred and outcome-focused and emphasises individual professional accountability. Clinical decisions are made explicit and this provides the conditions for personal and professional reflection, which serves as the basis for audit of clinical performance[6].

There are a range of convergent and divergent views on the application of evidence-based practice in nursing[7] and as many definitions. The most cited definition is that supplied by Sackett[8]:

> "The conscientious, explicit and judicious use of current best evidence in making the decisions about the care of individual patients. The practice of evidence-based medicine means integrating individual clinical expertise with the best available external clinical evidence from systematic research."
>
> (Sackett et al 1996, p.71)

Other definitions, for example that by Fleming et al[9], may have more meaning and relevance for nurses:

> Evidence-based health care involves using a combination of clinical expertise and the best available research evidence, together with patient preferences, to inform decision-making.
>
> (Flemming, Thompson and Cullum 1997, p. 28)

Taking into account the range of definitions that seek to capture the essence of evidence-based practice, there are certain features that provide a basis to understanding how evidence-based practice works, why it works, and why it is important for the planning of health service. The first of these features is that evidence-based practice is technologically driven. Evidence-based practice utilises electronic sources of information through a purposeful and efficient combination of the internet, databases and library links that provide information on published research. Electronic access to, and retrieval of, research and other information relating to clinical practice is therefore immediately available to the clinician. However in order for this accessibility to benefit clinical practice health professionals must be research educated. This approach to health care emphasises the need for clinicians to not only read research but to critically evaluate it. There is ample evidence in the literature that a major barrier to nurses utilising research to inform practice is the lack of understanding of the research reports[10, 11, 12].

Another feature of evidence-based practice is that success of an intervention is measured in terms of the achievement of outcomes of care, as experienced by the patient, rather than the clinician[13, 14]. This is a significant change in the culture of health care. Related to this is the feature that evidence-based practice emphasises

individual professional accountability. With the adoption of evidence-based practice, clinical decisions are made explicit. This provides the conditions for personal reflection and the basis for audit of clinical performance[15].

What constitutes evidence is carefully described in the evidence-based practice literature and critiqued in the broader health literature. The criteria that define evidence are limited to a set of specific knowledge producing methodologies. The evidence hierarchy is well publicised[16, 17] and well recognised. All studies therefore are categorised according to the strength of the evidence based upon this classification system.

Essentially the 'best' evidence is that which is obtained from a systematic review of all relevant randomised controlled trials (RCTs) on a clinical intervention. The systematic review is different from a literature review in that there is a series of principles and standards of rigour that must be observed in the selection, and the synthesis, of past research that are included in the review. There are a number of organizations that publish systematic reviews and it is worth becoming familiar with these organizations through their web sites[18]. The lowest category of evidence, but recognised as 'evidence' none-the-less is the consensus opinion of respected clinical experts. Other methods of epidemiological research categorise the levels in between these two.

The evidence-based practice movement has effected changes in the delivery and management of health care that have not previously been realised. Achievements such as research utilisation, a meaningful, cross-disciplinary language, and

economically responsible health service are laudable gains for such a disparate industry as health care. However, evidence-based practice remains a contested concept in that it seems to be problematic in some aspects of clinical practice and argued to be philosophically deficient in some areas of academic discourse. The movement as a phenomenon is therefore the subject of ongoing intellectual scrutiny and critical review at both the individual level by clinicians who are exhorted to participate in the processes and at the macro level of published debate.

Critiquing the evidence-based practice movement

Now that we have an understanding of what evidence-based practice is, and where it fits in healthcare, we can analyse and critique some of the praise and criticisms of the movement.

Evidence-based practice has many and varied critics. There is reflected in this literature unease about the universal appeal of evidence-based practice and the imperatives that drive the movement particularly within nursing. For example attention has focused on the inordinate influence that epidemiologists, as champions of evidence based medicine through their inquiry methods, have over clinical decisions. Charlton and Miles[19] suggested that the proponents of evidence based medicine advanced their cause by bypassing clinicians and appealing directly to politicians and 'number-crunchers' (p.372). Mitchell[20] suggested that evidence-based practice entraps nurses in the role of medical extenders. She raised concerns about nurses being cast into the role of evidence-informed experts '…who can *manage* people to achieve provider-defined goals' (p.31).

In addition there are other factors related to the meaning of knowledge that influence the utilisation of evidence in nursing practice. Arguments in this area point to the fact that the findings from many studies on effectiveness may themselves be limited by their own methodology; a methodology that is perhaps seeking answers to questions that have not been asked, or have been asked from an insufficient and incomplete examination of the concepts central to the evidence-based practice phenomenon. Alison Kitson[21] for example suggested that the problem with RCTs is that they do not explain *why* beneficial outcomes are achieved - they merely focus on the fact that they happen.

At the base of these challenges is the claim that evidence-based practice as reported and described in the literature to date rests upon an unproblematised notion of *evidence*. There is an assumption, based upon the received view that evidence has always and will always equate with, and be defined by, the gold standard of randomised controlled trials. However, this view of evidence conforms to a natural science model of inquiry, which holds that the world is governed by universal laws that are accessed through objectivity and neutrality[22].

Research into health service that is drawn from historical, interpretive or economic methods has no formal standing in this view of evidence. This is because a single standard is used for worthiness of research design and scientific merit – a standard that applies to only one view of knowledge – that which is arrived at through experimental research. Many authors argue that this approach as a universal benchmark is flawed[23, 24, 25, 26]. They claim that the problem is related to the definition of the nature of evidence. Research involving humans is infinitely

complex, open to interpretation and value laden. Claims are made that, in relation to the notion of evidence, proponents of evidence-based practice oversimplify and misrepresent the complexities of human relating and the realities of multiple competing values in the process of nursing care.

The most convincing arguments in this debate focus the rationale on the consumers of health care. Government bodies are increasingly targeting the consumer as the focus of health care policy. In this view of responsible and responsive health service the emphasis is not about what we do – but rather it is about the patient/client's experience of their illness and its management. In the end therefore, it is the patient, the client, and the consumer of our service who will judge our evidence. This judgement of evidence is invariably formed from a broad information base. Consumers of health care who are confronted with treatment decisions increasingly seek out the kinds of information they need to make meaningful decisions. It is this factor that needs to inform our notion of evidence.

This debate and critique of the traditional understanding of evidence-based practice and challenges to the standard definition of evidence has resulted in a deeper understanding of evidence as a basis for clinical practice in nursing and medicine. There is now a concerted move towards defining evidence in broader terms and incorporating the findings from qualitative studies into an evidential framework for practice.

Evidence-based practice and perioperative nursing

Now that we know what evidence-based practice is and have an appreciation for various schools of thought on the topic, we will consider the relevance of evidence based practice to perioperative nursing, including barriers to use of evidence and solutions for overcoming these barriers.

Perioperative nursing is one of the oldest, most established of nursing specialities. Considering that the process of evidence-based practice is accessible, supported and systematic, one would assume that peri operative nursing, along with other clinical specialities has embraced evidence-based practice – or at least intelligently rejected the tradition in favour of an alternative approach to producing and using research in practice. However a review of the literature indicates that perioperative nursing has been slow to respond to the imperatives of evidence-based practice. A scan of three perioperative journals that could reasonably be assumed to inform practice for Australian perioperative nurses, ACORN Journal (Australia), AORN Journal (USA), and British Journal of Perioperative Nursing (UK) indicates that the journals are dominated by descriptive non research reports on practice issues.

In the clinical innovations section of the June 2002 issue of the AORN journal, Barbara Bailes commented that perioperative nurses are not basing clinical practice on criteria of evidence[27]. She warns that perioperative nurses risk being left behind as other nursing specialties move ahead with evidence-based practice. In Australia, Riley and Peters argued that perioperative nursing roles are under developed and that the perioperative model of practice that is espoused by most nurses is not being practiced[28].

We argue that there are two basic influences that have slowed the uptake of evidence as a practice base in perioperative nursing. These are political influences and professional influences

Political influences on using evidence in perioperative nursing

The political influences relate to nursing's relationship with medicine. There is probably no other arena of health care practice where nurses and doctors are so interdependent, so reliant upon each other, to do their respective jobs of health care. And yet the culture remains that the work of surgeons and anaesthetists is clearly defined, encapsulated, dominant and central to the function of the perioperative process. Perioperative nurses continue to be viewed as supporting this central role of the surgeon and the anaesthetist[29]. At times, probably more so than in other areas of nursing, the role of the perioperative nurse is rendered invisible and ancillary to the business of surgery and perioperative care.

This cultural expectation that determines professional roles act to set up discipline boundaries and domains that result in medical ownership of knowledge, ownership of patients and determiners of practice. Moreover, there is some indication that this culture can determine the practice and outcome of nursing research in the perioperative environment[30]. The dominance of medicine in the field of perioperative research may well be a symptom of a lack of respect for nurse led studies on practices relating to the peri-surgical event and an indication of the extent to which nursing research is vulnerable to the good will of medicine.

In contrast to the lack of universal support by medicine of nurse led research in perioperative care, nurses are constantly co-opted to support, collect data for, co-ordinate and generally promote medically-led clinical trials in the perioperative environment. In our experience nurses are invariably cooperative with the research protocols of these trials and non-compliance is rare.

Professional influences on using evidence in perioperative nursing

The nursing literature indicates that perioperative nurse researchers remain interested in the ontological questions of who and what they are. There is a body of perioperative nursing research – but much of it is concerned with what we see as searching for identity. Much of the published research relates to topics such as:

- definition of the role of perioperative nursing[31];
- scope of practice[32 33];
- social relationships in the perioperative environment[34] ;
- moral foundations of perioperative nursing values[35, 36, 37, 38]; and
- clinical decision making in perioperative nursing[39, 40].

This type of research agenda is important for the development of the field of perioperative nursing, but it cannot stand alone in supporting clinical practice. This ontological research needs to be accompanied by a clinical research agenda. Perioperative nursing needs to build a body of knowledge from both ontological (ie what are we) and epistemological (ie what is knowledge) questions.

Another professional influence is that perioperative nurses often consider that they are involved in research because they are involved as data collectors for medical trials (as mentioned previously). This, we suggest is an exploitation of the "team" imperative that is promoted in the operating room environment and raises questions about what perioperative nurses consider to be their clinical practice base. In considering the definition of nursing research and distinguishing nursing from medical research, the maxim we recommend is: if it is done by nurses and/or used by nursing, then it is amenable to nursing research.

Solutions to increase use of evidence in perioperative nursing

There are interesting and exciting opportunities in the field of perioperative nursing. Developments such as advanced nursing practice and the nurse practitioner movement will enable nurses who specialise in perioperative care to carve strong clinical career paths and contribute to creative solutions to the current crisis in health care. Additionally, there is a range of sub-specialties within perioperative nursing that present real opportunities for professional development and job satisfaction. Nonetheless the previously discussed political and professional influences result in real obstacles to the development of a scientific basis for this specialist field of nursing. We propose that a strategic response to these influences needs to occur at three levels, namely:

- the individual perioperative nurse;
- the local clinical perioperative environment; and
- the national professional level.

The individual perioperative nurse

For nurses to initiate, lead or participate in nursing research, on top of a full clinical load, is difficult – if not impossible. However most hospitals have either, a nursing research department, a clinical nursing professor and/or an association with a university school of nursing through placement of undergraduate nursing students. These resources, facilities and organisations are responsible for promoting, supporting, conducting and collaborating in clinical nursing research. Perioperative nurses need to scrutinise their practice and generate research topics that will result in a scientific basis to perioperative care.

Furthermore perioperative nurses need to engage in postgraduate study and research training. When perioperative nurses do conduct and complete a research project, they must publish it in their professional journal. Research findings must be disseminated. By supporting the perioperative professional journals, perioperative nurses will inform other perioperative nurses of new evidence and will also contribute to raising the quality of the journals. Consistent with this strategy is the need to also present research findings at conferences both nationally and internationally.

Local clinical perioperative environment

Perioperative nurses need to expand the focus of their practice**.** Riley and Peters' research findings suggest that despite the rhetoric of a perioperative model for nursing practice in this field, perioperative nurses are primarily focused on the intraoperative phase of the surgical experience[41]. In this reported study only approximately 35% of respondents were interested in extending their work activities

into the pre and/or postoperative areas of practice. This is despite the fact that the majority of nurses in their study believed in the concept of perioperative practice[42].

Perioperative nurses can use research to expand their influence into all phases and geographical locations of practice. Hence, perioperative nurses need to view the *entire* continuum of surgical care, from the surgical patient's first encounter with the health system pre admission to the last follow up visit post discharge, as the sphere of influence of perioperative nursing. Thus the domain of perioperative nursing research can include such broad areas as the wait for surgery, management of chronic conditions of surgical patients, social issues of the surgical patient, pre admission anxiety and coping, prevention of intraoperative injury, morbidity and mortality for specific surgical procedures, and prevention of post surgical complications.

A further area in which perioperative nurses can overcome the influences that slow their involvement in research is to challenge the dominant paradigm of perioperative work. There is increasing emphasis in health service on consumer involvement as a modernising force in our healthcare systems. The health care consumer now has membership on committees and boards concerned with areas of policy development and decision making relating to the organisation of health service. This has resulted in a shift away from the ***doing*** of health care and the ***practice*** of health professionals towards the patients' experience of health care and patient-valued outcomes of health service. There is a vast amount of sociology of health literature to support this trend. This type of thinking enables us to liberate the notion of surgery and reconceptualise the operative event as the patient's experience rather than the

surgeon's performance. The individual roles of health professionals engaged in this surgical experience therefore are interdependent. The nurse, the surgeon, the anaesthetist are members of a team that is working to achieve patient focused outcomes. The nurse therefore has enhanced overt influence and full involvement in working to achieve these outcomes. This then is also a focus of nursing research. Investigation into issues such as pre-operative health status, selection of preps, dressings, drains, pain management and the impact of these decisions on post-operative recovery and quality of life are all within the practice influence of nursing and therefore the scope of nursing research and evidence-based practice.

Evidence-based practice is a great leveller. The role of authority and opinion is no longer a sufficient basis for decisions about health care. Rather, rules of evidence take precedence and skills related to literature retrieval and information synthesis are essential for clinical decision making. A nurse led systematic review of, for example, surgical wound dressings will have more authority for product selection that the erstwhile surgeon's preference.

The national professional level

And finally, perioperative nurses need to support the professional body through membership and active participation in committee and other work. Perioperative nurses should fully utilise the power, influence and resources of membership of a professional organization. The resources can result in benefits such as research funding, educational grants and sponsoring of systematic reviews. The power and influence can be in the form of a unified voice that is effective in lobbying local and commonwealth departments, education providers and consumer groups.

Conclusion

Perioperative nurses are well placed to positively influence patient outcomes through engagement of the evidence-based practice agenda. Evidence-based practice in perioperative nursing is a matter of noting what nurses do; if it is done, managed or organised by nurses it is open to the scrutiny of nurse led research and nursing decisions and policy development based on the best available evidence. The development and survival of perioperative nursing as a discipline is dependent upon the contributions it makes to health care policy and outcomes. These contributions will be realised through the vigour with which perioperative nurses embrace the evidence-based practice process and pursue a research agenda that expands the body of knowledge upon which perioperative nursing practice is based.

References

1. Ray L. (1999) "Evidence and outcomes: agendas, presuppositions and power" Journal of Advanced Nursing, Vol. 30, No 5: p 1017-1026.

2. Jennings B.M. and Loan L.A. (2001) "Misconceptions among nurses about evidence-based practice" Journal of Nursing Scholarship Vol. 33 No 2, p 121-127.

3. Pearson A. (2002) "Nursing takes the lead: redefining what counts as evidence in Australian health care" Reflections on Nursing Leadership Vol. 28, No 4, p 18-21.

4. Jennings B.M. and Loan L.A. (2001) "Misconceptions among nurses about evidence-based practice" Journal of Nursing Scholarship Vol. 33, No.2, p 121-127.

5. Stevens K.R. and Pugh J.A.(1999) "Evidence-based practice and perioperative nursing" Seminars in Perioperative Nursing Vol. 8, No 3, p 155-159.

6. Bradshaw P.L. (2000) "Evidence-based practice in nursing-the current state of play in Britain" Journal of Nursing Management Vol. 8, No 6, p 313-316.

7. Jennings B.M. and Loan L.A.(2001) "Misconceptions among nurses about evidence-based practice" Journal of Nursing Scholarship Vol. 33, No 2, p 121-127.

8. Sackett D.L., Rosenberg W.M., Gray J.A.M., Haynes R.B., and Richardson W.S. (1996) "Evidence-based medicine: what it is and what it is not" British Medical Journal Vol. 312, No 7023, p 71-72.

9. Flemming K., Thompson C., and Cullum N. (1997) "Doing the right thing" Nursing Standard Vol. 12, No 7, p 28-31.

10. Funk S.G., Champagne M.T., Wiese R.A., and Tornquist E.M. (1991) "Barriers to using research finding in practice: the clinician's perspective" Applied Nursing Research Vol. 4, No 2, p 90-95.

11. Nagy S., Lumby J., McKinley S., and Macfarlane C. (2001) "Nurses' beliefs about the conditions that hinder or support evidence-based nursing" International Journal of Nursing Practice Vol. 7, No 5, p 314-321.

12. McCaughan D., Thompson C., Cullum N., Sheldon T.A., and Thompson D.R. (2002) "Acute care nurses' perceptions of barriers to using research information in clinical decision-making" Journal of Advanced Nursing Vol. 39, No 1, p 46-60.

13. Ray L. (1999) "Evidence and outcomes: agendas, presuppositions and power" Journal of Advanced Nursing Vol. 30, No 5, p 1017-1026.

14. Kitson A. (2002) "Recognising relationships: reflections on evidence-based practice" Nursing Inquiry Vol. 9, No 3, p 179-186.

15. Bradshaw P.L. (2000) "Evidence-based practice in nursing-the current state of play in Britain" Journal of Nursing Management Vol. 8, No 6, p 313-316.

16. National Health and Medical Research Council (NHMRC). A guide to the development, implementation and evaluation of clinical practice guidelines. Canberra: Commonwealth of Australia, 1999, p 56.

17. NHS Centre for Reviews and Dissemination. Undertaking systematic reviews of research on effectiveness: CRD's guidelines for those carrying out or commissioning reviews, CRD Report No. 4, Stage 2, Phase 5. York: York Publishing Services Ltd., 2001, p 5.

18. Shelling J. (2003) "Searching the literature: making a start" Collegian, Vol. 10, No 2, p 40-41.

19. Charlton B.G. and Miles A. (1998) "The rise and fall of EBP" Quarterly Journal of Medicine, Vol. 91, No 5, p 371-374.

20. Mitchell G.J. (1999) "Evidence-based practice: critique and alternative view" Nursing Science Quarterly Vol. 12, No 1, p 30-5.

21. Kitson A. (2002) "Recognising relationships: reflections on evidence-based practice" Nursing Inquiry Vol. 9, No 3, p 179-186.

22. Thompson N. Theory and Practice in Health and Social Welfare. Buckingham, UK: Open University Press, 1995.

23. French P. (1999) "The development of evidence-based nursing" Journal of Advanced Nursing Vol. 29, No 1, p 72-78.

24. Mitchell G.J. (1999) "Evidence-based practice: critique and alternative view" Nursing Science Quarterly Vol. 12, No 1, p 30-5.

25. Fawcett J., Watson J., Neuman B., Walker P.H., and Fitzpatrick J.J. (2000) "On nursing theories and evidence" Journal of Nursing Scholarship Vol. 33, No 2, p 115-119.

26. Miles A. and Charlton B. (2000) "New perspectives in the evidence-based healthcare debate" Journal of Evaluation in Clinical Practice Vol.6, No 2, p 77-84.

27. Bailes B.K. (2002) "Evidence-based practice guidelines-one way to enhance clinical practice" AORN Journal Vol. 75, No 6, p 1166-1167.

28. Riley R. and Peters G. (2000) "The current scope and future direction of perioperative nursing practice in Victoria, Australia" Journal of Advanced Nursing Vol 32, No 3, p 544-553.

29. McGarvey H.E., Chambers M.G.A., and Boore J.R.P. (2000) "Development and definition of the role of the operating department nurse" Journal of Advanced Nursing Vol 32, No 5, p 1092-1100.

30. Gardner G., Gardner A., MacLellan L., and Osborne S. (in press) "Reconceptualising the objectives of a pilot study for clinical research" International Journal of Nursing Studies.

31. McGarvey H.E., Chambers M.G.A., Boore J.R.P. (2000) "Development and definition of the role of the operating department nurse" Journal of Advanced Nursing Vol. 32, No 5, p 1092-1100.

32. Riley R. and Peters G. (2000) "The current scope and future direction of perioperative nursing practice in Victoria, Australia" Journal of Advanced Nursing Vol. 32, No 3, p 544-553.

33. Riley R. and Manias E. (2002) "Foucault could have been an operating room nurse" Journal of Advanced Nursing Vol. 39, No 4, p 316-324.

34. Tanner J. and Timmons S. (2000) "Backstage in theatre" Journal of Advanced Nursing Vol. 32, No 4, p 975-980.

35. Post I. (1998) "Perioperative nurses' encounter with value conflicts" Scandinavian Journal of Caring Science Vol. 12, p 81-88.

36. Corley M.C., Elswick R.K., Gorman M., and Clor T. (2001) "Development and evaluation of a moral distress scale" Journal of Advanced Nursing Vol. 33, No 2, p 250-256.

37. Killen A.R. (2002) "Morality in perioperative nurses" AORN Journal Vol. 75, No 3, p 532-549.

38. Michael R. and Jenkins H.J. (2001) "Work-related trauma: the experiences of perioperative nurses" Collegian Vol. 8, No 1, p 19-25.

39. Schroeter K. (1999) "Ethical perception and resulting action in perioperative nurses" AORN Journal Vol 69, No 5, p 991-1002.

40. Parker C.B., Minick P. and Kee C.C. (1999) "Clinical decision-making processes in perioperative nursing" AORN Journal Vol. 70, No 1, p 45-62.

41. Riley R. and Peters G. (2000) "The current scope and future direction of perioperative nursing practice in Victoria, Australia" Journal of Advanced Nursing Vol. 32, No 3, p 544-553.

42. Ibid.