

FROM THE EDITOR - Heather Dawson-Byrne

NURSING MEASURES PROVIDING POSITIVE OUTCOMES FOR THE NEWBORN

While midwifery education in Australia is the focus of intense debate both from within and outside the field of midwifery (Byrne P 2000), practitioners and researchers continue endeavouring to develop ways of improving the care for both the mother and newborn. For centuries this has been the focus of midwives and the year 2000 is no different. Confinement may be in hospitals, at home, or in birthing centres, regardless, the midwife puts the health and wellbeing of the child and mother as the prime reason for practice.

In the guest editorial, Professor Rhonda Griffith discusses the effects economic rationalism has had on the funding and practice of nursing, including midwifery practice.

The themed papers in this issue of *The Australian Journal of Advanced Nursing* focus on nursing measures aimed at increasing positive outcomes for the newborn.

Caroline Homer, Gregory Davis, Peter Petocz and Lesley Barclay compared obstetric outcomes, primarily caesarean section rates, of low-risk women presenting in spontaneous labour to the birth centre with those attending the hospital's conventional labour ward. This study showed no significant difference suggesting that, contrary to popular belief, the site of birthing does not effect clinical outcomes.

Along a similar theme, the second paper, authored by Margaret Cooke, Richard Mattick and Elizabeth Campbell, describes the adoption of a 'stop smoking' program in antenatal clinics. The 'stop smoking' program was specifically designed to be implemented by antenatal clinics with the aim of discovering what did, or did not, influence

clinic managers decision to adopt the program. Not unexpectedly, the intensity of program dissemination positively effected the program up-take rates. However, and perhaps more importantly, reasons for not using the program included insufficient time available to run the program, lack of support from fellow colleagues, inability to provide follow-up, staff turnover and poor access and storage of the program materials.

In the original papers section, Marie Gertz and Tracey Bucknall report on research conducted in Australian emergency rooms to investigate triage nurses decision-making and describe their scope of practice. The study revealed a marked variability in education for triage nurses with over half stating that no unit-based specific triage education was provided. These findings provide guidance for education and triage practice.

The fourth paper, 'The role of the psychiatric consultant-liaison nurse in the general hospital' by Julie Sharrock and Brenda Happell, examines the effect this role has on clients now that 'mainstreaming' of psychiatric clients is the norm in Australia.

The final article, by Wendy Day discusses the use of massage for clients with cardiac pain and the positive effect this may have on clients following an acute cardiac event.

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GUEST EDITORIAL - Rhonda Griffiths

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'THEY' SAY IT'S THE BEST HEALTH SYSTEM IN THE WORLD.....

Readers of this Journal who were practicing prior to the late 1980's will remember when the effectiveness of health care was assessed against the processes of care delivery and patient/client satisfaction with services. That changed dramatically in the early 1990's, when funders of health services in Australia (government at State and Commonwealth level), began to assess the efficacy of services in terms of dollars spent. Health planners and administrators are now occupied by schemes designed to maximise health outcomes for users of services while containing the cost of care.

Value for money has become the issue, with variations in cost being closely monitored by administrators (Hindle and Newman 1996), reforms being linked to costs rather than clinical discovery (Bessler and Ellies 1995; Duckett 1996) and the corporatisation of health facilities (White and Collyer 1997).

The health needs, priorities and options of Australians are changing for a variety of reasons including:

- increasing prevalence of chronic disease particularly related to an aging society, that requires ongoing care across agencies
- continuing reduction in hospital length of stay and the expanding role of non-inpatient and ambulatory services
- pressures for improved productivity and efficiency in the delivery of health care
- increasing dependence on technology.

The Commonwealth Government has responded by taking a strategic approach to the design and funding of services. Six priority areas were identified (public hospitals; pharmaceutical; non-inpatient medical specialist and diagnostic services; primary health and community care; small rural communities and mental health) and an integrated approach to services was adopted (National Health Strategy 1991). An integrated health system was to be achieved through:

- incentives for best practice;
- incentives for productivity and efficiency;
- scope for sustainability and flexibility;
- service models which encourage continuity of care;
- selective use of market and competitive pressures;

- equity in distribution of health resources;
- devolution of administration and service delivery (National Health Strategy 1991).

This was to be the blue print for health reform in Australia and to support it, a new vocabulary emerged that included case management, best practice guidelines, funder/provider split, diagnosis related groups (DRGs) and more recently, access block.

Describing the model and enabling factors was a start, but the real conundrum is for the service administrators and clinicians who have the task of bringing together services, dealing with incentive programs, restructuring services and developing relationships between providers to achieve the goals for continuity of care.

How is the model working at the point of care? There have been some long overdue reforms and some frustrations.

Incentives for Best Practice

Accountability is fundamental to professional practice and peer review, quality management and clinical protocols have been introduced as the key to achieving best practice. That was a positive move. The quality initiatives have been supported by financial and organisational incentives, also considered to be best practice.

Incentives have produced positive and negative outcomes; the interpretation depends on priorities and agendas and is not regarded consistently throughout organisations. Funding patterns and priorities continue to be a stimulus to review practice and initiate 'innovation' and no individual associated with health, including users of the health system, are exempt from the consequences. The theory-practice gap widens as financial incentives overtake clinical imperatives. Consequently hospital wards are less effective for teaching purposes. Interestingly, some incentives don't generate best practice.

Within health there are markedly different financial incentives according to the care environment. For example, private medical practitioners receive incentives according to the number of patients they see. Over servicing is not unknown. However, in the public hospital system, the opposite is the case and in fact there are additional marginal costs associated with attracting patients. Demand on accident and emergency departments is an example, and hospitals have addressed the increasing

demands by encouraging non-emergency patients to see a general practitioner. The effect is to shift the cost of care.

Fundamental planks of best practice are still to be put in place. A major system weakness that discourages an integrated approach and best practice, is lack of funding across organisations and little scope for moving across episodes of care; the principles of managed care have some way to go before that model is adopted in Australia (Duckett 1996). The NSW Government has recently announced 3 year funding cycles which will enable Area Health Services to plan expenditure over that period (NSW Health Council, 2000). However funding for services continues to emphasise single organisations or specific service episodes.

Incentives for productivity and efficiency

Demand for health services is increasing and in the majority of cases, growth in demand is met through efficiency and productivity savings within existing services. Clinical review mechanisms have been developed to enhance and emphasise evaluation of effectiveness of different types of interventions. The emphasis is on providing lower cost substitutes for higher cost services. That is not always bad if managed intelligently, for example early obstetric discharge programs.

Service models to encourage continuity of care

Clinicians confirm that the goal of continuity of care has not been realised, partly due to the funding procedures. There are numerous separate Commonwealth and State programs delivering primary and community care, often to the same target groups. Rural communities also have expressed concern about lack of access to services and inability to develop services that reflect their needs and resources where economies of scale are required to demonstrate viable and sustainable services (Trickett Titulaer and Bhatia 1997).

The idea of integrated services is very sensible, the irony is that neither Medicare nor other funding arrangements encourage integration. In fact methods of payment actually encourage a highly specialised and segmented health service (National Health Strategy).

Selective use of market and competitive pressure

Market mechanisms are widely regarded as important for improving consumer responsiveness and efficiency. However in health, consumer choice is restricted and consumers have limited ability to review data describing the effectiveness and consequences of particular services. Universal health insurance and bulk billing means that the cost of services has little impact upon consumer choice.

Equity in distribution of health resources

Area Health Services in NSW receive funding according to a Resource Distribution Formula based on geographic and demographic variables, in addition to functions such as research and teaching. Equity in health does not imply all

Australians will have access to all services in their local area. The purchaser-provider split was introduced in New Zealand as one strategy to ensure all residents would have affordable access to a range of core health services (Ashton 1997). That model could positively influence equity by separating the demand side (funder) from the supply side (provider), however in New Zealand it is not seen as a long term strategy, rather a precursor to managed care (Ashton 1997).

CONCLUSION

Health is a complex system; one in which hardly anything is as it seems.

Area Health Services purchase services from local sources to meet their requirements based on type and quantity of service and location. Purchasers reorganise services based on their priorities, frequently with the view of introducing an element of rationing, or substituting a costly service for a less costly alternative.

Nurses are the public face of the health system and in that position take much of the criticism that should more accurately be aimed at Government and Area Health Services. We continue to be excluded from priority setting, particularly at the local level and therefore continue to react to directives, which at times are in conflict with our professional philosophy and personal priorities for job satisfaction and fulfilment.

Is it any wonder that an experienced registered nurse is becoming a rare find in wards? Health Departments and nurse registering authorities have expressed concern at the declining number of students enrolling in nursing programs and the increasing number of experienced nurses leaving the profession. The reasons are multifactorial, however I believe a review of the impact of current policy on nursing services would be worthwhile.

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BIRTH CENTRE OR LABOUR WARD? A COMPARISON OF THE CLINICAL OUTCOMES OF LOW-RISK WOMEN IN A NSW HOSPITAL

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KEYWORDS: birth centres, caesarean section, low-risk

ABSTRACT

A number of birth centres were established in New South Wales as a result of the Shearman Report (NSW Health Department 1989). The objective of this study was to compare the obstetric outcomes, primarily caesarean section rates, of low-risk women presenting in spontaneous labour to the birth centre with those attending the hospital's conventional labour ward. The study showed that there was no significant difference in the caesarean section rate between the groups (3.5% in the birth centre and 4.3% in the labour ward). We suggest that the site of birthing does not affect clinical outcomes for low-risk women at this hospital. These results are relevant to contemporary clinical practice as they question the basis upon which birth centres have been popularised, that is, the medicalisation of birth in conventional labour wards increases intervention rates.

INTRODUCTION

The Shearman Report on Obstetric Services in New South Wales (NSW Health Department 1989) recommended the establishment of low-risk, 'home-like' delivery areas, or birth centres, where women could receive continuity of care from midwives through their pregnancy, labour and delivery. This, plus consumer activism from women's groups, led to the development of a number of birth centres in New South Wales. The recent Australian Federal Government's Report into Childbirth Procedures was also very supportive of birth centres and recommended the continuation and expansion of birth centre services in the public health system (Senate Community Affairs Reference Committee 1999).

The philosophy behind a birth centre is to provide low-risk pregnant women with care in a non-clinical environment with as little intervention as possible in the normal progress of labour. In Australia however, most women of low-risk status give birth in hospital labour wards. In 1995, only 3.2 % of NSW births occurred in birth centres (Taylor and Pym 1996). As a result, more salaried midwives work in hospital labour wards compared to birth centres.

Excellent obstetric and neonatal outcomes have previously been reported in women delivering in birth centres with low intervention rates (Stern et al 1992), equivalent neonatal results (Biro and Lumley 1991) and increased maternal satisfaction when compared with routine maternity care in hospital-based labour wards

(Waldenström and Nilsson 1997; Waldenström and Nilsson 1993). The last reported Australian comparative study of a birth centre and labour ward was conducted in 1986 and reported that the obstetric outcomes for women admitted to the birth centre were generally better than for those admitted to the labour ward, although these differences were not statistically significant (Martins et al 1987).

This paper reports on a retrospective cohort study conducted at St George Hospital, where the outcomes of women going into spontaneous labour in the birth centre were compared with those of similar women who presented to the labour ward. The clinical endpoints were rates of caesarean section and assisted vaginal delivery.

Setting

Approximately 2500 births occur each year, either in the birth centre or labour ward, at St George Hospital in Sydney. The birth centre was purpose-built and opened in 1991. It is situated 50 metres from the labour ward and contains two birthing rooms each with a double bed and a spa bath. Basic neonatal resuscitation equipment is immediately available, although concealed. Women are transferred to the labour ward in order to receive electronic foetal monitoring, intravenous infusions or epidural analgesia. Women who wish to attend the birth centre are referred by general practitioners and accepted for care if they are deemed to be at low-risk according to strict criteria. Antenatal, intrapartum and postpartum care are provided by midwives and care continues in the birth centre unless medical or obstetric complications necessitate review by an obstetrician and/or subsequent transfer to the labour ward.

METHOD

Prior to commencement, the study was approved by the Ethics Committees of the South Eastern Sydney Area Health Service (Southern Section) and the University of Technology, Sydney. Data was collected retrospectively for the calendar year 1995. Women suitable for inclusion in the study were public patients presenting in spontaneous labour after a pregnancy free of medical or obstetric complications, with a singleton vertex presentation between 37 and 42 weeks gestation.

Three hundred and sixty-seven women presented in labour to the birth centre in 1995 and all were included in the sample. Medical records were retrieved for these women and data collected by a researcher (CH) experienced in data collection. The labour ward sample was identified by obtaining a computer-generated random selection of women who presented in labour to the labour ward in 1995. Women were excluded if they had been booked for the birth centre and transferred out due to complications, or had been admitted antenatally for

medical or pregnancy-related complications. The medical records of 632 women were reviewed. Of these, 265 women did not fulfill the low-risk criteria and were excluded to obtain the final labour ward sample of 367. The most common reasons for exclusion were induction of labour (19%), private insurance (15%), elective caesarean section (12%), pre-eclampsia (8%) and preterm delivery (7%).

Analysis

Data were entered into a database using Epi-Info software and transferred into a SPSS statistical package for the purposes of analysis. Analysis was performed on an intention to treat basis, that is, the women who presented to the birth centre were analysed as such, even if they transferred to the labour ward during their labour.

Student's *t* test was used for continuous variables and categorical data were analysed using the chi-squared statistic. All tests were two-tailed and significance was regarded as $P < 0.05$.

RESULTS

Demographics

The women from the birth centre and the labour ward were of similar mean age (28 years in the birth centre and 27.5 years in the labour ward) and parity, with more women in the birth centre group from an English speaking background (Table 1).

Table 1. The primary language spoken by women labouring in the birth centre and labour ward (Values are given as n (%) and the chi-squared statistic is applied to the table)

	Birth centre n=367	Labour ward n=367
English	304 (82.8%)	155 (42.2%)
Chinese	3 (0.8%)	63 (17.2%)
Arabic	17 (4.6%)	68 (18.5%)
Other	43 (11.8%)	81 (22.1%)

$\chi^2_3 = 150, p = 0.001$

Transfers from birth centre to labour ward

Of the 367 women who commenced labouring in the birth centre, 111 (30%) were transferred during labour to the labour ward. The principal reasons for transfer were slow progress in labour (39%), request for epidural analgesia (16%), meconium staining of the liquor (14%), and foetal distress (12%).

Mode of delivery

There were no differences in mode of delivery between the two birth groups, with the overall caesarean section

rate being 4% and the instrumental delivery rate 11.9% (Table 2). Twenty-two of the 312 nulliparous women had a caesarean section (7%) compared with 7 of the 422 multiparous women (1.7%).

Table 2. Mode of delivery of women commencing labour in the birth centre and labour ward (Values are given as n (%) and the chi-squared statistic is applied to the table)

	Birth centre n=367	Labour ward n=367	Total n=734
normal vaginal delivery	316 (86.1%)	302 (82.3%)	618 (84.2%)
caesarean section	13 (3.5%)	16 (4.3%)	29 (4%)
instrumental delivery	38 (10.4%)	49 (13.4%)	87 (11.9%)
$\chi^2 = 3.5, p = 0.62$			

The most common reason for an assisted delivery (caesarean section or instrumental vaginal delivery) was failure to progress in labour. Significantly more women in the labour ward group had an assisted delivery for foetal distress (24 of 65 assisted births [36.9%]) than in the birth centre group (10 of 51 assisted births [19.6%]) [(21 = 4.14, $P = 0.04$)].

Electronic foetal monitoring was significantly more likely to be used in the labour ward group (53% versus 24%, $p < 0.001$). Electronic foetal monitoring was defined as the use of continuous cardiotocography for a significant part of the labour and delivery.

Analgesia in labour

Women in the birth centre group were significantly less likely to use analgesia in labour. More than half the women (53%) from the birth centre did not receive analgesia compared with only 21% from the labour ward ($p < 0.001$). More women who presented to the labour ward used epidural anaesthesia (19.6%) than those who presented to the birth centre (15.5%). Other forms of analgesia included nitrous oxide inhalation and narcotic injection.

Perineal outcomes

After controlling for parity, women in the birth centre group were more likely to have an intact perineum (36%) than those in the labour ward (27%). Women in the labour ward group were more likely to have an episiotomy (17%) than in the birth centre (13%), however, these differences were not statistically significant.

Neonatal outcomes

All infants were liveborn and Apgar scores at five minutes were similar between the two groups. There were

no five minute Apgar scores less than 4 in either group. One neonatal death occurred, an infant from the labour ward group with a severe congenital abnormality who died on day 10 after being transferred to a level three neonatal nursery.

DISCUSSION

While this is a small, non-randomised study, the results have implications for clinical practice and the organisation of maternity services at this hospital and in similar centres. More women from English speaking backgrounds chose to attend the birth centre than the labour ward. Cultural preferences may account for this difference but it could also be related to a dearth of information about birth centres in other languages. Research conducted in Sydney in the late 1980's also reported an imbalance in the primary language of those seeking birth centre as compared to labour ward care (Martins et al 1987). Birth centres may not be an attractive option to all women and this should be considered when the planning and introduction of maternity services is undertaken. It is also important to ensure that language does not act as a barrier to birth centre access.

Women who presented to our birth centre in labour had a low emergency caesarean section rate. Birth centres in Australia (Stern et al 1992), the United States (Rooks et al 1989) and Sweden (Waldenström and Nilsson 1997) have reported comparable caesarean section rates, reflecting the low-risk nature of this group of women.

When this project was planned, it was thought that the emergency caesarean section rate in women of similar risk status would be higher in the conventional labour ward. This proved not to be the case, suggesting that the labour ward can achieve similarly low operative delivery rates. In the only randomised controlled trial of comprehensive birth centre care (Waldenström and Nilsson 1997), there were also no significant differences in the caesarean section rates between birth centre and standard care. In our study, the only difference in caesarean section rate was between nulliparous and multiparous women, which was not unexpected.

Caesarean section rates are an important outcome in the provision of maternity services, with significant implications for women in terms of physical as well as psychological health. An association has been found between emergency caesarean section and subsequent maternal psychological problems (Fisher et al 1997; Boyce and Todd 1992). Research in Queensland (Creedy 1999) has also identified a strong correlation between obstetric interventions (including caesarean section) and post-traumatic stress disorder. Caesarean sections also impact on health services in terms of costs. For example, in the United Kingdom, it has been estimated that each 1%

increase in caesarean section rate costs the National Health Service an additional £5 million (Anonymous 1997).

We believe women attend a birth centre as they feel that this will mean their chance of experiencing a normal birth is higher. Our study and others would suggest that this is not true. Birth centres can offer a home-like atmosphere, a non-interventionist women-centred philosophy and usually, continuity of midwifery care. However, we believe that the philosophy in conventional labour wards is moving towards that of a birth centre in terms of meeting women's needs and avoiding unnecessary intervention.

Significantly more women in the birth centre group did not require any analgesia during labour. This may reflect the self-selection bias inherent in this study, that is, women who wanted a 'natural' labour and birth were more likely to choose to attend the birth centre. Similar proportions of women from the two groups used epidural analgesia. Earlier research in low-risk primiparous women has reported mean epidural rates of 53% (Hewson et al 1985) and more recently, 28% (Williams et al 1998). Randomised trials of continuity of midwifery care for low-risk women have reported epidural rates ranging from 16 to 32% (MacVicar et al 1993; Flint et al 1989; Turnbull et al 1996). The Birth Centre Trial in Sweden reported rates of 12 and 15% in the birth centre and standard care groups respectively (Waldenström and Nilsson 1997). Our overall rate of 17.5% reflects the low-risk status of the women and the philosophy of both the birth centre and the labour ward.

During labour, almost one third of women in our study transferred from the birth centre to the labour ward. This transfer rate is higher than others reported, for example, 19% in the Swedish (Waldenström and Nilsson 1997) and Australian (Stern et al 1992) studies and 12% in the United States (Rooks et al 1989). Possibly this is related to the close proximity of the birth centre to the labour ward which made intrapartum transfer easier to arrange than from a free-standing or external centre. Also, as the birth centre and the labour ward were part of one maternity unit, birth centre midwives were able to follow many of the transferred women which may result in a lower threshold for transfer than in other institutions.

More women in the labour ward group had an assisted delivery for foetal distress than those commencing labour in the birth centre. The reason for this is unclear, however it is possibly related to the easy accessibility to, and the subsequent increased use of, electronic foetal monitoring, with a resulting increase in the diagnosis of foetal distress in the labour ward group.

Perinatal mortality is a primary concern in the provision of maternity care, however, because of the low-risk nature of the women in our cohort, an impossibly large sample would be necessary to determine statistically

and clinically significant differences between the birth centre and labour ward groups. Our study did not have sufficient power to detect significant differences in perinatal mortality. Previous descriptive studies of birth centres in Australia and the United States have reported perinatal mortality rates of between 0.89 and 1.3 per 1000 births in women commencing labour in a birth centre (Stern et al 1992). The Swedish study (Waldenström and Nilsson 1997) however, raised concerns about an excess of perinatal deaths in their birth centre group (0.9% versus 0.2%) and recommended further research into the safety of birth centres be conducted.

It was not possible to conduct our study as a randomised controlled trial as the birth centre has been established for six years and women and clinicians were opposed to such a trial. Our study was also not designed to examine the reasons why women choose birth centre care, nor the impact that this environment had over their birthing experience and level of satisfaction. While we acknowledge the importance and significance of these factors, they were outside the scope of this project.

CONCLUSION

This study suggests that appropriate care of low-risk women can result in excellent outcomes wherever labour is conducted. This study has implications for midwifery and maternity service provision in the Australian context. Conventional labour wards, where the majority of low-risk women receive intrapartum care, can achieve favourable outcomes and women need to be reassured that low caesarean section rates are possible in both birth centres and labour wards.

In the future, when we plan the provision of maternity services in Australia, we may need to decide whether to increase the number of birth centres or to redesign conventional labour wards to make them more like birth centres. Our study has shown that a conventional setting can achieve excellent outcomes. We also know that birth centres are available to only a small proportion of women and are usually oversubscribed. Perhaps then, some of the answers lie in reorganising our maternity services so that all women can have access to a 'birth centre philosophy' if they choose.

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A DESCRIPTION OF THE ADOPTION OF THE 'FRESH START' SMOKING CESSATION PROGRAM BY ANTENATAL CLINIC MANAGERS

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KEY WORDS: antenatal, smoking cessation program, management take-up, case history

ABSTRACT

This paper reports the dissemination by the Cancer Education Research Program (CERP) of a previously tested smoking cessation program called 'Fresh start' to 23 antenatal clinics. The program was specifically designed for use by staff in antenatal clinics. The aim of the study was to investigate the factors that influenced midwifery managers' adoption of the program. Clinics were randomly assigned to groups that received the program by simple dissemination (mail-out), or intensive dissemination (a mail-out, plus personal contact with midwifery facilitators). A case history approach was used to investigate the variables which influenced a midwifery manager's decision to adopt the program. The results indicated that intensive dissemination improved program adoption and that program components were selected to fit the physical and social context within antenatal clinics. Managers believed the main barriers to the implementation of the program were: the negative reactions of clients; insufficient time available for smoking cessation interventions; lack of support from professional colleagues; inability to provide follow-up to clients; staff turnover; and poor access and storage of materials.

INTRODUCTION

A number of smoking cessation interventions (i.e., advice, education, self-help material, and cognitive-behavioural strategies to quit) have been developed and tested for use in primary and secondary health-care settings (Mattick and Baillie 1992). Randomised controlled trials indicate that the use of brief interventions have a small but significant effect on smoking quit-rates in both general and pregnant populations (Walsh and Redman 1993; Lumley 1992; Baillie et al 1994). The 'Fresh start' smoking cessation program has been specifically designed for use during the antenatal period and has a 9% difference in validated smoking cessation when compared with usual care (Walsh 1994).

Experimental trials investigating the effectiveness of smoking cessation programs are often tested in only one or two institutions. Experimental trials require rigorous compliance with program protocols therefore they are often unable to adequately describe the factors which influence adoption and implementation of the program by organisations and clinicians (Susser 1995; Norman et al 1990; Halvorsen et al 1993; Edmundson et al 1994). Experimental trials do not allow the investigation of factors (for example uptake of programs and program fidelity) which can influence the program outcomes when they are disseminated to a large number of institutions (Steckler et al 1992; Walsh et al 1990; Wiggers and Sanson-Fisher 1994; Sanson-Fisher and Campbell 1994). Bauman et al (1991) states there is little guidance on how best to disseminate and implement programs when environmental conditions differ (e.g. experience of staff, number of resources, client populations) because there has been inadequate research about the dissemination of programs. These authors further suggest there is a need to identify program and contextual factors necessary and sufficient for a desired outcome.

The Cancer Education Research Program (CERP) disseminated the 'Fresh start' smoking cessation program to 23 antenatal clinics in NSW Australia. The objectives of the project were to examine the relative effectiveness of the tested program using two methods of dissemination (simple and intensive). This paper describes the dissemination process and the adoption of the program by antenatal clinic managers. Dissemination is the planned and active diffusion of a new idea to a social system (Basch et al 1986). Rogers' Diffusion of Innovation model suggests that the dissemination process can be described in five stages (Rogers 1995). These stages are: knowledge, persuasion, decision to adopt, implementation and confirmation. Dissemination failure can occur at any of these stages and the model implies that different strategies may be required to promote dissemination during each phase (Scott and Bruce 1994; Parcel et al 1990; Orlandi 1987). This study describes the factors that influence a manager's decision to adopt the 'Fresh start' program.

Several authors state that understanding the process associated with health promotion programs is as necessary as investigating the outcomes of such programs (Dolan-Mullen et al 1995; Portnoy et al 1989; Susser 1995). Information about the interaction between the context, the mechanism of delivery and the program, is necessary to determine the practicality and flexibility of the program and the generalisability of the outcomes (Susser 1995). This study aims to describe the 'Fresh start' smoking cessation program and its mechanism of dissemination. It also aims to gain some understanding of the range of variables which impact on program dissemination and a manager's adoption decision in different organisational contexts.

A descriptive case history approach is used in this study to explore the process of program dissemination to hospital antenatal clinics. Case histories, which are descriptive rather than predictive in nature, are useful for generating hypotheses and appropriate for this study because of the early stage of development of dissemination research (Portnoy et al 1989). A case history approach is also appropriate due to the methodological issues inherent in studies investigating large complex social units. It is difficult to obtain a sample of sufficient size to carry out statistical analyses with adequate power to test the effect of the large number of organisational and individual variables (Dolan-Mullen 1995; Susser 1995).

Study aims

The principal objective of the research was to examine the relative effectiveness of a tested smoking cessation education program using two methods of dissemination. This paper examines the dissemination process during the adoption phase of dissemination. The specific aims are to describe: the adoption of the program by clinic managers; the factors which influence a manager's decision to adopt

the program; the perceived processes necessary for program implementation and the perceived barriers to implementation.

METHOD

The 'Fresh start' smoking cessation program was developed and disseminated by the Cancer Education Research Program (CERP) to 23 hospital antenatal clinics. A description of the design, research materials, and the methods used to disseminate the program will be presented followed by the procedure used to evaluate the adoption of the program.

Design

The research design was a randomised-controlled trial of the dissemination of a smoking cessation program using two methods of dissemination (Simple and Intensive). This paper is a descriptive study of the adoption of the program by clinic managers three months post dissemination.

Research materials

The 'Fresh start' smoking cessation program is multifaceted and has components for: policy development; training of clinicians; resources for smoking cessation intervention and program evaluation. The smoking intervention component of the 'Fresh start' program has been tested in a randomised controlled trial and found to be effective (Walsh 1994). The program attempts to provide smoking clients with a repetitive message about smoking cessation through a variety of sources; written, visual and interpersonal. The interventions are designed to take a minimum amount of staff time (approximately 10 minutes) and allow for flexibility, according to the day-to-day demands of the clinic. All hospitals received materials to trial the program and could request more if required. These materials consisted of a training video and staff flip chart for staff, a quit-kit, video and stickers for clients, details about sample policy and computerised feedback resources.

Staff training video: a 20-minute video that described a seven-step approach, which could be tailored to an individual client needs. These steps ranged from asking the client about her smoking patterns to arrangement of follow-up dependent on the client's decision.

Staff flip chart: a chart used by staff to facilitate discussion about smoking so that smoking cessation messages could be reinforced and barriers to smoking cessation addressed with clients.

Client stickers: labels which provided information about smoking status and smoking cessation interventions offered to a client and which were designed to fit on antenatal records.

Client quit-kit: consisted of written materials which were offered to clients. These included the 'Smoking and Pregnancy' pamphlet (Quit: Smoking and Pregnancy 1993), a self help quit booklet 'Extra help to quit for good' (Quit: Extra help to quit for life 1993), and a quit declaration. These provided information about the effects of smoking during pregnancy and strategies that could be used by the client to quit smoking.

Client video: a 15 minute video (Walsh 1994a) which was directed towards pregnant smokers and provided similar information to the quit kit, but in a visual form. The video could be shown to groups, or loaned to individual clients.

Sample policy: detailed the agreed role of clinic staff regarding detection, treatment and follow-up of pregnant women who smoke. Best practice recommendations were described according to the readiness of clients to quit smoking. Policy formation was an important step to establishing positive staff attitudes and practices to smoking cessation and the sample policy could be modified to best fit the context of the clinic.

Computerised feedback: a computer program designed to monitor smoking cessation intervention was available for a duration of two weeks to those clinics selected for intensive dissemination of the program.

Clients used a touch screen computer to provide information about smoking status and smoking cessation intervention provided by the clinic. Computerised feedback was only offered to the Intensive dissemination clinics because this component required negotiation and training which could not be executed via simple mail-out.

Sample selection

All hospitals in NSW, where there were greater than 500 births/year were asked to participate in the trial. Twenty-three hospitals agreed to participate after ethics approval by the area health service. Two additional hospitals did not participate because of a delay in ethics approval. The 23 clinics were stratified according to clinic size (number of births) and the proportion of smoking clients. Hospitals were then randomly allocated to either the simple or intensive dissemination groups. The results of a previously conducted pre-dissemination survey (Cooke et al 1998), indicated that the dissemination groups did not appear to differ in the number of beds, number of births, number of clinic staff, length of appointment times, type of decision-making, staff perceptions of barriers to smoking cessation education, clinic size, proportion of smokers, current smoking cessation education (SCE) practice or barrier scores for providing smoking cessation education (see Table 1).

Table 1: Means and frequencies of variables by dissemination group

Variable	Range	Simple dissemination Mean (sd) n=12	Intensive dissemination Mean (sd) n=11	Significant difference
Average no. beds/hospital	90-903	352 (296)	334 (227)	ns
Average no. births/hospital	818-4697	2508 (1207)	2089 (1098)	ns
Average no. clinic staff/day	3-13	7 (2)	7 (2)	ns
Average time for medical antenatal appointment	10-15 mins	12.1 (2.5)	11.4 (2.3)	ns
Average time for midwifery antenatal appointment	10 -30 mins	17.9 (5.4)	14.5 (3.5)	ns
Average staff rating for centralised decision-making	6-30	18.4 (2.0)	17.7 (2.2)	ns
Average staff score for barriers to smoking cessation	11-42	24.8 (6.3)	25.1 (6.4)	ns
Frequency of hospitals by type of hospital		n = 12		n = 11
Tertiary		2		2
Regional referral		3		3
Teaching referral		2		3
District		5		3
Frequency of hospital with SCE policy		2		1
Frequency of hospitals with midwifery clinics		10		7

Dissemination methods

Two methods of dissemination were used to distribute the program (simple and intensive).

Simple Dissemination (SD): Twelve clinics were sent the 'Fresh start' program components via a simple mail-out. The covering letter was addressed to the antenatal clinic manager. This letter gave information about the risks associated with smoking during pregnancy, the effectiveness of brief interventions and how the 'Fresh start' program could be used to overcome the barriers to smoking cessation. It provided a brief description of the various components offered in this program and how they should be used. It also discussed the availability of materials for clients who were unable to speak or read English. SD Clinics were given enough materials to trial the program and a contact number should they desire more materials to continue the program. All materials were provided free of charge. The computerised feedback was the only program component not offered to the SD clinics.

Intensive Dissemination (ID) n = 11: For this group a mail-out was facilitated by personal contact with midwifery facilitators. The ID clinics were also provided with specific feedback from a pre-dissemination survey about the proportion of clients who were smokers and the level of smoking cessation intervention that was provided in the clinic. Future evaluation of the program was offered via computerised feedback.

The ID clinics were supplied with the name and photograph of a midwife who would contact them within seven days of receiving the package. The role of these midwives was to persuade managers to adopt the program. They were also available to provide training and support for the program and to discuss any difficulties associated with the implementation of the program. The midwifery facilitators were trained in the use of the 'Fresh start' program. Clinics could contact the midwives at any time. The midwives were able to provide materials as well as resources (such as video machines, computers) necessary to run the program.

Evaluation procedure

Evaluation was undertaken by a) midwifery facilitators who kept a logbook on all contacts with the clinics, b) a structured interview with clinic managers three months after introduction of the program and c) the use of the Moore and Benbasat attribute scale (Moore and Benbasat 1991) which measured each manager's perception of the program.

Logbook: The midwifery facilitators kept logbooks of all contacts with clinics. The type of contact, length of contact and a summary of the interaction between facilitator and clinic were recorded.

Interview: Three months after the 'Fresh start' program had been disseminated, 23 antenatal clinic managers were contacted by phone and asked about their awareness and adoption of specific program components. A structured interview schedule with some open-ended questions was used to collect data. The managers were asked their reasons for adopting/not adopting specific components, their plan for implementing the program and potential barriers to implementing the program.

The Moore and Benbasat attribute scale (1991) was used to obtain the managers perceptions of the program. Whilst this instrument was originally developed to study the adoption and diffusion of information technology, Moore and Benbasat state that it could be modified to investigate other types of innovations (Moore and Benbasat 1991). This scale has been recommended for use by Rogers and is consistent with his ideas about influential innovation characteristics (Rogers 1995). The brief 25 item version of the scale was reworded to improve face validity and piloted using 10 midwifery managers, who were sent the smoking cessation program, but were not associated with the dissemination. The scale had items which measured a manager's perceptions of the relative advantage of the program, compatibility with clinic routines, ease of use, visibility of the program to others, demonstrability of program outcomes, ability to trial the program, impact on professional status and degree to which program use was voluntary. Qualitative and quantitative analysis of the data was carried out using content analysis and simple descriptive statistics to describe the dissemination and adoption of the program.

RESULTS

The results will describe the differences between the various dissemination methods (SD and IS). The findings will be described in relation to the research aims which were: the adoption of the program by clinic managers; the factors that influence a manager's decision to adopt the program; the perceived processes necessary for program implementation and the perceived barriers against implementation.

The dissemination process: differences between SD and ID clinics

The facilitation of the program by midwives in the Intensive Dissemination clinics increased the level of contact with the change agency. After the initial mail-out of the program, only three out of twelve midwifery managers in the Simple Dissemination (SD) clinics had contacted CERP. These managers requested more quit-kits, flip charts and client videos. Phone contact with these three clinics ranged between 5-35 minutes.

Table 2: Mean differences between intensive and simple dissemination groups for TINT1, Attribute score2 and Adoption score3.

Variables	Mean	Sd	n	95% CI	t	p
TINT¹						
Intensive group	4.60	1.46	12	-1.00 - 1.35	.31	ns
Simple group	4.42	.72	8			
Attribute score²						
Intensive group	60.67	5.93	12	-10.09 - 2.85	-1.18	ns
Simple group	64.29	7.30	7			
Adoption score³						
Intensive group	8.33	3.45	12	.44 - 8.23	2.34	.03
Simple group	4.00	4.87	8			

Note: TINT¹ = The mean number of types of smoking interventions used by staff in each antenatal clinic prior to dissemination. This measure was obtained from a pre-dissemination survey of all ANC staff in the participating clinics.

Attribute score² = the addition of the sub-scale scores from the Attribute scale.

Adoption score³ = the number of program components adopted or planning to be adopted. Components not being adopted were given a score of 0, planning to be adopted were given a score of 1 and components already adopted/implemented were given a score of 2. n = number of ANC clinics in each group, 95% CI = the 95% confidence interval of the difference between the means. ns = not significant at = .05.

Phone contact and personal visits for the Intensive Dissemination (ID) clinics were usually initiated by CERP. The ID clinics were contacted by phone 4-9 times by the midwifery facilitators. The duration of the calls was between 12-95 minutes. These calls were used to provide further information about the program, persuade the managers to adopt the program, obtain a firm decision to adopt the program and negotiate training sessions. All but two clinics in the ID group had at least one personal visit from CERP midwifery facilitators. These two clinic managers refused training as they believed that the program was self-explanatory. Three of the ID clinics had more than one visit from the facilitators. The visits were primarily used by midwifery facilitators to provide information about the program to managers and provide training to clinic staff. The average time for each visit was approximately 60 minutes.

Program adoption

Of the 23 antenatal clinics, 17% (4) reported adopting all of the program components, 48% (11) were adopting parts of the program, 17% (4) were planning to adopt the program and 17% (4) were not using or planning to use the program. The reported adoption of the program by clinic managers was cross-checked with each facilitator's logbooks and the number of materials supplied to the clinics by CERP. There was consistency for 16 of the 23 clinics. Three clinics with discrepant findings appeared to be adopting (managers had requested and been provided with large numbers of program materials) even though the managers reported not adopting those components. All these hospitals were in the ID group. ID clinics may have been under some pressure from facilitators to accept program components. Four hospitals (SD n=2 and ID n=2) reported they were adopting the program although they had not ordered extra components. Several of these clinics stated they had other sources for the smoking cessation quit kits.

Significantly more of the six components of the 'Fresh start' program were adopted by the ID group than by the SD group (See Table 2 - Adoption score).

The majority of clinics adopted the training video, quit-kits, client video and flip chart and perceived these program components to be useful. Overall, clinics were less likely to adopt the labelling stickers or the sample policy.

Factors influencing adoption

Reasons for program adoption: On average, most of the managers rated the quality of the program as high (M = 7.3, sd 1.7, range 1-10) with eight of the managers spontaneously commenting on the 'good' quality of the program. However, the managers' perceptions of attributes (Moore and Benbasat 1991) of the 'Fresh start' program did not appear to differ due to the method of dissemination (See Table 2 -Attribute score).

Reasons given for adopting the program, in order of frequency cited, were: to decrease the number of smokers, the quality of the program, to improve women's health status, the availability of the program, the unfulfilled need for a smoking cessation program, and to assist research. Managers, who were planning to use the program but did not have the complete authority to adopt the program, stated that adoption was delayed due to the need to gain approval from medical personnel. Other managers who were planning to use the program had difficulty organising and providing staff with information and training for the program.

Reasons for non-adoption of the program: There were four managers who did not adopt the program. Of these managers, one had not received the program and three managers reported clinic disruptions due to staff turnover and workload. For example, one clinic was in the

process of closing its maternity service and the manager had changed twice since the program had been disseminated. The other clinic had a new manager and the third had a daily rotation of midwives, who required extensive orientation to the clinic. Two of these managers also expressed doubts about the effectiveness of smoking cessation during pregnancy and the third was a smoker who believed it was the doctors' role to address drug use during pregnancy. The non-adopters were aware that the program existed, but only one was motivated/able to review and evaluate the program.

There was a difference in the type and number of components adopted by the clinics and the reasons given for adopting/not adopting them. For example, the flip chart was believed to be a useful reminder to staff by several managers, but others believed it to be time-consuming and too 'clinical' to use with clients. The stickers were perceived to be useful by only a minority of the managers and two managers in the SD group believed labelling would have negative consequences. The sample policy was neither positively nor negatively rated by any of the managers. Also, the client video was perceived by one manager to be too confronting, while another manager rated it as excellent because it did not 'sanitise' the risks associated with smoking.

Furthermore, the physical context within the clinics influenced the adoption of some components. For instance the client video was perceived to be of limited use in three clinic situations: in crowded and noisy clinics, in clinics where clients controlled the TV and in clinics which had no video fixtures. The quit-kits and client videos were also perceived to be of limited use in clinics with a high proportion of non-English speaking clients.

Essential implementation processes

The managers indicated that important processes for program implementation included informing the stakeholders, training, program evaluation and structural changes. They believed that it was necessary for hospital administrators to be accepting of the program. This occurred primarily through CERP gaining ethics approval for the research trial. Nevertheless, several of the midwifery managers also stressed the need to inform or gain approval for the program from both the nursing and the medical supervisors of the clinic. Midwifery staff, and to a lesser extent medical staff, were informed of the program during usual ward meetings or on an informal basis in smaller clinics. Staff generally participated in discussions about the program and decisions to use the program, except in one instance when the manager decreed the use of the program.

The managers believed training was necessary to change staff behaviour and attitudes. For example, some respondents stated, 'staff find it hard to get a woman to set a quit date, as they are used to telling a woman to cut down'. Training involved staff (mainly midwives) viewing the

training video in groups during an inservice session arranged by the midwifery facilitators (in the case of the ID clinics) or by the manager or midwifery educators (in the SD clinics). In a few clinics, new staff were informed of the program during orientation.

Several managers also perceived program evaluation was important for the maintenance of the program beyond the trial period. These managers believed their supervisors would require evidence that the program was effective. They also believed that their clinic would not be able to evaluate the program without the evaluation resources offered by CERP.

Finally, managers from two clinics said that the program required structural changes within the clinic. One clinic obtained extra staff to conduct the initial antenatal history to cope with the increased time associated with the use of the program. The other referred interested clients to a clinic where staff, who specialised in management of drug use in pregnancy, were available. This was done due to time constraints within the clinic.

Implementation barriers

Open-ended questions were used to elicit the actual or potential barriers associated with the implementation and administration of the program. These were categorised and Table 3 provides the number of participants who identified barriers. There was no difference in the total number of barriers identified by SD and ID clinics.

The negative attitudes or reactions of a smoker to the

Table 3: Frequency of ANC managers who reported barriers to the implementation of the 'Fresh start' smoking cessation program

Barriers to implementation	Frequency reported (n = 23)
Client behaviour	12
Time	11
Medical role	9
Follow up failure	8
Staff turnover	7
Staff attitude	7
Access/storage of materials	4
Staff training	4
Cost	2
Distance	1

program were the most commonly cited barrier to program implementation. It was believed that clients would ignore advice given by clinicians and that this would have consequences for the patient/clinician relationship. The program was also believed to be inappropriate for smokers who could not speak English.

The time involved with either using the program or in training staff was also seen as a barrier to implementing the program by approximately half the participants. Even those managers, who believed the program did not entail extra

time, were concerned about the availability of time to carry out interventions in a busy clinic. As one participant said *'if it is really busy it adds 10-15 minutes and if the client is refusing to listen...this is not necessarily extra time, as we covered it (smoking) anyway... there is just not enough time to do everything'*. The managers estimated that the time needed to provide smoking cessation interventions to smokers ranged between five to twenty-five minutes. Furthermore, although both ID and SD managers found it difficult to arrange time for inservice training, the additional persuasion the ID managers received from midwifery facilitators meant that staff training was more likely to be organised in ID clinics, than in SD clinics.

Another problem perceived by managers was the difficulty in achieving the involvement of medical staff in the program. Medical staff did not usually attend ward meetings or clinic training sessions. This perception was supported by the midwifery facilitators from CERP. Midwifery staff had no control or authority over the behaviour of medical staff. Senior medical staff were sometimes believed to be unsupportive of the program and junior medical staff were transient members of staff. There was a common perception, among the midwifery managers, that medical staff did not believe smoking intervention was part of their medical role. These statements are typical of the comments made *'I don't think the medical staff will be actively involved, particularly the VMOs' and 'Doctors tend to call midwives to do smoking cessation because they don't see it as their role'*. The CERP midwifery facilitators also believed that the doctors preferred to have doctors to train them in the program.

Lack of follow-up due to poor involvement of medical staff was perceived to be a barrier to the program. Midwives began the program with clients at the initial history-taking visit, but subsequent clinic visits were frequently carried out by medical staff and the managers believed follow-up of smoking cessation intervention was minimal. This was particularly true when subsequent care occurred outside the antenatal clinics, for example, during shared care with general practitioners. As one participant said *'medical staff are not supportive, and there is a problem with follow-up because of this.'*

Staff turnover, although only mentioned by seven participants, appears to be a significant barrier to the implementation of the program. All of the clinics which did not adopt the program, commented on the barrier due to staff turnover. Staff turnover was the only reason given for non-adoption by two of these clinics. Associated with staff turnover issues is the need to continually train staff and the time involved in doing this. As one manager commented *'we have new students every three weeks.... you have to reiterate it (the program) to them (students) five or six times'*. Another difficulty with training in larger

hospitals was getting the staff together in one place for training sessions.

Finally, a few of the participants saw that access and storage of program materials, future costs of the program and distance from the change agency were seen as potential or real barriers to implementing the program. Two managers also commented on the need to modify the program to suit their clinic. This could potentially decrease the fidelity and effectiveness of the program.

DISCUSSION

This study describes the *'Fresh start'* smoking cessation program and the methods used by CERP to disseminate the program to 23 antenatal clinics. It describes the adoption process and explores some of the complex interactions between the program, the dissemination method and the social context. The findings indicate that adoption of the program varies due to the method used to disseminate the program. Intensive dissemination clinics adopted more program components than simple dissemination clinics. Although the method of dissemination did not influence a manager's perception of the program, individual beliefs of managers and the context within the clinic appeared to influence the adoption of the program and the selection of specific components to be used by staff.

A limitation of the study is that only a small number of clinics were involved in the research. The range of variables that influenced adoption within these clinics was diverse. For this reason, this study can only present some of the factors which may influence adoption and cannot fully determine the relative importance of these factors to the outcomes of dissemination. There may also have been some 'pressure' on managers in the ID clinics to 'overstate' their adoption of the program due to the persuasion from CERP facilitators to use the program. Nevertheless, the three general areas that seem to influence program adoption are dissemination method, program characteristics and social context. Awareness of these areas and their relation to each other may assist in the future design and dissemination of programs (Norman et al 1990).

Dissemination method

Intensive interpersonal contact with program facilitators and the additional time, training, skill and material resources supplied by the facilitators in the ID clinics increased the number of program components which were adopted, when compared with simple dissemination (SD). However, simple dissemination and increased availability of program materials seems to be sufficient to increase awareness and encourage at least partial adoption of the program by clinics. It remains to be

seen whether the number of components adopted influences the implementation and the cost-effectiveness of the program.

It is difficult to form any firm conclusions about the causes of adoption failure as only a small number of clinics failed to adopt the program. Nevertheless, simple dissemination resulted in adoption failure in one clinic because there was no follow-up of the mail-out to check that clinics had received the program. This adoption failure could be addressed by improving the simple dissemination procedure. A routine follow-up of all clinics, two or three months after the initial dissemination, may increase adoption of the program.

The intensive dissemination involved the use of midwifery facilitators. A small proportion of midwifery managers believed that the program would not be effective. Similar to other research studies managers with negative attitudes towards smoking cessation interventions were less likely either to adopt the program or to support its use by other staff members (Saunders and Foulds 1992; Bruce and Burnette 1991). Interpersonal contact with facilitators compared with written materials only, did not improve the perceptions midwifery managers had about the program (Rogers 1995). Although intensive dissemination increased the number of components adopted by managers this does not appear due to the changing of managers' attitudes but may have improved the accessibility and availability of the program components.

The program characteristics

Adoption of the program appeared to be facilitated because the managers were able to select components perceived from the variety of program components as most suitable for their clinic. There was wide variation in the program components that were adopted and implemented by clinic managers. Several factors associated with the clinic environment appeared to influence their adoption decisions. These were the attitudes of the managers, client characteristics (particularly language), and the physical setting and resources of the clinic.

The components which were least likely to be implemented were the stickers (which recorded smoking status and treatment) and the sample policy. Bauman and colleagues suggest that lack of program fidelity may have implications for the implementation and maintenance of the program (Bauman et al 1991). Stickers on clients notes make the program more visible and act as cues for clinicians to provide intervention and follow-up. Several studies indicate that cues improve the effectiveness of smoking cessation interventions (Lindsay and Wilson 1994; Kottke et al 1994). Furthermore, use of the stickers may increase the ability of the clinic to evaluate program

implementation and its effectiveness. The managers in this study suggest program evaluation is critical for program maintenance and this is supported by other research (Kottke et al 1994; Rogers 1995).

The other component, which was generally not adopted by the clinics, was the policy for smoking cessation intervention. Policy development has been found to be associated with increased levels of smoking cessation within hospitals (Cooke et al 1996). The managers suggested there were two factors that influenced the non-adoption of policy development. Firstly, the program was perceived as a research trial and the managers were reluctant to commence policy development procedures without evidence of the program's effectiveness. Policy development within hospitals also involved several organisational levels and professions. The managers believed policy adoption required a substantial amount of time and effort. It may be that policy adoption requires more time and should occur later in the dissemination process. While changes to the program may influence the fidelity and effectiveness of the program, when a clinic was flexible enough to allow these changes, program adoption was enhanced (Bauman et al 1991).

Social context

Program adoption was facilitated when managers were able to make necessary changes to the social setting such as organising training, increasing staffing and changing clinic structure. This supports the assertion that organisational change is often necessary for the implementation of health education programs (Rogers 1995). It also indicates that the degree of flexibility within the social context is an important factor in the dissemination process (Dolan-Mullen et al 1995; Rogers 1995). The ability of organisations to adapt to change is believed to be influenced by the complexity and nature of communication networks with organisations (Rogers 1995).

The social context of the clinics also may have hindered program dissemination. Although the 'Fresh start' program was believed to be relatively advantageous, it was also perceived to have some negative consequences. Almost half the managers believed that the program would have a negative effect on the patient/clinician relationship and that there were significant time and resource costs associated with its implementation. Negative attitudes and lack of time are frequently cited barriers to health promotion adoption and these perceptions will need to be addressed if successful implementation and maintenance of the program is to occur (Wender 1993).

In addition to the social context, situational constraints of the clinics such as the staff turnover; problems with follow-up; the proportion of non-English speaking clients; the clinic's physical environment and distance from the

change agency, were believed to be barriers to program adoption. The barriers to the program were specific to each clinic and need to be addressed by clinic staff during implementation planning. Mechanisms and strategies to identify and overcome barriers to program implementation in each organisation should be part of the dissemination process.

Finally, some midwifery managers appeared to lack the authority to influence people who have a key role in program adoption and implementation, such as medical staff and hospital administrators. The managers generally believed medical staff were either unsupportive of the program, or disinterested. Whether this perception is accurate or not, it is likely to have acted as a barrier to program dissemination to medical staff and should be addressed in future dissemination efforts.

CONCLUSION

Evaluation during the early phases of dissemination can highlight factors that may facilitate or hinder adoption. Adoption is facilitated by the intensive interpersonal dissemination, program flexibility, managerial support, and adaptability of the clinic. But lack of program fidelity and situational barriers to program implementation are of concern. The effect of these factors on the implementation and the eventual outcomes of the program will be explored in future papers investigating the dissemination of the 'Fresh start' program.

The barriers to the dissemination of a smoking cessation program are specific to each clinic. A process which could be used to identify and address potential barriers to adoption and implementation should be a component of any health promotion program.

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ON-LINE ALCHEMY - PREVENTING GOLD BEING TURNED INTO LEAD!

Dr Rod Sims

The shift to technology-based and on-line learning has been matched by more focus on learners and learning through student-centred approaches to curriculum development. As tertiary educational institutions rely more on the on-line delivery and access of their courses, there can be a corresponding increase in expectations on the independent, and often geographically isolated, learner to use those materials effectively. This article argues that to make these resources valuable to the user requires the skills of an alchemist, as producing materials for on-line consumption is not about creating nice-looking digital paper but of harnessing the magic that on-line environments can provide through employing new methods of information and visual communication.

Are you enchanted every time you use your Internet browser to journey through the world of digital information - or are you faced with a maze of flashing images, too many buttons and a complicated network of links? It is these contrasting images of the enchanted and disenchanting user (Rose, 1999) that prompted the need to reassess what is presented on computer displays to better understand how the vast amounts of information can be accessed and interpreted effectively. Although the Internet continues to be lauded as the next great economy, research projects are highlighting the problems that individuals can have with the extensive array of information being made available electronically, and the demands of employers for that information to be retrieved in a timely and manageable fashion.

For example, a recent research project conducted through Southern Cross University, NSW investigated the phenomenon of interactivity by, metaphorically, placing it on stage and auditioning it for the role of human-computer communication. The research participants were the adjudicators for the audition, and the research data presented a new set of variables by which the interaction between human, computer and information might be considered. These variables present the means for enhancing interactivity in the context of human-computer communication and are a necessary focus for those involved in web-development by:

- Reducing interactive interference ~ ensuring that multimedia components do not interfere or interrupt the user's interpretation with the content

- Establishing interactive balance ~ creating an environment in which the user is able to watch, explore, navigate, become involved and manipulate content without being distracted by non-essential information
- Creating environments where users are in control ~ too often we assume that having access to options equates to control over the environment; ensuring the user has adequate information to be in control of their information needs is critical for all human-computer communications
- Enabling interactive negotiation between designer and user ~ conceptualising the user as someone who is working with the designer of the content, and not the computer as presenter of content, will allow that user to negotiate how to access and retrieve the content - rather than being forced to cater for another person's ideas of what is best
- Allowing the user to be an actor rather than being a passive onlooker to streams of images ~ the user has a right to actively participate in an interactive experience.

The on-going success of human-computer communication will be through interactivity as a manifestation of communication between the designer and the user. If designers can develop their ideas into a performance such that the user is integrated with that illusion of being on stage, then the magic and engagement so eagerly sought after might well be realised. And this is the challenge for the on-line developer - to become an alchemist who transforms content into a form with which the user truly interacts.

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NURSES FOR A HEALTHIER TOMORROW (NHT)

A coalition of 18 major American nursing and health care organizations including the Honor Society of Nursing, Sigma Theta Tau International, the American Organization of Nurse Executives, the American Hospital Association and the American Red Cross - have launch a new Web site, www.nursesource.org

The site features information about the nation's nursing shortage and how NHT is addressing the problem.

The coalition is organizing a national media campaign to recruit more nurses. According to the Bureau of Labor Statistics, employment opportunities for registered nurses will grow more rapidly than all other U.S. occupations through 2008. Despite this accelerating demand, nursing school enrollments have declined for five consecutive years, leading to a growing nursing shortage.

The new Web site is designed to help close this gap. Nursing professionals will be able to use the site to research thousands of health care careers and job opportunities.

VitalCareers.com, an Internet company focused on career content for health care employers and professionals, has signed on as a major sponsor of the Nurses for a Healthier Tomorrow campaign and also developed the Web site. VitalCareers.com provides an exclusive community for professionals who register their profiles to receive access to information about clinical and non-clinical health careers.

The site is linked to an interactive health careers job-bank database, operated by VitalCareers.com, allowing Internet users to search for career opportunities nationally.

CYBERNURSE-General Sites

Paul Kogler

www.thegovernment.com/bzschool

Can't seem to find your old school photos? Need to find an embarrassing photo for a colleague's 40th birthday? This site claims to have a comprehensive database of nearly every school photo taken in Australian schools. They guarantee to have at-least 98% of all Australian students' photos in their database

www.rosesonly.com.au

You get to work and open your diary only to discover that today is your anniversary ... that's ok! Just log onto rosesonly.com.au, order an arrangement and recover in style! [Rosesonly.com.au](http://rosesonly.com.au) has a large selection of arrangements coming in many different styles, colours and accessory options at very reasonable prices. They guarantee same day delivery.

www.olympics.com/eng/

The official site of the Sydney 2000 Olympics games. For those who have not already had enough this site offers good information for both domestic and international visitors.

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AFL - Need I say more! For all the scores, news, previews, events and footy tips this place is it!

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www.a2z.com.au

A site designed for those with better things to do on a Saturday than go shopping. A site that allows you to browse and order everything that you would normally expect to find at your local Coles Supermarket. Most major brands are available from a wide variety of departments. The site is user friendly, competitively priced with a high convenience factor but most products are only available in bulk.

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AUSTRALIAN TRIAGE NURSES' DECISION-MAKING AND SCOPE OF PRACTICE

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KEYWORDS: self-reporting, survey, decision-making, triage nurses

ABSTRACT

A survey of 172 Australian triage nurses was undertaken to describe their scope of practice, educational background and to explore the self-reported influences perceived to impact on their decision-making.

The survey results reveal variability in the educational requirements for nurses to triage. Indeed, over half of the nurses who participated in the study worked in emergency departments that provided no specified unit-based triage education. Additionally, substantial inter-respondent variations in nurses' self-reported participation in a range of decisions to expedite emergency care were identified. Analysis revealed significant associations between demographic characteristics of the triage service, levels of nurse autonomy and the nurses' self-reported participation in a number of triage decisions.

The findings of this study have implications for emergency nurse education and the development and evaluation of triage practice guidelines.

INTRODUCTION

Triage is a process of prioritising patients who attend an emergency department (Handysides 1996). In Australia, registered nurses assign a triage code using the National Triage Scale (NTS). This scale requires the nurse to allocate the patient into one of five categories according to how long they should wait for medical care. Two types of triage decisions have been described in the literature (Australian Commonwealth Department of Health and Family Services 1997; Geraci and Geraci 1994; Purnell 1991; Purnell 1995). Primary triage decisions relate to initial patient assessment, determining patient acuity, administering first aid and deciding patient dispositions. Secondary triage decisions are concerned with the initiation of nursing interventions in order to expedite emergency management (Australian Commonwealth Department of Health and Family Services 1997).

The qualities of decisions made by nurses with regard to the primary triage role have important implications for patient outcomes (Manchester Triage Group 1997). For the patient, a poor triage decision may result in a delay in life or limb-saving interventions and/or permanent disability. However, a number of authors have suggested that triage nurses frequently make secondary decisions to initiate nursing interventions aimed at expediting emergency care (Gerdtz and Bucknall 1999; Purnell 1995). Indeed, interventions provided by triage nurses while the patient is waiting for medical assessment may impact upon patient outcomes (Parris et al 1997; Purnell 1995).

Triage: Primary roles and secondary roles

The triage nurses' primary role is to allocate a triage code. The triage code reflects the patient's clinical need, and precedes medical diagnosis (Commonwealth Department of Health and Family Services 1997). While

the complexity of the decision to allocate a triage code is well recognised (Cioffi 1998; Corcoran et al 1988; Gerdtz and Bucknall 1999), there remains a paucity of research in the published literature regarding other decisions related to the primary triage role. These include nurses' decisions on patient dispositions, and referring non-urgent patients to other health providers.

Secondary decisions made by triage nurses' have been described in terms of individual tasks such as; ordering X-rays for patients with limb injuries (Lee et al 1996; Macleod and Freeland 1992; Parris et al 1997), or the collection of blood for laboratory tests (Purnell 1991). In Purnell's (1991) survey of 185 emergency departments in the United States twelve tasks frequently performed by triage nurses were identified.

Building on the work of Purnell (1991), Geraci and Geraci (1994) conducted a 72-hour observational study of the triage nurses' role in one emergency department. They identified a list of tasks performed by triage nurses for 466 patients. In addition to the scope of tasks performed by triage nurses, both North American authors discuss a number of factors that may influence nurses' participation in performing these tasks. These factors include the physical facilities provided at triage, the level of autonomy triage nurses have to make decisions, and, the characteristics of triage nurses including their educational background and level of experience.

In Australia, Standen and Dilley (1998) have reported variability in both the educational preparation of triage nurses and various aspects of the triage role. However, little has been discovered about the complex patient, nurse and organisational variables that influence triage nurses' decision-making in practice. These issues represent a serious gap in the knowledge required for the development of practice-based triage education.

The task environment

Clinical reasoning comprises a psycho-dynamic relationship between the human problem-solver and the task environment (Fonteyn 1995). In their seminal work, Elstein et al (1978) described the hypothetico-deductive model of decision-making used by physicians from an information-processing standpoint. The hypothetico-deductive model describes decision-making as an interactive process of data collection, hypothesis generation, cue interpretation and hypothesis evaluation (Elstein and Bordage 1988). Within the information-processing paradigm, clinical decisions are studied in context of practice (Dowie and Elstein 1998). Lyneham (1998) researched emergency nurses' decision-making using a modified grounded theory approach and concluded that the hypothetico-deductive model was used by nurses when conducting initial patient assessments.

Indeed, a commonly used method applied to the study of triage nurses' decision-making involves the use of simulated patient scenarios (for example see, Dilley and Standen 1998; Jelinek and Little 1996). Simulated patient scenarios however, fail to take into account that as with all decisions, the triage decision is socially constructed (Edwards 1998). It is argued that contextual factors within the task environment such as time limitations; stress and social interactions cannot be replicated when simulated decisions are made (Thomas et al 1989). For these reasons, several authors (Bucknall 1996; Watson 1994) have advocated a triangulation approach to the design of decision research in nursing combining multiple methods to address a range of questions (Greenwood 1998).

This paper reports on one part of a major research program aimed at developing a comprehensive description of triage nurses' decision-making. The purpose of this exploratory study was three-fold: first, to describe the scope of clinical decisions made by triage nurses; second, to describe levels of experience, education and special training required for nurses to perform the triage role; and third, to examine the self reported influences which are perceived to impact upon triage nurses' decision-making in practice.

RESEARCH AIMS

The aims of this study were to:

- Describe the level of appointment, experience and educational background of triage nurses in the state of Victoria, Australia.
- Describe the incidence of decision-making reported by the triage nurses surveyed with regard to eighteen clinical decisions drawn from triage practice.
- Describe the level of autonomy triage nurses' report to have in relation to eighteen clinical decisions drawn from practice.
- Explore the relationship between demographic characteristics of the triage services and triage nurses' participation in decision-making.
- Explore the relationship between triage nurses' levels of autonomy and their reported participation in decision-making.

METHOD

A descriptive exploratory method was chosen to address the research aims. This method was selected to facilitate both an initial description of the task environment and an exploration of the scope and frequency of decision tasks undertaken in practice. Beanland et al (1999) identify descriptive/exploratory

survey studies as an effective research method in searching for information about the characteristics of subjects, groups or organisations and the frequency of a phenomenon's occurrence.

Sample

Following ethics approval, the Council of the Emergency Nurses Association of Victoria Incorporated (ENA Vic Inc.) approved the study and provided access to its membership database. All ENA members (285) received a letter of explanation and an invitation to participate in the study, the questionnaire, and a reply paid envelope.

Questionnaire

A self-reporting questionnaire was developed to collect information regarding the nurses' clinical decision-making at triage and their demographic characteristics. This approach was selected as the most suitable method of data collection, as a large sample was necessary in order to describe the nurses' scope of practice in a variety of settings. The survey approach also avoided the difficult task of accessing multiple sites that may have only small numbers of nurses performing the triage role.

Validity

The content validity of the instrument was supported by a literature review and pilot study. The pilot questionnaire was administered to ten triage nurses. Feedback was obtained regarding the scope of responses offered and the clarity of questions asked. A number of revisions were made prior to the questionnaire being distributed. The questionnaire was divided into two sections:

Section one comprised of questions on demographic characteristics which were informed by the work of Purnell (1991) and included the type of emergency facility (generalist or specialist), the number of hours worked, and the nurses' qualifications.

Section two comprised of questions concerning eighteen skilled tasks performed by the triage nurse. The approach to questioning was based on a recent study of critical care nurses' clinical decisions (Bucknall and Thomas 1995). The skilled triage tasks chosen for inclusion in this study were identified in the work of Purnell (1991, 1995) and Geraci and Geraci (1994) and were selected to represent a range of triage activities of varying complexity. For each of the eighteen tasks expressed as a triage decision, participants were required to answer three questions. The first question required participants to indicate the level of autonomy they have in their work place to make the decision. A five-point Likert-type scale was employed to grade the response. The response categories were represented along the scale points as, 'guided by the triage assessment of each

individual', 'directed by departmental protocol or guidelines', 'requires a doctors' order' (neutral category) 'not performed due to resource limitations' and 'not permitted'. The second question asked the participant to state the frequency with which they made the decisions identified. A six-point Likert-type scale was employed with the points of the scale

1. 'never'
2. 'at least once per year'
3. 'at least once per month'
4. 'at least once per week'
5. 'at least once per triage shift'
6. 'several times per triage shift'.

In order to determine the scope of triage decision-making, the final question required participants to identify 'any triage decisions they made on a regular basis without medical supervision' that had not been listed.

Analysis

Descriptive and inferential statistics were utilised to examine the nurses' responses to each of the eighteen listed decisions. Content analysis was used to explore other decisions the nurses' reported to have made in the triage area without medical supervision.

Data analysis was performed using Statistical Package for Social Sciences. For the purpose of analysis, the decision data cells were collapsed to yield three categories to describe frequency; *frequent* decisions included those made several times per shift, daily or weekly, *infrequent* decisions were those reported to be made monthly or yearly and, *never* were those decisions never made. Pearson's Chi-square test was used to examine the relationship between the frequency with which the nurses reported making each of the listed decisions and the independent variables identified. Fishers Exact Test was utilised when the expected frequency within cells of the contingency table was small.

In analysing associations between nurses' levels of autonomy and their participation in decision-making, the decision data cells were collapsed to yield two nominal categories; *independent*, nurses' able to make the decisions based upon their own assessment and/or by using protocols or guidelines and, *contingent*, nurses' able to make the decision by obtaining a doctors order. Nurses who reported being unable to make the decision either due to resource limitations or who were not permitted to make the decision at triage were excluded from this section of analysis.

RESULTS

Demographics

The convenience sample of 285 emergency nurses accessed for this study represents 22.7% of Victorian emergency nurses (Victorian Government Department of Human Services and Division, 1999). A response rate of 68.07% (n=194) was achieved. A small number of respondents were excluded from the study because they were not currently practicing triage (n=23). A total of 172 returned questionnaires were subject to analysis.

Thirty-seven separate emergency departments were represented in the sample identified by cross checking postcodes with the Victorian Department of Health and Community Services listing public and private hospitals (Victorian Department of Human Services 1999). The demographic characteristics of the sample are outlined in Table 1.

Incidence of decision-making

The self-reported incidence of decision-making for the primary triage role revealed high percentages of decision-making in all of the decisions listed. In particular, decisions to evaluate vital signs and to splint an injured limb were frequently made by the majority of nurses. Table 2. shows a detailed presentation of the reported frequency of decision-making for each of the primary triage decisions listed. The nurses' reported frequency of decision-making for the secondary triage role revealed a greater degree of inter-respondent variation than the decisions related to the primary triage role.

Table 3. summarises the overall incidence of decision-making with regard to the secondary triage role. Over half of the nurses reported frequent participation in decisions to perform a urinalysis, utilise pulse oximetry, perform blood glucose monitoring and order an X-ray for an isolated limb injury.

The results of the content analysis provide a description of decisions other than the eighteen listed in the survey that the nurses' reported to be making in the triage area without medical supervision. The data was examined and coded according to seven themes that emerged from the nurses' comments. The main theme was triage referral (32%), which involved a number of subcategories, these were; accessing psychiatric liaison services (11.6%), drug and alcohol detoxification services (3.4%), and facilitating access to specialist medical services (5.2%). Other major themes included; administering analgesia (4.7%), administering first aid (15.6%), activating emergency responses (4.7%), conducting focused physical assessments (8.1%) and, directing ongoing nursing management (12.2%).

Table 1. Demographic characteristics of the study sample (n=172)

Variable	n	%	Mean	SD
Location				
Rural/remote	48	27.9		
designated triage nurse	29	60.4		
no designated triage nurse	19	29.6		
Metropolitan	124	72.1		
designated triage nurse	116	93.5		
no designated triage nurse	8	6.5		
Patient presentations				
<10,000	15	8.7		
10,000-30,000	61	35.5		
>30,000	86	50.0		
Type of emergency service				
Generalist	128	74.4		
Adult only	34	19.8		
Specialist	10	5.8		
Hospital type				
Public	160	93.0		
Private	12	7.0		
Appointment level				
Registered Nurse	40	23.3		
Clinical Nurse Specialist	59	34.3		
Associate Charge Nurse ChargeNurse/other	73	42.4		
Education Level				
Registered Nurse without emergency or critical care qualification	73	42.4		
Registered Nurse with certificate or Graduate Diploma in critical care or emergency nursing.	99	57.6		
Educational requirements specific to triage				
Triage orientation (< 1 week)	65	37.8		
Triage preceptorship (> 1 week)	23	13.4		
No unit-based education specified to triage	84	55.2		
Experience				
Years as a Registered Nurse			13.63	7.87
Years as an Emergency Nurse			8.58	5.69
Hours worked per fortnight in emergency area			58.72	19.60
Hours worked per fortnight at triage			18.51	12.94

Table 2. Nurses' self-reported frequency of decision-making regarding the primary triage role (n=172)

Reported frequency of decision-making				
Decisions	Frequently	Infrequently	Never	No resource Not permitted
	%	%	%	%
To evaluate vital signs (complete set or single parameter)	95.9	1.2	0.6	2.4
To splint an injured limb	91.8	7.6	0	0.6
To re-evaluate a patient in the waiting area	81.2	15.3	1.8	1.8
To refer a non-urgent (NTS 5) patient to a general practitioner	74.9	5.3	0.6	19.3
To consult with an inpatient unit	77.6	9.3	5.6	7.5

Key
 Frequent = several times per shift, once per shift, once per week
 Infrequent = once per month, once per year
 Never = the decision is never made
 No resource/not permitted = decision cannot be made due to resource limitations or nurses are not permitted to make the decision.

Table 3. Nurses' self-reported frequency of decision-making regarding the secondary triage role (n=172)

Reported frequency of decision-making				
Decisions	Frequent	Infrequent	Never	No resource Not permitted
	%	%	%	%
To perform a urinalysis	92.4	4.1	0.6	3.0
To utilise pulse oximetry	81.9	4.7	2.9	10.5
To perform a blood glucose measurement	73.1	17.5	0.6	8.8
To administer paracetamol to a febrile child	71.4	13.6	7.9	12
To order an X-ray (for an isolated limb injury)	54.6	5.5	11.7	28.3
To perform a Plaster of Paris check	46.7	13.2	7.2	32.9
To administer oxygen therapy at triage	43.8	10.7	4.1	41.4
To initiate oral re-hydration therapy in a child	54.1	22.6	11.3	12
To administer nebulised medication	33.9	10.9	7.3	47.9
To initiate an electrocardiograph	30.2	13.6	4.7	51.4
To collect venous blood for laboratory studies	27.6	19.2	12.2	41.0
To initiate intravenous cannulation	24.3	7.0	8.9	59.7

Key
 Frequent = several times per shift, once per shift, once per week
 Infrequent = once per month, once per year
 Never = the decision is never made
 No resource/not permitted = decision cannot be made due to resource limitations or nurses are not permitted to make the decision.

Levels of autonomy

Of the nurses surveyed, 47.3% made the mandatory decision to allocate a triage code based on their own assessment in all cases, 7% were directed by protocols or guidelines in all cases, and 45.6% made the decision to allocate a triage code based upon a combination of their own assessment, with some specified chief complaints directed by protocols or guidelines. In Table 4 the level of autonomy for decisions linked with the primary triage role are presented.

Analysis of nurses' reported levels of autonomy for the secondary triage role revealed a greater degree of inter-respondent variability than the primary role. Table 5. outlines the level of autonomy for decisions linked with the secondary triage role.

Triage nurses' self-reported levels of autonomy were found to be significantly linked to increased frequency of decision-making in six of the decisions listed. The decisions shown in Table 6. are those which were significantly more likely to be made by nurses in the

Table 4. Triage nurses self-reported levels of autonomy for primary triage decisions (n=172)

Decision	Level of Autonomy			
	Own assessment %	Protocol Guideline %	Doctors' order %	No resource Not permitted %
To evaluate vital signs (either a complete set or a single parameter)	92.9	4.1	0	2.9
To splint an injured limb	91.7	7.1	0	1.2
To re-evaluate a patient in the waiting area	90.6	5.8	0.6	2.9
To refer a non-urgent (NTS 5) patient to a General Practitioner	61.0	14.0	1.2	23.8
To consult with an inpatient unit	63.9	13.9	15.0	7.2

Table 5. Triage nurses self-reported incidence of autonomy for secondary triage decisions (n=172)

Decision	Level of Autonomy			
	Own assessment %	Protocol Guideline %	Doctors' order %	No resource Not permitted %
To perform a urinalysis	90.1	4.7	0	5.3
To utilise pulse oximetry	87.1	2.4	0	10.5
To perform a blood glucose measurement	84.3	4.7	1.2	9.9
To administer paracetamol to a febrile child	34.8	25.5	32.6	8.1
To order an X-ray (for an isolated limb injury)	7.0	20.5	39.2	33.2
To perform a Plaster of Paris check	19.4	27.6	20.0	32.9
To administer oxygen therapy at triage	54.1	3.5	0.6	41.7
To initiate oral re-hydration therapy in a child	47.4	10.9	29.9	11.7
To administer nebulised medication	23.6	12.4	17.6	56.7
To initiate an electrocardiograph	41.3	3.6	3.0	52.0
To collect venous blood for laboratory studies	17.8	5.9	33.3	42.8
To initiate intravenous cannulation	27.9	5.3	4.8	61.9

Table 6. Triage nurses self-reported decision-making frequency significantly linked to level of autonomy

Decision Frequency	Level of Autonomy			χ^2	p
	Independent	Contingent	Totals		
To perform an electrocardiograph (n=79)					
Frequent	49	1	50	7.70	0.02*
Infrequent	20	2	22		
Never	5	2	7		
To perform a Plaster of Paris check (n=110)					
Frequent	65	12	77	30.78	<0.01*
Infrequent	14	7	21		
Never	1	11	12		
To collect venous blood for laboratory studies (n=70)					
Frequent	26	14	40	10.08	<0.01*
Infrequent	8	22	30		
To consult with an inpatient unit (n=149)					
Frequent	115	10	125	45.85	<0.01*
Infrequent	12	3	15		
Never	1	8	9		
To administer nebulised medication (n=86)					
Frequent	44	12	56	14.27	0.01*
Infrequent	14	4	18		
Never	3	9	12		
To administer paracetamol to a febrile child (n=130)					
Frequent	77	23	100	28.20	<0.01*
Infrequent	7	12	19		
Never	1	10	11		
To commence oral rehydration therapy for a child (n=102)					
Frequent	60	12	72	6.41	0.01*
Infrequent	18	12	30		

Note

*p<0.05 Chi Square

n=Nurses able to make the decision without direct medical supervision in the triage area guided by their own assessment, directed by protocol or guidelines or by obtaining a Doctors' order.

independent=decision made guided by own assessment or decision assisted by protocol or guideline

contingent=decision requires a Doctors order

independent group (able to make the decisions based upon their own assessment and/or by using protocols or guidelines), than those in the contingent group (able to make the decision by obtaining a doctor's order).

Frequency of triage nurses' decision-making and demographic characteristics

The decision to perform vital signs, perform a urinalysis and refer a non-urgent (NTS 5) patient to a general practitioner could not be subject to chi square analysis due to the skewed distribution of frequencies within the contingency table.

Nurses who worked in rural or remote areas reported increased participation in decision-making compared with nurses' working in metropolitan settings in three of the decisions listed. These included the decision to; collect blood for laboratory studies ($\chi^2=6.86$, $p=0.032$), insert an intravenous cannula ($\chi^2=9.31$, $p=0.009$) and perform an electrocardiograph ($\chi^2=8.58$, $p=0.003$).

Nurses' who worked in emergency departments which treated more than 30,000 patients annually reported increased participation in decision-making when compared with nurses working in departments treating 10,000-30,000 patients annually and those working in departments treating less than 10,000 patients annually for

two of the decisions listed. These included the decision to; administer paracetamol to a febrile child ($\chi^2=7.62$, $p=0.02$), and to splint an injured limb ($\chi^2=12.75$, $p=0.002$).

Four decisions were found to be significantly more likely to be made by nurses working in general emergency settings, than adult settings, and by nurses working in adult settings than in specialist emergency settings. These decisions included; the decision to perform a Plaster of Paris check ($\chi^2=12.65$, $p=0.013$), the decision to perform a blood glucose measurement ($\chi^2=13.75$, $p=0.001$), the decision to perform an electrocardiograph ($\chi^2=12.91$, $p=0.012$) and the decision to collect blood for laboratory studies ($\chi^2=9.33$, $p=0.009$).

Due to the small number of nurses working in private emergency departments (6.9%) no comparisons were made regarding these nurses' participation in decision-making compared to public sector nurses.

DISCUSSION

The most important feature of the survey results is the degree of variability identified in the level of education and training required for nurses to perform the triage role. Over half of the nurses who participated in this study worked in emergency departments that provided no specific unit-based triage education (Table 1). This research builds upon the work of Standen and Dilley (1998) who also identified inconsistency in the training of triage nurses working in Victorian public hospitals.

Notwithstanding this result, an important finding of the study was the number of triage nurses who reported frequent and independent participation in a range of complex diagnostic and management decisions. For example, decisions to commence oral rehydration therapy in a child (Table 2) and to order diagnostic tests such as x-rays (Table 3). Both of these decisions involve a considerable degree of risk at triage because they are made in the face of an undifferentiated illness or injury and are not informed by extensive physiological data. For example the triage nurses' decision to commence oral rehydration therapy in a child requires the nurse to not only diagnose dehydration, but to rule out surgical causes of gastrointestinal symptoms. Despite its complexity, this decision was reported to be independently made by over half of the nurses in the study (Table 5). A further example is the triage nurses' decision to order an X-ray for an isolated limb injury. Of the nurses surveyed, over one quarter reported independently making this decision in practice (Table 5). This diagnostic decision requires the nurse to; first, establish the provisional diagnosis of fracture, second, screen the patient regarding the potentially harmful effects of radiation and third, use radiological terminology to specify the nature and extent of x-rays required.

A further notable finding from this study was the frequency with which many of the nurses reported making the decision to refer a non-urgent patient to a general practitioner (Table 2). Of the nurses surveyed, over two thirds reported independently making this decision in practice (Table 4). In addition to the risks already discussed, this decision poses some specific legal risks for the triage nurse. George (1983) has suggested that an examination conducted in the triage environment may fall below acceptable nursing standards in terms of obtaining adequate clinical data on which to base a referral decision. Additionally, Gertz and Bucknall (1999) have identified no established convention within Australia regarding how information is communicated from the referring nurse to the receiving health care provider.

The risks taken by nurses in making these decisions is further compounded because they are made in an environment of limited resource, where time and available data regarding the patients condition may be limited or ambiguous (Gertz and Bucknall 1999). Phillips (1987) described such decisions in the context of critical care nursing as 'hot', because they frequently involve time constraints and often place the nurses' professional reputation and self-esteem 'on the line' (Bucknall 1996; Phillips 1987)

A further noteworthy finding of this study was the high level of conformity regarding nurses' participation in primary triage decisions and the considerable degree of variability regarding their participation in secondary decision-making. Primary triage decisions were uniformly reported by participants to be frequently made in practice (Table 2). This is possibly because primary decisions are largely diagnostic in nature and culminate in the mandatory allocation of a triage code. Similarly, nurses' decisions to refer a non-urgent patient to a general practitioner or conduct a reassessment also involved making a judgement regarding patient acuity. Importantly, primary decisions made by triage nurses appeared to require little in the way of equipment and resource. As a result, nurses' participation in these decisions was not found to be influenced by the environmental variables explored.

In contrast to the uniform participation reported for primary triage decision-making, this study identified a considerable level of variability in nurses' reported participation in secondary triage decisions (Table 3). Many secondary triage decisions require time, space and specific equipment. Indeed, a number of demographic, resource and organisational factors identified in this study appear to influence nurses' participation in the secondary triage role.

First, the significant associations identified between nurses' participation in decision-making related to secondary triage decisions and hospital location are likely to be the result of differences in the triage role in rural and

metropolitan locations. It is interesting to note that nearly one third of nurses working in rural or remote locations worked in departments without a designated triage nurse. The combination of decisions significantly more likely to be made by nurses working in rural and remote areas than those working in metropolitan emergency departments supports this argument. Decisions to perform an electrocardiograph, insert an intravenous cannula and collect blood for laboratory studies are usually related in combination with the assessment of chest pain. It is possible that nurses in rural and remote areas may be working as sole practitioners. These nurses may not only perform the triage role, but also provide ongoing emergency care. In metropolitan locations, the interface between the triage nurses' decision-making and further nursing assessment is likely to be structured to minimise the duration of time spent with the designated triage nurse. If a patient is judged to be of high acuity, rapid transfer into the emergency treatment area usually occurs.

Second, the significant associations identified in this study between increased participation in decision-making and the type of emergency service are likely to be due to a combination of resource factors, and differences relating to illness and injury patterns in children as well as the obvious behaviour differences. Decisions to collect blood for laboratory studies or glucose measurement, or to perform an electrocardiograph are less likely to be made on a child in the triage area because children generally require more time for procedures and usually involve the assistance of another nurse.

The significant association between nurses' self-reported levels of autonomy and increased participation in decision-making for six of the ten secondary decisions examined is not a surprising result (Table 6). The presence of protocols or guidelines may increase nurses' participation in decision-making because they provide organisational endorsement for nurses to initiate certain interventions.

Limitations

Participants may have under or over-estimated their participation in decision-making. Additionally, some of the issues raised around autonomy in this paper may relate to the nurses' view of what constitutes a triage decision. This may have influenced nurses' reports of their participation.

CONCLUSION

The findings of this research reveal that many triage nurses' work in organisations that provide no specific triage education. Despite this result, many of the nurses who took part in the current study reported frequent participation in a range of complex diagnostic, management and referral decisions. These findings

highlight the need for evaluation of existing practice guidelines and education programs.

The current study identified high levels of conformity related to nurses self-reported participation in the primary triage role. This result implies first, that primary triage decisions are closely linked to and/or inform mandatory code allocation and second, that the demographic and organisational characteristics of the task environment have little impact on the frequency with which nurses make primary triage decisions. These findings highlight the need for observational research into triage nurses' decision-making. Future studies should seek to explore contextual influences on nurses' decision-making in the natural environment.

The variability reported by the nurses in performing secondary triage decisions and, the significant associations identified between decision frequency, demographic characteristics of the triage service and levels of nurse autonomy, suggest that nurses' participation in the secondary triage role is influenced by both the physical and organisational structure of the task environment. In light of this finding, future research must also involve exploration of the effect of nurse-initiated interventions at triage and the impact of these interventions on patient outcomes.

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THE ROLE OF THE PSYCHIATRIC CONSULTATION-LIAISON NURSE IN THE GENERAL HOSPITAL

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ABSTRACT

The mainstreaming of psychiatric services has increased the amount of contact nurses have with clients experiencing mental health problems within the general hospital environment. A review of the literature suggests that general nurses find themselves lacking in the skills, confidence and knowledge to care adequately for these patients. The aim of this paper is to discuss the potential contribution of the psychiatric consultation-liaison nurse in addressing such problems in order to improve health outcomes for patients experiencing mental health problems. While a number of positions for Psychiatric Consultation-Liaison Nurses are being created throughout Australia, there is a paucity of literature relating to the development of this important role. This paper is intended to contribute to the advancement of a body of knowledge in this area.

INTRODUCTION

The launch of the National Mental Health Policy (Australian Health Ministers 1992) provided the stimulus for fundamental changes to psychiatric services delivery within the Australian health system. Central to these reforms is the concept of mainstreaming. Mainstreaming refers to the shift from traditional psychiatric institutions as the basis of care for people with mental health problems to the integration and co-location of these services into the mainstream general health system. It is envisaged that by reducing the isolation and stand-alone nature of psychiatric services, clients will have increased access to quality general health care services (Australian Health Ministers 1992). As a direct consequence of mainstreaming, a larger number of clients experiencing mental health problems are now being cared for within the general hospital environment. The Psychiatric Consultation-Liaison Nurse (PCLN) has a crucial role in providing knowledge, enhancing skills and being supportive of nurses providing care for these clients.

This paper will examine some of the problems incurred in the realisation of the goals of the National Mental Health Policy (Australian Health Ministers 1992), with particular focus upon nursing care issues. The discussion will include; the incidence of mental health problems among general hospital patients; the ability and confidence of nurses in general hospitals to provide for this client population; the concept of consultation-liaison (C-L) psychiatry; the role of the Psychiatric Consultation-Liaison Nurse (PCLN) and the importance of this role for improved health outcomes for patients.

MENTAL HEALTH PROBLEMS IN THE GENERAL HOSPITAL

An implication arising from mainstreaming is that general hospitals are having more contact with psychiatric services and their clients. This places a responsibility on general hospitals to ensure that their services are accessible and responsive to this group of patients and that staff are equipped with the knowledge and skills needed to provide quality care that meets their needs. The Australian health system also needs to ensure that people with mental health problems are not subjected to the stigma and other forms of discrimination associated with service delivery prior to mainstreaming.

While mainstreaming may have increased the frequency, contact with patients with mental health problems is not a new phenomenon for general hospitals. Indeed, physical and mental health problems can occur in general hospital patients (Mayou and Sharpe 1991) according to whether they:

1. occur simultaneously, either co-existing by chance or being precipitated by a common cause such as a major life event;
2. are a complication of a physical problem; or
3. are the cause of a physical problem.

Grouping mental health problems in this way is helpful but does not provide a clear definition of a mental health problem. The presence of a diagnosed psychiatric disorder can be considered a defining characteristic of a mental health problem. However, this definition is limiting as there are patients who present with psychological problems who are considered likely to benefit from some form of psychological intervention, but whose symptoms are not severe enough or cannot be classified neatly into current psychiatric diagnostic categories (Mayou and Sharpe 1991). Sub-clinical depression or severe anxiety in response to physical illness, behavioural disturbance such as aggression, and treatment difficulties such as poor compliance are a few clinical examples that demonstrate this issue. The absence of a definition of mental health problem means that accurately determining the incidence of mental health problems in general hospital patients has been difficult. Results vary depending on the definitions of mental health problem used and the population examined (Mayou and Sharpe 1991). Nevertheless, a number of studies demonstrate that a significant percentage of patients in general health care settings experience mental health problems.

In the general hospital setting, patients with physical illness have been found to have higher rates of psychiatric disorder than the general community (Gelder et al 1996). It has been reported that approximately 25% of the general population are likely to suffer from emotional or psychological disturbance and that approximately a further 15% suffer from a diagnosed psychiatric disorder

(Mental Health Consumer Outcomes Task Force 1991). Clarke et al (1991) examined a sample of medical and surgical admissions to a major metropolitan teaching hospital in Melbourne and estimated that 30% of their sample of patients had 'significant psychiatric morbidity that warranted attention' (primarily depression and anxiety). Gomez (in Tunmore 1997) suggests the prevalence of psychiatric morbidity is between 30% and 65% in medical inpatients.

The nature of psychiatric morbidity varies. Affective and adjustment disorders are common in the elderly and alcohol problems more common in young men admitted for medical care (Gelder et al 1996). Organic mental disorders are more frequent in geriatric units and alcohol problems more frequent in liver units (Mayou and Hawton 1986). Up to 45% of new referrals to outpatients clinics for physical treatment have no diagnosis ascribed that can explain the patients' physical symptoms. While a proportion of these patients eventually have a physical diagnosis made, the remainder are likely to have a psychological explanation made of their symptoms (Mayou and Hawton 1986). Presentations to general hospitals for treatment of deliberate self-poisoning account for approximately 10% of medical admissions in Australia (Henderson et al 1993). Patients who attempt suicide constitute 3-5% of all admissions to major intensive care units in Melbourne (Bailey 1998).

ARE NURSES IN GENERAL HOSPITALS EQUIPPED TO PROVIDE CARE FOR CLIENTS WITH MENTAL HEALTH PROBLEMS?

The role of nurses in the recognition of mental health problems and subsequent care of the patient is undoubtedly significant. As the largest professional health care group that provides the greatest amount of direct and indirect care to patients, their contribution to the provision of optimal care is enormous. However, local research evidence indicates that the problems and needs of people with mental health problems are poorly assessed and understood by nurses. Critical care nurses studied in Melbourne indicated that they believed they were poorly prepared to care for patients with mental health problems (Bailey 1998). General nurses indicated that they did not enjoy caring for people with eating disorders, schizophrenia or those who deliberately self-harmed as a result of a mental health problem (Fleming and Szmukler 1992).

Emergency nurses have also been found to question their role in caring for patients with mental health problems and it has been claimed that they do not see it as part of their 'real' work (Gillette et al 1996). A lack of resources and difficulty accessing psychiatric expertise has also been identified as compounding nurses' ability to meet the mental health needs of patients who present to the emergency department (Gillette et al 1996) and the intensive care unit (Bailey 1998). Feelings of fear and

powerlessness and an acknowledgment of the increased length of time required to care for people with mental health problems frequently resulted in these nurses avoiding patients with mental health problems (Gillette et al 1996).

The nature of the mental health problems themselves further perpetuates this situation. Patients with mental health problems admitted to a general hospital may engage in behaviour that is not in keeping with the 'sick role', consequently they are likely to be stereotyped and negatively labelled. Negative labelling results in adverse consequences for the patient including perpetuation of problem behaviours and the occasional application of extreme measures to control such behaviour (Trexler 1996).

It is important to clarify that the existing research studies have examined discrete areas of interest such as nurses' experiences with particular disorders or sets of symptoms (Bailey 1998, 1994; Fleming and Szumukler 1992) or specific settings (Bailey 1998; Gillette et al 1996; Bailey 1994). There are no studies that have examined the subjective experience of caring for people with mental health problems in the general health care setting, from the perspective of those nurses who provide the care. Although one might expect to find similarities, such research should be conducted as a matter of urgency.

The existence of negative attitudes towards patients with mental health problems among general hospital nursing staff is problematic for a profession which champions holism as a central tenet to guide and direct its philosophy and practice. Holistic care is the facilitation of health collaboratively with the patient, considering the physical, psychological, social, spiritual and cultural domains (Newbeck 1986; Blattner 1981). It acknowledges the interdependence of the mind, the body and the spirit. In contrast to this it is suggested that nurses working in general hospitals primarily focus on physical care and tasks and feel less skilled to attend to the psycho-social needs of their patients (Gillette and Bucknell 1996; Swan and MacVicar 1990; Whitehead and Mayou 1989; Wilson-Barnett 1978). Nurses working in a general hospital may therefore find it challenging and difficult when faced with patients who require input that is not physical in nature. While such negativity continues, the goals of the National Mental Health Policy (1992) will not be able to be fully realised.

The changes to nursing registration contained in the Victorian Nurses Act (1993) were substantially influenced by a commitment to the principles of holistic care. Comprehensive undergraduate nursing education, which had already been adopted in most other States of Australia, was long considered the vehicle through which graduates of nursing programs would emerge as skilled in psychosocial as well as physical care. The graduate of the comprehensive program was envisaged to be sufficiently

skilled to function at the level of beginning practice in all health care areas, including psychiatry (College of Nursing Australia et al 1989). It might therefore be expected that as more graduates emerge from these programs they will be sufficiently skilled and knowledgeable to provide such care in a competent and non-judgemental manner.

An examination of the changes made to the psychiatric nursing component of undergraduate nursing curricula throughout Victoria following the introduction of the Nurses Act (1993) would, however, shed significant doubt on such a view. A review of curricula throughout Victoria (Happell 1998) indicates that the majority of Victorian universities did not alter the psychiatric component of the programs at all following legislative change. It is clear that future comprehensive nurses would have substantial variation in the amount of exposure to the theory and practice of psychiatric nursing encountered during their undergraduate program. The review by Happell (1998) revealed the compulsory component of psychiatric nursing to be between 0 and 17.4% of total curriculum hours, with the large majority of programs being below the 10% mark. It is therefore not possible to be confident that these graduates will be sufficiently skilled, knowledgeable and confident to provide holistic nursing care to clients experiencing mental health problems across a broad range of health care settings.

CONSULTATION-LIAISON PSYCHIATRY DEFINED

The problem of knowledge deficit is, of course, not unique to nursing. The development of Consultation-Liaison (C-L) Psychiatry was a direct response to the acknowledgment of the deficits of general health care professionals in providing care to clients with mental health problems within the general health care system. C-L psychiatry was defined by the Department of Health and Community Services (now the department of Human Services as):

...a service provided to patients who are admitted to a general hospital for a non-psychiatric condition, but who may exhibit symptoms of a psychiatric condition and whose case may be enhanced by the expertise of health workers with mental health care training. This service is provided either through direct consultation with the patient, or indirectly, through support, education and advice to other health professional responsible for the care and treatment of the patient (Dept of Health and Community Service 1996, p9).

In keeping with Victorian Government policy directions (Dept of Health and Community Service 1996) the delivery of C-L services via multi-disciplinary teams and in particular the inclusion of nurses, is advocated (Dept of Health and Community Service 1996). This presents a stark contrast to a 1991/1992 survey of Australian and New Zealand teaching hospitals which

found that 77% of the C-L psychiatry staff were medical, with varying degrees of input from nurses, psychologists, social workers and occupational therapists (Smith et al 1994). C-L Psychiatry teams in Victoria have tended to remain medically dominated with psychiatric registrars forming the 'backbone' of the service (Dept of Health and Community Service 1996).

PSYCHIATRIC CONSULTATION-LIAISON NURSING

In relation to psychiatric nursing practice, the development of this sub-specialty originated in North America in the 1960s and was influenced by moves toward holistic and patient-centred nursing care (Robinson 1982). To varying degrees, nurses in Australia are establishing themselves as a key component of C-L Psychiatry teams (Smith et al 1994), albeit after their North American (Robinson 1991) and British colleagues (Tunmore 1997).

The inclusion of psychiatric nurses as part of the C-L team is crucial. The North American experience demonstrates that nurses contribute to the team in a way that is significantly different but complementary, to the medical staff (Robinson 1987). While the C-L psychiatrist is primarily called upon to give an opinion in cases of 'diagnosis uncertainty', C-L nurses are more likely to be asked to assist with patients suffering depression, anxiety or displaying a disturbance in behaviour. In keeping with the medical model, psychiatrists focus on assessment, diagnosis and treatment; they rarely suggest nursing care or provide other forms of support to nursing staff. On the other hand, nurses who are appropriately skilled, knowledgeable and experienced are able to provide such knowledge, advice and support from a specifically nursing perspective.

The PCLN assists the primary care nurses to develop a plan of care that may or may not include the PCLN working directly with the patient (Robinson 1987). The focus is on guiding and supporting the primary care team by providing information, assistance and education (Robinson 1982; Tunmore 1990a; 1990b). The PCLN endeavours to strengthen the teams' existing skills in mental health nursing as well as facilitate the development of new skills. However, the objective of the medical and nursing staff is mutual, that of improved patient care (Robinson 1987).

C-L psychiatry is based on an understanding of human beings from a biopsychosocial perspective and an understanding that diagnosis, treatment and prevention of illness incorporates these domains (Smith 1993). Utilising the consultation process, C-L psychiatry teams apply their specialist skills in psychiatry and mental health to assist general health care teams in the provision of mental health care to their patients. Commonly, C-L teams are based within general hospitals and provide consultations to general or specialist medical and surgical teams (Lipowski 1991).

The PCLN provides consultation primarily (but not exclusively) to nurses working in general health care settings. The PCLN may work directly with patients and their families in providing mental health nursing assessment and intervention (Robinson 1987). However, the PCLN works more often with nursing staff, assisting them to develop a care plan that incorporates mental health concepts in order to meet the needs of patients. The PCLN acts as a resource to the staff on mental health issues, provides supportive formal and informal education and acts as a link between general and mental health services. The PCLN also works with general health care nursing staff in the development of policies and processes in relation to mental health issues (Tunmore 1997). Because the PCLN works closely with the nursing staff, s/he is particularly interested in the reactions that nurses have to patients with mental health problems and how these reactions effect the relationship between the patient and nursing staff (Tunmore 1997).

IMPROVED OUTCOMES FOR PATIENTS WITH MENTAL HEALTH PROBLEMS

The key in determining the value or otherwise of PCLNs primarily concerns whether or not assistance with patient care provided to general hospital staff by the C-L team makes any difference to the quality of care delivered. In the terms of our current environment, improved quality of care means shorter length of stay, decreased readmission rates, decreased morbidity and mortality and improved patient satisfaction. While the literature indicates that this has been notoriously difficult to demonstrate, some inroads are being made (Fleming and Szmukler 1992; Strain et al 1991; Schubert et al 1989; Fulop et al 1987; Mumford and Schlesinger 1987; Pincus 1984; Levitan and Kornfield 1981). These studies primarily demonstrate a decrease in length of stay and the associated costs with C-L intervention.

However, as Mumford and Schlesinger caution:

Although cost benefits may be realized through the operation of a C-L psychiatry service, such quantifiable benefits represent only one yield of the service and should not eclipse the value of relieved suffering, expansion of skills and competencies in students and residents, or the acquisition of new knowledge. A financial orientation should not constitute the sole rationale for such a service. (1987, p.360)

Effectiveness of PCLN interventions and the impact of the role on quality of patient care have been largely anecdotal. One study estimated that cost savings of \$65,000 were achieved by a PCLN over an 8-month period through the provision of family therapy to 10 families in a 250-bed community hospital in Connecticut, USA (Ragaisis 1996). In a qualitative study, Roberts (1998) interviewed the nursing staff of a haematology

ward in Britain where PCLN services were provided on a regular basis. The nurses valued the PCLN's availability and accessibility and appreciated the specialised expertise and skills in counselling that the PCLN offered. Assessment of patients' reactions to illness, input into managing mental health problems of patients, facilitating skill development in the nursing staff and assisting nurses in development of the nurse-patient relationship were specifically identified as significant contributions made by the PCLN. Similar themes emerged from a consultee (primarily nursing staff) satisfaction survey conducted over a three-month period on 75 requests for consultation by a PCLN in a general hospital. Accessibility and responsiveness were again identified as highly valued aspects of the service and, in addition, the assistance provided by the PCLN in the development of patient care plans was appreciated. The staff gave particularly positive feedback for referrals where the PCLN was involved as a primary therapist in the care of the patient and his/her family (Newton and Wilson 1990).

Unfortunately there has been little attempt to evaluate the potential role of the PCLN in Australia. One exception to this has been a significant and recent research project undertaken by Victorian nurses, the 'Evaluation of Psychiatric Nurse Consultancy (PNCC) in Emergency Departments Project' (Gillette et al 1996). This project placed two skilled psychiatric nurses in the Emergency Departments of two public hospitals in Melbourne. The nurses undertook a consultancy role similar to the PCLN role. This report demonstrated a number of positive outcomes including decreased length of stay for mental health consumers in the Emergency Department. Most notable was an increased satisfaction with care on the part of clients, some evidence that aggression was managed more effectively and an increased confidence in the nursing staff when working with clients with mental health needs. It is important to note that a number of Emergency Departments in Victoria have psychiatric nurses providing consultancy services similar to the service developed in this project. The PNCC project is an example where the work of psychiatric nurses is shown to contribute in a positive way to the care of general hospital patients.

In order to evaluate the input psychiatric nurses as consultants can have on the care of patients with mental health problems in non-psychiatric settings, similar studies to the PNCC Project need to be undertaken. Documentation of Australian and New Zealand experiences of psychiatric nurse consultancy within the literature in this area is sparse even though it is known to the authors that there are a number of nurses working in this area across these countries. Although it makes sense that this type of consultancy can contribute in a positive way to health outcomes, evaluation studies from the perspective of patients, relatives and staff must be undertaken as a matter of urgency.

CONCLUSION

Psychiatric nurse consultancy is a developing area for psychiatric nursing. The role of the Psychiatric Consultation-Liaison Nurse is one that offers psychiatric nurses an opportunity within the general hospital setting to improve the quality of attention to the psychological and psychiatric needs of patients (Tunmore 1990b). The mainstreaming of psychiatric services within the general health care system has increased the need for nurses to be equipped with the skills and knowledge required to provide optimum care to clients experiencing mental health problems. Research findings, although limited, suggest that nurses do not consider themselves sufficiently prepared to provide care to this clientele. The role of the PCLN therefore has the potential to assist the staff in general hospital in contributing to care in a manner that is consistent with National Mental Health Policy (Australian Health Ministers 1992).

Consultation Liaison Psychiatry is, to some degree, an established sub-specialty of psychiatry. Nurses are beginning to join their medical colleagues but the development of the PCLN role, particularly in Australia, is in its infancy. The skills and knowledge that psychiatric nurses have to offer the C-L Psychiatry service differ from those of their medical colleagues but are complementary. Given that nurses form the greater percentage of general hospital staff, psychiatric nurses are well placed to assist their nursing colleagues in the care of patients with mental health problems. Preliminary evidence demonstrates that this input can have a significant influence on the quality of health outcomes for patients. Further local research and documentation within the literature needs to occur so that meaningful debate and role development can occur within Australia.

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RELAXATION: A NURSING THERAPY TO HELP RELIEVE CARDIAC CHEST PAIN

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ABSTRACT

The experience of cardiac chest pain is always traumatic and stressful for patients. The available literature suggests that although nurses place a lot of importance on cardiac patients being pain free, it is apparent this is often not achieved. Research and documented case studies suggest that relaxation can play an important role in the treatment and prevention of this distressing symptom (Tiernan 1994; Altice and Jamison 1989; Guzzetta 1989). Nurses caring for patients with chest pain need to look beyond medical management and begin to challenge nursing practice to help patients deal effectively with chest pain in a way that meets each individual's needs. This article discusses ways in which relaxation, when used as an adjunct to medical therapies, can be a useful nursing management tool for effectively relieving cardiac pain.

INTRODUCTION

Imagine a pain in your chest so severe that you feel as if you are going to die. It is difficult to breathe, you are terrified, feel out of control and anxious. Chest pain is the initial symptom of many life threatening disease processes, such as myocardial infarction, pulmonary embolism, and aortic aneurysm. It is a warning sign of actual or potential injury to a structure within the thoracic cavity (Falloon and Roques 1997). Chest pain is a devastating symptom can have a permanent impact on the patient's life, including negative psychological effect which is on the sufferer. On a cognitive level the patient's perception of pain is of critical importance. Pain isolates coronary patients because it limits their normal activities of daily living, causing fear of routine tasks, potentially decreasing confidence and self-esteem. It can disrupt thought and overwhelm the sufferer (O'Conner 1995). It is suggested that the rapid relief of cardiac chest pain can help to minimise or alleviate its impact, reducing fear and anxiety (Lappin 1998). The reduction of fear and anxiety can also aid in the reduction of cardiac chest pain and it is suggested that this can be achieved through interventions such as relaxation (Miller and Perry 1990).

Although many nurses may regard medical treatments as the immediate or usual method of relieving pain, interventions for chest pain should not be limited to pharmacology. A broad range of nursing interventions such as relaxation techniques, verbal and non-verbal reassurance, distraction, repositioning, and enhancement of the placebo effect through the use of positive statements, may assist with the relief of pain (Altice and Jamison 1989). It is extremely important that the patient is accurately and promptly assessed prior to the commencement of relaxation therapy, so that the patient can be provided with accurate, rapid and appropriate medical treatment for the underlying cause of the pain (Thompson 1989).

This article discusses the benefits of relaxation therapy and specific relaxation strategies in chest pain management. Relaxation is defined by Guzzetta and Dossey (1992, p100) as 'the absence of physical, mental,

and emotional tension', and by McCaffery et al (1994, p168) as 'a state of relative freedom from both anxiety and skeletal muscle tension, a quietening or calming of the mind and muscles'.

LITERATURE REVIEW

There is a significant amount of literature relating to the medical and nursing assessment, differentiation, and treatment of chest pain. Jacavone and Dostal (1992) found that nurses placed considerable importance on relieving patients' chest pain, thus partially or totally relieving the causative ischaemic process. They also identified that nurses were taught that relief of a patient's chest pain was extremely important and should be one of the aims of care. Nurses then shared this knowledge with their patients. Available literature suggests that despite the apparent importance of relieving pain it is often inadequately reported or treated.

Many studies have documented the issues associated with accurate interpretation of patient's chest pain and the effectiveness of nursing and medical interventions. Thompson et al (1993) compared the interpretation of pain intensity between patients and the nurses caring for them. These authors found that pain interpretation was quite similar, but nursing management of pain was often inconsistent and inadequate. O'Conner (1995) studied patients' and nurses' ratings of chest pain, and discovered that nurses underestimated pain severity in up to forty percent of cases, especially if the pain was severe.

Willett (1989) suggests that under-treatment of chest pain is related to nurses' misconceptions about addiction, poor knowledge of drug action and duration, and fear of respiratory depression. Eighty percent of the cardiac patients in Willett's survey said their pain never really disappeared during their stay in the Coronary Care Unit (CCU), and forty percent of patients said anxiety about their condition increased because of the chest pain.

Schwartz and Keller (1993) examined the experience and reporting of chest pain. The patients who participated in this study experienced uncertainty in response to chest pain and expected to have some continued pain. Ruston (1998) looked at experiences of myocardial infarction and the actions patients took as a response to their experiences. They found delays in patients' reporting of pain were influenced by the idea that some continued chest pain was normal and expected; a belief that health care professionals were somehow able to detect pain; and the feelings of uncertainty that accompanied the pain experience. Mackintosh (1994) and Rowe (1996) identified that poor communication between doctors, nurses and patients can result in patients delaying the reporting of chest pain.

Miller et al (1998) suggest that patients who are able to communicate appreciate health care professionals who spend time with them, are attentive and listen. Caunt (1992) suggested that other variables which influence the management of pain include having a calm restful environment; the teaching of relaxation; the ability of patients to carry out a relaxation method; the ability to understand the reason for the pain and the importance of reporting pain.

The Lifestyle Heart Trial investigated whether mobile patients with existing cardiac conditions could be motivated to make comprehensive lifestyle changes and whether or not these changes would result in a reduction of coronary atherosclerosis. The results of this trial suggested a correlation between comprehensive lifestyle changes and a reduction in coronary atherosclerosis. The lifestyle changes included stress management such as stretching, progressive relaxation, breathing exercises, meditation and visualisation (Ornish et al 1998; Ornish 1991). These results indicate that relaxation may play an important role in the treatment and prevention of coronary atherosclerosis.

Holden (1992) demonstrated the application of psychological approaches to pain management by using relaxation, breathing exercises and taped sounds to help a seriously ill patient cope with anxiety attacks. Guzzetta (1989) discovered relaxation and music therapy reduced stress and lowered the incidence of cardiac complications in patients with a presumptive diagnosis of myocardial infarction. Miller and Perry (1990) found that deep breathing relaxation techniques used in postoperative coronary bypass patients resulted in significant decreases in blood pressure, pulse rate, and respiratory rate. From the available literature it is apparent that nurses need to find effective ways of encouraging the reporting of chest pain and of assisting the patient to gain adequate relief of the pain.

DISCUSSION

Consider a situation where a few days after a patient suffers a heart attack the pain returns to the patient's chest and left arm. The patient rings the call bell to get help. The nurse arrives and on assessment finds that the patient has chest pain rated at seven out of ten on a pain scale and appears anxious. The nurse commences cardiac monitoring, performs an electrocardiograph (ECG), and gives the patient some nitrolingual spray and a Diazepam tablet then leaves the patient alone with their pain. Although the medical management and pharmacological treatment of chest pain is of critical importance, there are nursing measures that can be used to complement medical treatments. With accurate assessment and recognition of anxiety these nursing measures can result in more rapid,

effective pain relief and an associated reduction in the need for anti-anxiety drugs.

Cardiac chest pain usually occurs as a result of the oxygen demand of the heart muscle exceeding the oxygen supply due to decreased coronary circulation. It is a recognised symptom of coronary artery disease or coronary artery spasm. Cardiovascular disease or systemic illnesses, which result in an inability to increase myocardial oxygen supply to meet demand, may also cause chest pain. Medical management of this pain usually involves the use of nitrates to dilate the coronary arteries, and narcotics to reduce pain and decrease myocardial oxygen demand (Isselbacher et al 1994; Guzzetta and Dossey 1992).

Episodes of acute pain are often accompanied by some degree of fear, anxiety or depression. The presence of these emotional reactions increases the body's sympathetic responses by raising levels of endogenous catecholamines, noradrenalin, and norepinephrine, causing an increase in myocardial oxygen demand, increased ischaemic pain, and possibly an increase in arrhythmias. It is generally thought that the greater the person's anxiety the greater their experience of pain will be (Pedley 1996; Mackintosh 1994; Thompson 1989; Benson 1975).

The patient's perception of chest pain is of great importance. It affects how the patient copes with the pain and how relief is obtained, and for this reason a psychological approach to pain relief may be useful (Lappin 1998). Such approaches to pain management attempt to alter the patient's perception of pain and provide alternative behaviour patterns for dealing with that pain (Cornock 1996).

The relaxation response has been documented as a way of reducing pain. According to Benson et al (1974 p37) 'the relaxation response appears to be an integrated hypothalamic response resulting in a generalised decrease in sympathetic nervous system activity' and possibly an increase in parasympathetic activity. Oxygen consumption decreases and both pulse and respiration rates have also been found to decrease. Benson (1982; Benson et al 1977) suggest that the relaxation response may be of preventative and therapeutic value when treating illnesses which are exacerbated by prolonged stress, for example hypertension. It is possible to elicit the relaxation response through a variety of relaxation techniques (Benson 1982).

Relaxation may be considered a nursing therapy which has been found to decrease anxiety and enhance pain relief and that can be applied in almost any setting (Pedley 1996; Altice and Jamison 1989). Factors that affect the individual's ability to participate in relaxation therapy include age, health state, fear, medication, belief systems, cultural factors and willingness to participate (McCaffery et al 1994; Guzzetta and Dossey 1992).

Relaxation offers potential benefit for people in pain because of the relationship between muscle tension, pain and anxiety. Relaxation skills allow the individual to focus inward, evoke inner calm, and control awareness and linear time. It is an acquired skill that needs to be taught prior to episodes of pain to be effective (Guzzetta and Dossey 1992). This can be achieved within a coronary care ward by providing regular relaxation sessions. The ward in which the author worked achieved this by conducting an optional relaxation session every Wednesday afternoon during the normal patient rest period.

Relaxation therapy has been shown to offer a variety of benefits including; aiding sleep; strengthening the nurse-patient relationship; improving problem-solving; minimising the detrimental effects of continued or repeated episodes of pain; reducing pain; increasing confidence and decreasing fatigue. It may provide distraction from pain and increase the effectiveness of other pain relief measures. Relaxation may help to make pain more tolerable and decrease fear or distress (McCaffery et al 1994). It is important to note that relaxation therapy is not a substitute for cardiac assessment or medical interventions but may be a useful adjunct in the management of cardiac pain.

Teaching relaxation

Before teaching relaxation it is important that the patient is assessed for readiness to learn. Relaxation techniques require patient cooperation and participation therefore it is important that the patient understands how and why relaxation would benefit them (Pedley 1996; Tiernan 1994). They should choose the method or strategy of relaxation with which they feel most comfortable. Once the patient's willingness to learn has been established and a relaxation strategy chosen, a quiet and comfortable environment should be arranged (Guzzetta and Dossey 1992).

Guzzetta and Dossey (1992) suggest that strategies for teaching relaxation should include; breathing exercises; repetition of autogenic phrases; progressive muscle relaxation; and body scanning. Relaxation imagery is also a useful relaxation method. Imagery is defined by Tiernan (1994 p48) as 'the perception of a mental representation of reality'. Using images the patient is able to respond to unconscious physiologic processes. Guided imagery can be useful and usually follows the relaxation exercise (Carroll and Bowsher 1995; Guzzetta and Dossey 1992).

Other useful relaxation strategies include biofeedback, the use of prayer, meditation, drawing images, listening to music and the invoking of the relaxation response through passive concentration and the slow repetition of a single word on exhalation for 15 to 20 minutes (Cornock 1996; Carroll and Bowsher 1995; McCaffery et al 1994; Guzzetta and Dossey 1992; Guzzetta 1989).

A variety of relaxation imagery exercises can be used by patients with chest pain. It is important to check what the patient feels comfortable with and likes to do. There are many relaxation techniques that take varied amounts of time. The following technique is recommended by McCaffery et al (1994):

1. *Breathe in deeply and clench your fists*
2. *Breathe out and go as limp as a rag doll.*
3. *Start yawning.*

These steps should be repeated until the patient is relaxed.

(McCaffery 1994)

Music and relaxation tapes can also be useful in relaxation imagery. To incorporate this into the ward or unit environment it would be necessary to develop a tape library and have several cassette players with headphones. When using music as part of a relaxation strategy the patient and not the nurse should select the music (Guzzetta and Dossey 1992; McCaffery 1979).

The author has used both progressive muscle relaxation and relaxation imagery in her nursing practice to help relieve pain and anxiety among patients with acute episodes of chest pain. The author has found them to be effective in reducing fear and assisting with the relief of this pain. The author's experience indicates that most patients are willing to learn and try these techniques when the nurse is prepared to take the time to support them. Giving patients education in relaxation techniques provides them with skills they can use to reduce pain and give them some control over what is happening to them.

RECOMMENDATIONS

Patients suffering from cardiac chest pain occurring as a result of decreased oxygen supply to the heart muscle may benefit from the use of relaxation to elicit the relaxation response (Benson et al 1977). The Lifestyle Heart Trial research (Ornish 1991; Ornish et al 1998) also indicates that cardiac patients benefit from lifestyle changes that include the reduction of stress through the use of relaxation strategies.

To achieve this, nurses need to acquire the skills necessary to teach and facilitate relaxation and the knowledge of how relaxation strategies can be used to elicit the relaxation response. The author suggests that relaxation strategies should be taught to nurses at undergraduate level or during initial training, this occurs to some extent in some current nursing education programs but needs a more focused approach.

Patients should be taught and encouraged to practice relaxation techniques with which they feel comfortable. Regular relaxation sessions should be set up within the

coronary care ward at a time when the patients can attend these sessions without interruption. Patients should be informed of the benefits and encouraged to attend regularly so that they develop relaxation skills to use at home. More than one session per week would be beneficial. Further research into the effects of relaxation on relief and prevention of chest pain should be undertaken.

CONCLUSION

The available literature suggests that nurses need to look for ways to enhance pain relief for patients suffering from cardiac chest pain. Research related to both medical science and nursing science supports the use of relaxation as an adjunct to pain management. Although it may not be possible to use relaxation effectively on initial admission because relaxation techniques need to be learnt and practiced, relaxation has many potential benefits to the patient in pain.

Relaxation could be used as a tool to aid in the development of good communication patterns and trusting therapeutic relationships between the nurse and patient. Nurses need to have an understanding of relaxation strategies and their applications to be able to apply relaxation strategies as a means of reducing the pain and distress of cardiac patients. To achieve the goal of reducing cardiac patients' chest pain and associated anxiety all nursing staff in the coronary care area should learn, and be able to teach and facilitate, a variety of relaxation strategies.

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EVENTS AT HOME AND OVERSEAS

AUSTRALIA

SEPTEMBER 2000

September 25-27, 2000 - Adelaide

International Forensic Nursing Conference, *Every nurse is a forensic nurse at some time*, Inquiries: ph: +61 8 8201 5095, fax: +61 8276 1602, email: sonconf@flinders.edu.au

OCTOBER 2000

October 1-3, 2000 - Darwin

Fifty years of enrolled nursing: Our gold millennium, Inquiries: Kylie Mulhall ph: +61 8 8981 1875, email: convention.catalysts@norgate.com.au

October 3-7, 2000 - Canberra

35th Annual Conference of the Australian Psychological Society Ltd., *The brain games: The meeting of the minds*, Inquiries: ph: +61 (3) 9663 6166, fax: +61 (3) 9663 6177, email: confer@psychsociety.com.au Website: <http://www.psychsociety.com.au>

October 15-18, 2000 - Melbourne

13th Aged and Community Services Australia, National Conference & Trade Exhibition, *Ageing boldly 2000*, Inquiries: The Meeting Planners Pty Ltd, 108 Church St, Hawthorn VIC 3122, email: agedcare@meetingplanners.com.au

October 18-20, 2000 - Perth

Geriaction Inc. National Conference 2000, *Dare to age: Challenging the boundaries*, Inquiries: ph: +61 8 9332 2900, fax: +61 8 9332 2911, email: promaco@promaco.com.au

October 19, 2000 - Canberra

7th Australian and New Zealand Paediatric and Neonatal Intensive Care Conference, Inquiries: Conference Logistics, ph: +61 2 6281 6624, fax: +61 2 6285 1336, email: conference@conlog.com.au

October 19-22, 2000 - Canberra

25th Australian and New Zealand Annual Scientific Meeting on Intensive Care, Inquiries: Conference Logistics, ph: +61 2 6281 6624, fax: +61 2 6285 1336, email: conference@conlog.com.au Website: <http://www.anzicas.com.au/asm>

NOVEMBER 2000

November 1-4, 2000 - Melbourne

International Emergency Nurses Conference, Inquiries: +61 3 9820 9115, email: aaen2000@mcigroup.com Website: <http://mcigroup.com/emergnurse.htm>

November 21-23, 2000 - Melbourne

Aged care housing summit, Australia's fastest growing property development market, Inquiries: ph: +61 39529 4314, fax: +61 3 9510 4733

November 25-29 - Melbourne

4th World Stroke Conference, Inquiries: Conference Secretariat, ICMS, ph: +61 (3) 9682 0244, fax: +61 (3) 9682 0288

MARCH 2001

March 4-7, 2001 - Canberra

6th National Rural Health Conference, *Good health - Good country*, Inquiries: ph: +61 2 6285 4660, fax: +61 2 6285 4670, email: conference@ruralhealth.org.au

March 8-9, 2001 - Noosa, Queensland

1st Mater/Mercy National Nursing Conference, *Balancing care and costs*, Inquiries: ph: 1800 061 660, fax: +61 2 6282 3565, email: conf@rcna.org.au Website: www.rcna.org.au

MAY 2001

May 9-11, 2001 - Sydney

Royal College of Nursing, Australia National Convention 2001, Inquiries: 1800 061 660, fax: +61 2 6282 3565, email: conf@rcna.org.au Website: www.rcna.org.au

NOVEMBER 2001

November 14-16, 2001 - Sydney

4th International Neonatal Nursing Conference 2001, *Excellence knows no boundaries*, Inquiries: 1800 061 660, fax: +61 2 6282 3565, email: conf@rcna.org.au, Website: www.rcna.org.au

OVERSEAS

JUNE 2001

June 10-15, 2001 - Copenhagen

ICN 22nd Quadrennial Congress, *Nursing: A new era for action*, Call for papers, deadline for abstracts - June 1, 2000; Inquiries: ph: +45 4492 4492, fax: +45 4492 5050, email: icn@discongress.com

JUNE 2002

June 30-July 5, 2000 - Oslo, Norway

18th International Cancer Congress, *Sharing new knowledge strengthening the team*, Inquiries: ph: +41 22 809 18 70, fax: +41 22 809 18 74, email: congrex@congreg.ch