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THE AUSTRALIAN JOURNAL OF ADVANCED NURSING

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Health and the Global Financial Crisis

GUEST EDITORIAL

Gerardine (Ged) Kearney,

Federal Secretary
Australian Nursing Federation.

Dominating social comment at the moment is the Global Financial Crisis or the GFC. Its dominance is of course only natural. It is a crisis of significant proportions. In Australia, like other countries, thousands have lost their jobs. Unemployment it is predicted will reach eight percent and billions of dollars of savings have simply disappeared. Government policy here, in response is centred on stimulating the economy. They have done this in two ways, by giving people money, which they hope they will spend and by investing in public infrastructure hopefully creating and saving jobs while investing in important things like schools, hospitals and roads.

The jury is still out on whether or not this will be successful and soften the impact of the economic crisis. But I wanted to raise with you what the impact could be on health care, nursing and nurses. It has been said that health care and nursing are recession proof industries because health care will continue to be needed. Indeed given that health is directly related to social determinants such as adequate income and well being our services may well be in even higher demand with people out of work and general stress regarding welfare.

To an extent this is true. But the crisis is and will affect us. Governments are under pressure to make savings. Private health providers will be concerned about returns on investments. Aged care, already under pressure and underfunded may well find less funding coming its way. Nurses working in aged care, who, in Australia are paid considerably less than nurses working in other sectors might, due to financial pressure, have to leave the sector to ensure a more adequate income elsewhere. We are already hearing of state governments in this country who want to freeze public sector wages and even renege on agreements. There is great temptation to strip resources from the costly health budget and that is worrying.

As nurses and the largest workforce in health, we know that when governments or providers come looking for fat to cut in our hospitals, it usually comes from nursing. Unfortunately those areas that are seen as ‘fat’ are areas like research, education, or outreach programs like community liaison or public health care programs. They understandably leave as many clinicians at the bed side as they can, but if they had a little more vision and a better understanding of what makes a health society and what keeps people out of the hospital beds, we might actually emerge from this crisis with a healthier community and full coffers as well.

Cutting back on things like preventative health care programs, community outreach services etc ultimately will mean less healthy communities and a greater reliance on reactive health care which is expensive and just plainly poor social policy. Cutting back on educators and research means that we lose our most experienced nurses and often a commitment to quality and evidence gathering for effective proven health outcomes. Again, this means potentially more days spent in a hospital, more readmissions and sadly, a burnt out and disillusioned nursing workforce.

Health, as we know is a result of many factors. The social determinants of health are well documented and understood. But our health system in Australia is not one that has developed around those social determinants. Our system is medical centric, it is illness based, reactive and tertiary focused. It ignores everything we know about keeping communities healthy. Any attempts to move to the system are patchy, isolated and while usually very successful, not supported with adequate resources nor rolled out on a system scale. More than ever, in dire financial times, we need to focus on those things that keep us healthy, things like decent work, adequate housing, food, access to education and recreation, emotional support and social inclusion. Let's ask our communities what they need rather than paternalistically handing out services. Undoubtedly the way forward is to build a decent primary health care system. But to do so needs vision and a great deal of will. Nurses can lead the way in such reform and indeed in Australia and many other parts of the world nurses are doing just that. Nurses prefer to immerse themselves into communities. We are not prone to locking ourselves in offices behind desks, giving 15 minute blocks of care. We see whole communities, families, supportive groups and beyond.

I spoke to a nurse recently who works in a nurse led health care service in a regional town; a town that was struggling economically and whose people were having significant health problems including mental health deterioration. One of the main problems was the lack of an adequate sewerage system which caused, among other things, certain health problems. The nurses in the clinic successfully lobbied to get a decent sewerage system for their town. Not only did this improve health outcomes but made the town a more attractive place to live, increased the population and sustained the economy of their region! Now that is really dealing with health from a social determinant perspective.

So whilst it is important that in warding off the dire consequences of the GFC we create economic stimulus packages that invest in roads, houses and schools, we must not forget about investing in health – and that doesn't only mean simply building hospitals, far from it. It means investing in reform programs that transfer a reactive health system to a proactive one. At the moment Australia's health system pulls us out of deep water but doesn't stop us falling in. And right now we are teetering on the edge.

Health care should be viewed as an asset not a liability. It is like a long term investment that will mature and once the returns on that investment do mature, we will as a society reap the benefits with profits untold.

Living the experience of breast cancer treatment: The younger women‘s perspective

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KEY WORDS

young women, breast cancer, qualitative

ABSTRACT

Objective
To explore the experience of breast cancer for young women under fifty years of age and describe their personal experience of coping with breast cancer treatment.

Design
An interpretive qualitative design was used to explore the experience of breast cancer in a young women's life. A purposive sample of six women completed in-depth interviews. A thematic analysis of the transcripts generated several themes relating to their personal journey through breast cancer treatment.

Setting
The setting for this study was an oncology outpatient's setting in a large private hospital in Queensland, Australia.

Subjects
Six women aged between 28 and 45 years of age with a diagnosis of breast cancer in the last 12 months.

Results
Treatment for breast cancer began so quickly following diagnosis leaving little time to adjust to the concept of a life threatening disease. The severity of the effects from treatment influenced the women's sense of person and ability to care for family. Fatigue, nausea and early onset menopausal changes were particularly troubling. Women described a positive resolve to survive.

Conclusions
Treatment concerns for younger women are qualitatively different from those of older women. They consider they are too young to assume 'the sick role' and are not prepared for its sudden onset, neither are their support networks. The right kind of support can assist younger women and their families to cope during the early stages of diagnosis and intervention.

INTRODUCTION

Breast cancer is the most common cancer diagnosis for women worldwide (WHO 2006). The incidence for women under fifty years of age accounts for 25% of all breast cancer cases in Australia (AIHW 2008). However, the amount of research focused on this younger cohort is much less than that of older women only serving to limit understanding of the particular needs of younger women. This is problematic because being younger means women are more likely to be diagnosed with a biologically aggressive cancer and tend to need multimodal treatment, often influencing their physical and psychological adaptation (Sammarco 2001; Dixon and Hortobagyi 2000). Studies show compared to older women these women have a heightened concern with aspects related to body image change, fatigue and nausea (Sammarco 2001). The lack of understanding of this group's particular concerns and needs ultimately affects their health care experience.

An important dynamic relates to the developmental stage of life for these young women, this includes having family responsibilities and being premenopausal (Dunn and Stegina 2000). The combination of breast cancer treatment and demands of family life are noted to have significant physical and psychological sequelae (Parle et al 2001). The provision of information regarding treatment has been noted as particularly important for the younger aged family, especially information that can be discussed and understood later in the family environment (Nikoletti et al 2003). Concerns about understanding information may relate to the fact medical consultations are often attended by women without the support of a person close to them because that person is having to care for the couple's children. Alongside the everyday exigencies associated with this particular phase of life, the treatment regime immediately after diagnosis is noted to cause significant stress (Sammarco 2001). Young women are noted to go through a 'why me' phase early after diagnosis as the realisation of the severity of the illness becomes reality (Dunn and Steginga 2000). Specific concerns relate to the knowledge treatment will cause premature menopause and associated consequences. For example, loss of fertility, psychosocial problems and a number of menopausal symptoms (Del Mastro et al 2006). Clinically induced menopausal symptoms are recognised to be more severe for this age group (McCarthy et al 2007).

In summary, it is well known breast cancer is a devastating disease affecting women across the adult life span in ever increasing numbers. To date there has been a great deal of emphasis on the disease as it relates to women towards the upper end of the age range. What is less well known is how the disease affects women in earlier stages of life. The limited research that has been conducted points to very different kinds of concerns and on the whole a more difficult treatment course.

The aim of this study was to explore the perceptions of young women with breast cancer in relation to their early treatment trajectory and was designed to generate knowledge to improve health professionals' understanding of that experience.

METHOD

This study used a qualitative approach drawing on an interpretative theoretical perspective to explore breast cancer for the younger woman. Based on insights from feminist inquiry the researcher set out to identify and describe the experience through the telling/interpretation of women's own accounts (Emden 1998). These narratives have been analysed and synthesised into a meaningful (re)construction of the experience from which others can learn (Porter 1998).

The study gathered data through the use of in-depth interviews during which the researcher established rapport with the participants and actively encouraged them to speak without the constraints imposed by a series of set questions (Reinharz 1992). The women were asked to describe their experience/s of breast cancer from initial diagnosis. Descriptions of how they coped with treatment, their concerns about family and personal reflections of their journey were explored. The researcher asked broad ranging questions such as, 'tell me how you felt when you were first diagnosed, what is it like to be having treatment for breast cancer and tell me about a time when you felt particularly (un)able to cope?' The researcher's intent was to allow the women to control the flow of the interview (Glesne 1999) to gather data 'thick' with insightful description (Todres 2007).

SETTING AND PARTICIPANTS

The study drew on participants from a large private metropolitan hospital. The researcher provided information about the study during a young women's breast cancer information session, following which a call was made for potential participants. The study used a purposive sample - the inclusion criteria stipulated participants needed to be women less than 50 years of age and diagnosed with breast cancer in the last 12 months. The six eventual participants were all English speaking; their disease status varied and they experienced a range of different treatments.

DATA COLLECTION

Each participant was interviewed at a time of convenience in their own home. Interviews were tape recorded and later transcribed verbatim. In keeping with an in-depth interview technique the interviews lasted from 60 to 90 minutes depending on the participant. The interviewer was an experienced registered nurse not involved in providing care to the participants. A formal counselling service was available if needed.

Table 1: Demographic snap shot of participants

Age	Marital status	Children	Work Status	Treatment
Dawn 29yrs	Defacto	Nil	Full time	Mastectomy Chemotherapy Tamoxifen
Fay 33yrs	Married	5 years 2 years	Part time	Mastectomy Chemotherapy Radiotherapy Tamoxifen Breast reconstruction
Carrie 34yrs	Married	18 months old Pregnant when diagnosed	Home mother	Lumpectomy Radiotherapy after baby was born
Anne 40yrs	Married	11 years 8 years	Part time	Lumpectomy Mastectomy Chemotherapy Radiotherapy Tamoxifen
Pat 43yrs	Married	13 years 11 years	Part time	Lumpectomy Chemotherapy Radiotherapy Tamoxifen
Joan 43yrs	Married	15 years 13 years	Part time	Lumpectomy Chemotherapy Radiotherapy Tamoxifen

DATA ANALYSIS

The text from the transcribed interviews was analysed using recognised inductive qualitative techniques that comprised a multi-phased process of thematic analysis (Grbich 1999). The transcripts were read several times in an effort to gain a comprehensive understanding of the participants' experience/s. Each transcript was analysed for similarity/dissimilarity of issues and perceptions by the members of the research team. The data was then grouped into categories and common themes within each category through a consensus approach across the team. The categories were drawn from the women's words whenever possible as the analysis attempted to place the woman's description within the context of her life journey (Reinharz 1992). The participants viewed and verified their transcripts and the resultant themes to assure rigour (Grbich 1999).

ETHICAL CONSIDERATIONS

Ethical clearance was granted by the Human Research Ethics Committees of the participating University and private hospital. The National Health and Medical Research Council (NHMRC) Ethical Guidelines for Qualitative Research were adhered to throughout the study. To ensure privacy, participants were asked to choose a pseudonym.

FINDINGS

While several themes emerged from the data the themes presented in this paper relate specifically to diagnosis and early treatment:

1. Diagnosis as a state of disbelief and concern

The diagnosis of breast cancer for all the women was a shock; creating a sense of disbelief described as a period of 'why me?' during which participants grieved for life aspirations suddenly lost.

'I wasn't directly told I had cancer ... I was told I had a lot of abnormal cells ... not normal for someone of my age... that to me was the definitive moment - I knew then I had cancer' Dawn

Carrie who was pregnant at the time faced additional challenges as she attempted to cope with the surgery, worry about a forthcoming baby and care for her existing child. In relation to her treatment she said:

'...in 6 weeks I am going to have a brand new baby and I just want to get the treatment over and done with. I'm going to be tired anyway, I can't breast feed, I'm told not to breast feed ... so I just want to power on through it and put it behind me and basically just get on with life. ...I just think get it over and done with.' Carrie

The whirlwind speed at which the participants received treatment made life difficult for the women because five of them had child-rearing responsibilities. The women spoke of the needs of their children having to be considered at each step of the process. This was exacerbated by the lack of a lead-in time to adequately absorb the diagnosis and prepare themselves let alone the family for what was to come.

Another aspect of diagnosis and treatment was the need for clarity of information, the women explained they had trouble 'focusing' after receiving information and of different interpretations about what they had heard.

'...the minute he [specialist] told us the statistics and how little extra protection chemo [therapy] gave you our jaws just dropped. I don't think we heard another word after that. It was like; we are going to go through all that for another 15%? ... At home my interpretation and my husband's of what my treatment was going to be were different. Then we got out the notes the specialist had given us and it was different again' Pat

The women commented that nurses tried to help them understand but it was still difficult.

'They give you a little piece of paper and say "this is your drug and these are the side effects" ...and of course I copped every single one. So I think there's not enough information about what you are going to get from chemotherapy to really understand exactly what the symptoms will be' Fay

In these quickly moving early stages the women described having to deal with multiple stressors and of having no similar life or family experiences, with this degree of severity, from which to draw strength. The women described a sense of loss of control as they became 'caught up' in a system that dictated the terms. They described this time as "having to be intensely strong for the family".

'...close family members, including my mother, found it very difficult to accept [the diagnosis] and I found I was counselling them. ... that was really interesting because it really made you distance yourself a bit

more from it, to be able to cope with other people's grief' Dawn

2. Surrounded by family yet 'going it alone'

Even though they were surrounded by family, for much of the early treatment the women described an overwhelming sense of having to 'go it alone'. This was because of the desire to keep the family routine as 'normal' as possible during the treatment process.

'So here I am with ice packs taped all over me, again heading up to the hill (hospital), again by myself ... because John was home with the kids. God knows how it was for him' Pat

Pat talked of chemotherapy as a period of time when she existed by taking each day at a time suffering from mouth ulcers and becoming neutropenic and yet at the same time 'having to keep the family going'.

'We all thought I was going to die from the chemo[therapy] not from the cancer. I had such horrific, horrific mouth ulcers....Here was I a few months down the track going bald and I was starting to get that horrible chemo[therapy] emaciated look and all I could think of was that this wasn't really good for them to be seeing me like this.' Pat

The women talked of their hardship in trying to work out what each member of the family needed in order to help them cope while at the same time trying to cope themselves.

'...I got really angry ...because I thought, "damn it, this is a big deal for me, I need support too". But I didn't know what support I needed, I didn't actually know what I needed.' Dawn

Dealing with the actual treatment at the same time as having to help the family to cope, increased the difficulty in adjusting to the diagnosis and treatment. A mother of young girls talked of her distress when one child reacted to the breast cancer by stating she was afraid to 'grow' breasts and asked her mother 'because you've got it, will I get it too'? (Anne).

3. 'Ups and Downs', the treatment effect

Younger women are noted to experience greater physical and psychological difficulties resulting from the effects of aggressive treatment schedules (Partridge and Ruddy 2007). In this study the women's experience could be likened to an 'emotional rollercoaster' requiring enormous adjustment to the breast cancer treatment trajectory. The women described the effects of chemotherapy as something totally unexpected and frightening.

'I don't know whether more information would have helped or not or would just have made it more frightening. Even the terminology of "putting it [the chemotherapy] in" just made my stomach turn. ...I was not expecting the volume and I wasn't expecting the sensations of it going into my arm, into the muscle. I'm sure I could feel it going into my heart.' Pat

For the youngest woman the mastectomy scar on her body was perceived as an 'attack' on her femininity and the potential long term effects of the breast cancer treatment had life changing ramifications.

'...in one fell swoop I was told everything that was feminine about me was gone, I was losing my breast, I possibly couldn't have children. ... all of a sudden choices for the life I had planned were being taken away from me. When you see your mastectomy scars, they start under your arm and go right across your chest. There's no way you can hide that, it's there. ...every time you look in the mirror you are reminded you've had breast cancer.' Dawn

For Carrie the staff reinforced how young she was to have breast cancer.

'I wasn't treated differently in any other way. It was noted I was pregnant and that was it ...they'd have to send someone up from maternity to come and monitor the baby and it was always, "oh gosh so young!"' Carrie

Another aspect of the treatment period was accepting help; some of the women had their mother's help to keep the family going, also friends and neighbours provided support. Women often received unsolicited support:

'I got sick [after my chemotherapy] and all these people started seeing me looking ill and were asking questions; so we made the decision that we would

actually tell them. …We were quite open about it and we received the most amazing support …whether it was fruit and vegetables or cooked meals they had rosters done up it was just amazing and that was the biggest support we ever had and you would never have realised there were people like that out there.' Fay

Although it was not always easy for the women to accept help;

'It was especially hard for my husband he couldn't handle it at first and I just said to him we have to because if we don't we won't cope. …. I was totally bed ridden with my chemotherapy so we had to accept help' Fay

Although they were careful to point out it took a few months to feel 'normal' again, once the treatment was finished and the women began to feel better they described some positives in their lives. One of the underlying themes from all of the participants was that even though it was devastating to be diagnosed with breast cancer this was not the end of their lives and they were going to recover. While the breast cancer journey had become a very real part of their lives they tried not to let it take over. Pat said, '…the first time I stood on the beach after it was all over I just cried and cried. I definitely don't take anything for granted anymore'. Another said: 'It's great not to be sick anymore…. To get your hair back - It feels so good' (Anne).

DISCUSSION

The findings from this study substantiate the limited available research related to this particular research problem (Bloom et al 2004). A major issue for the women was the lack of preparatory time afforded before treatment began and this created a number of difficulties. Although on the one hand it could be seen as a move in the right direction it did leave little time for psychological adjustment and making arrangements for family.

A diagnosis of breast cancer is usually unexpected and 'unbelievable' however the women described 'having to be strong' in support of the family to maintain a sense of normality and calm. Mellon and Northouse (2001) discuss similar factors in their research exploring family survivorship following cancer diagnosis. The stress of needing to be supportive of others particularly children, at a time of needing support oneself, is heightened for younger women. At this stage in their lives many women have had limited experience of being so sick and as the mainstayers of family life cannot afford to be (Walsh et al 2005).

This study also found women experienced disempowerment or loss of control of self during their breast cancer treatment. Health professionals were perceived to focus squarely on the disease rather than the whole person; this phenomenon is well documented (Mellon et al 2006). It was especially true for the youngest participants who found it particularly hard to come to terms with the 'why me' factor.

Research has shown having multiple stressors add to a woman's overall psychological and physical suffering at this time (Coyne and Borbasi 2006). The women in this study reported similar stressors as those that occurred during diagnosis and treatment. Open discussions about how to cope with the symptoms of treatment would be helpful for younger women, who as stated often have difficulty assuming the sick role and asking for help (Manne et al 2005). The provision of incremental information in a variety of forms (such as oral taped or written) regarding treatment options was noted as helpful by the women in this study and facilitated much needed discussion with their partner and family members on a range of issues. This has been noted in previous research (Nikoletti et al 2003).

All of the participants commented on the unexpected length of time it took them to recover after each treatment phase, both physically and emotionally. This was associated with the severity of side effects including nausea, fatigue and specific concerns such as mouth ulcers. Yet, staying 'on top of the treatment' was a major goal for these women. The women stated they were not prepared for the emotional toll the treatment took on them but were certainly aware that how they responded to their medical treatment influenced the family's mental health. They noted the importance of the family in spurring their recovery. These findings are consistent with previous research identifying that the availability of both physical and psychological support produces better mental and physical wellbeing in women (Northouse et al 2007).

In terms of recovery many of the women spoke of coming out of the treatment phase with a positive outlook. While the period of diagnosis and chemotherapy constituted a rollercoaster of physical and psychological concern, as the treatment came to an end a strong sense of survivorship ensued together with an attitude of no longer taking life for granted. The participants' descriptions affirm previous research identifying a positive attitude in younger women to survive and get back to 'normal' (Walsh et al 2005; Sammarco 2001) and young women often show great resilience and discover positive meaning in having breast cancer (Albaugh 2003). It would be useful for health professionals to validate and support women when they identify positive aspects of their experience and adjustment thus reinforcing their adaptation in the longer term. This could be achieved by understanding the need for women to adjust to each phase of treatment and by maintaining open communication with both the woman and her family as she seeks to cope with each new treatment concern (Mellon et al 2006). The women in this study suggested several strategies that helped them maintain some control over their lives; journal writing and scrap booking helped them to appreciate each day and focus on aspects other than the disease.

While it is inevitable individuals will draw on differing coping strategies during the treatment regime and beyond it is important for health professionals to consider and respond to individual and family needs (Hutchinson et al 2006; Coyne 2004; NBCC 2001). Previous research identifies the importance of the family working together to overcome the problems associated with treatment schedules (Clark 2002). Researchers note the importance of understanding family strengths and networks to ensure the caregiver support network does not become stressed and unable to provide vital support (Northouse et al 2005; Clark 2002). An increased understanding of the young woman's perspective and taking time to question how she is adjusting and maintaining her role in the family is important. A multidisciplinary team approach is essential to ensure young women and their family members can access counsellors, social workers and other support health professionals as this age group tend not to identify the need for or ask for assistance because of their reluctance to adopt a sick role. Breast care nurses are especially important at this time.

CONCLUSION AND RECOMMENDATIONS

In conclusion, it is important for health professionals to understand that the experience of breast cancer diagnosis and treatment for younger women is made more difficult because of their biological status and the complexity of the roles traditionally associated with this time of life. The aggressive nature of the breast cancer, unyielding treatment schedules and physical side effects compound the distress. Specific recommendations for nursing staff would be the provision of taped doctors' visits and written notes explaining treatment schedules; the organisation of a special time to discuss how the family is coping with the breast cancer treatment; and the encouragement of the woman and her family to use the resources provided by health professionals. As younger women with breast cancer move into longer term survival there is a need for research exploring on-going care and concerns.

LIMITATIONS

In keeping with the nature of interpretative inquiry there is no intent to generalise the findings of this study rather the intent is to produce credible findings (Sandelowski 1993). While the number of participants in this study was small it is feasible that young women with breast cancer in matching settings will experience similar issues.

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Verbal, physical and sexual abuse among children working on the street

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children working on the street, abuse types, nurse

ABSTRACT

Purpose
The purpose of this study was to explore the verbal, physical and sexual abuse experienced by children working on the street in Ankara, Turkey to determine the type of abuse occurred, the reactions to being abused, sources of abuse and coping methods against abuse.

Design and Methods
A qualitative and descriptive study was conducted with children working on the street in Ankara, Turkey. Five focus group discussions were held with 40 children. The data collection form contained questions about age, educational status, gender, abuse types, reactions to being abused, sources of abuse and coping methods against abuse. Data were assessed by frequency and percentages by using the Statistical Package for Social Sciences for Windows (version 9.5).

Findings
Children working on the street in the sample said they were subjected to verbal, physical and sexual abuse (50%, 50% and 65%, respectively). More than half the participants were exposed to physical abuse from other working children who were selling different things to help their families (55.0 %) and street children who were homeless and live on the streets (65.0 %). 'Responding with same methods' was the most used coping method among children for all types of abuse. Of total participants, 36 children stated they needed information about abuse. The results indicate verbal, sexual and physical abuse have a negative effect on children working on the street.

Conclusions
The number of children working on the street in Turkey increases each day (Polat 2009; Kurt et al 2005) and these children are most at risk for all types of abuse. Children working on the street need information and training to develop their awareness about abuse and their skill in avoiding abuse and/or dealing with the consequences. The present health education available to children working on the street in Turkey does not include information about various types of abuse. Nurses are in a position to play an important role in determining whether children they encounter are experiencing any type of abuse and should be directly involved in identifying the physical, social and psychological consequences of abuse as well as providing avenues for the protection and treatment of children affected by abuse. In order for nurses to be able to provide effective care for children working on the street, they need to be knowledgeable about them and the abuse, violence and other problems the children experience.

This paper concludes children have the right to be protected against all types of abuse. Children should be educated to increase their awareness of the various types of abuse and they should also be provided with support by government institutions and health professionals, particularly nurses. Furthermore, preventive measures should be adopted to reduce all types of abuse against children in Turkey.

INTRODUCTION

The studies and available literature on the topic of children working on the street note they are very heterogeneous population. The United Nations Children's Fund (UNICEF) describes three main categories:

1. children at risk: children working on streets, but having family support;
2. children of the street: children who do not have any family support; and
3. children on the street: children having insufficient family support.

Children on the street come to the streets to work in order to supplement their families' income. They return home to their families at night time. The largest group in this typology is the 'children at risk' category. These are the children of the urban poor and they form the reservoir from which street children emerge (UNESCO 2009; UNICEF 2009; Ali 2004; Baybuga and Celik 2004).

In spite of overall economic growth, child labor remains a widespread and growing phenomenon in today's world (Gharaibe and Hoeman 2003). Children at work in economic activity is a broad concept that encompasses most productive activities by children, including unpaid and illegal work and working in hazardous or dangerous environments as well as work in the informal sector (ILO 2009; Gharaibe and Hoeman 2003). Millions of children work to help their families in ways that are neither harmful nor exploitative. But one in six children five to fourteen years old, about 16 percent of all children in this age group, is involved in child labour in developing countries. In the least developed countries, 30 percent of all children are engaged in child labour (UNICEF Jan 2009). Eastern and Southern Africa; and Latin America and the Caribbean the incidence is 36 and 11 percent, respectively. In the West and Central Africa, it is 35 percent (UNICEF Jan 2009). The incidence of children working on the street is rapidly growing in Turkey (UNICEF 2006; Kurt et al 2005). UNICEF estimates 42,000 children are living and working on the streets in Turkey although unofficial estimates put the figure closer to 80,000 (UNICEF 2006). Looking at the specific characteristics of the children, most of them live on the streets during the day and return home at night. Some children know where their families are but prefer to live on the streets; and a few are without family and spend their days and nights on the streets (UNICEF 2009; Kurt et al 2005).

Miserable living conditions, poverty and domestic violence are three of the major reasons why these children either leave home or are sent to the streets to make money to support their family (Polat 2009; TURKIS 2009; UNICEF 2009; UNICEF 2006; Kurt et al 2005). Children working on the street perform similar tasks throughout the world (Polat 2009; TURKIS 2009; UNICEF 2009; Kurt et al 2005). They shine shoes; wash and mind cars; and sell lottery tickets, magazines, food and newspapers. Some also carry goods; sell cigarettes and chewing gum; do odd jobs; beg; entertain; and even direct traffic at intersections. Extreme poverty has forced them to become at least partially self-supporting with some children working or begging to support themselves and their families (Polat 2009; TURKIS 2009; UNICEF 2009; Kurt et al 2005; Parker 2002). Subaşı's (1996) study in Turkey found the majority of the children in her sample worked in street markets, parks and in places with heavy traffic as food vendors and shining shoes.

Children working on the streets are at higher risk for experiencing abuse (Polat 2009; TURKIS 2009; Kurt et al 2005; Hadi 2000). They hitch hike for transportation and work in crowded traffic or out in the open on the street or in parks and in front of bars. Children working on the streets suddenly appear in front of cars asking to clean car windows or begging for money. Consequently they are often rejected, yelled or sworn at or denigrated in other ways (Polat 2009; TURKIS 2009; UNICEF 2009; Subaşı 1996). A study by Audu et al (2009) found 87.8 percent of girls working on the streets (total 171 girl children in the sample) had been exposed to sexual assault. The same study concluded the girls in the sample were found to be significantly more likely to be sexually assaulted when they had no formal education and worked for more than eight hours per day.

Abuse is a universal problem, which negatively affects the physiological, psychological and social health of the victim (Ahmadkhaniha et al 2007; Gharaibe and Hoeman 2003; Rew 2000). Children working on the street who are exposed to abuse feel fear and anger (UNICEF 2009; Valente 2005; Subaşı 1996). They use several coping methods to deal with the abuse which include fighting back, getting help from family or responding with tactics similar to those of their abusers. Sometimes they use sharp or explosive weapons, report the abuse to police simply run away (Subaşı 1996). One study showed the majority of children working on the street have had something thrown at them in anger (67%), been pushed or shoved in anger (82%), slapped (76%) or hit with an object (71%). In the same study, thirty percent of children had been threatened with a gun or knife, assaulted and 40% had been beaten. In addition, many had been asked to do something sexual (22%) or forced to do something sexual (20%) (Tyler and Cauce 2002).

Identifying the various types of abuse and offering strategies to at-risk children to help them cope with the hazards of their lives on the streets is of critical importance in helping to establish a healthier and safer society. Nurses can play a very important role in this regard by identifying the health care needs of children living and working on the streets, who are at most risk for abuse and neglect. Nurses are in a position to increase awareness of the various types of abuse and the consequences of abuse and can also offer support and solutions for solving or dealing with these problems.

Many studies in the literature have reported on children's reasons for working on the streets, how socioeconomic factors contribute to children working on the streets and the various types of abuse that occur (UNICEF 2009; Kurt et al 2005; Baybuga and Celik 2004; Hadi 2000). However, few studies have examined the consequences for the children working on the streets of the physical, emotional and sexual abuse they experience. Therefore the purpose of this qualitative study was to identify the characteristics of children working on the street as well as the associated risk for and consequences of abuse.

METHODS

The design of the study was a qualitative and descriptive survey. The participants in the study were selected from among children working on the street in Ankara, Turkey who were registered with the Behice Eren Child and Adolescent Centre, which is under the Social Services Child Protection Agency.

Using a review of the literature, a data collection form was designed for use in focus group discussions. Five focus group discussions were held with 40 children. Most participants were male with only two females participating. Ages ranged between eight and seventeen years (mean: 12.5 years). The sample consisted of children regularly attending and registered to the Behice Eren Child and Adolescent Centre. Gaining the trust of working children on the streets was considered because it was very important for implementing this kind of study. Researchers conducted focus group discussions during times when the children gathered at the institution. Researchers also participated in some activities such as the distribution of educational materials and participation in educational support activities. Exposure to the researchers during these activities was considered very influential in encouraging the children to participate in the focus group discussions. In addition, professionals working at the institution (nurses and social workers) helped the researchers construct the focus groups. The study sample consisted only of those children who voluntarily agreed to participate in the study.

Prior to starting focus group discussions, the purpose and goals of the study were explained to the children. Before conducting focus group discussions, dates and times were set for interviews. However some of the children did not attend the interviews at the pre-set date and time. The researchers spoke with those children who did not come to interview and another date and time was arranged. All focus group discussions were held in an appropriate room at the institution. All participants were placed around a table facing each other. The participants were assigned a pseudonym and all discussions were recorded with permission. A data collection form was also used to record the participant's age, education, gender, the types of the abuse, consequences of being subjected to abuse, sources of abuse and coping methods against abuse. Types of abuse were identified as verbal, physical and sexual. The questions were tested for structure and clarity by the researchers in a prior pilot study with six participants. The results of the pilot study were not included in the results of this study.

Each group included between four and eleven participants who remained anonymous except for giving their age and a name for use in group discussions. Each group's interview lasted 40 minutes on average. The discussions covered the types of the abuse, consequences of being abused, sources of abuse and coping methods against abuse. The discussions were open-ended and covered various aspects of each topic. The researchers ensured each question on the data collection schedule was adequately addressed. The discussions were tape-recorded however notes were also made regarding such things as group dynamics, effect, particular reactions and number of participants endorsing a view and later added to the transcriptions. The written material was analysed and interpreted to determine themes and to create a conceptual framework of the types of the abuse, consequences of being abused, sources of abuse and coping methods against abuse in the context of the children's day-to-day lives. Transcribed data from the focus groups were validated through discussion between the focus group moderator and the researcher, who acted as recorder and kept field notes. During focus group discussions, some children were shy about the questions or sometimes teased each other. They also had a tendency to be guarded when they spoke, letting older children answer the questions.

The units of analysis for this study were words or concepts, themes and numbers of subjects who described the same concept or theme. Transcribed data from the focus group discussions were grouped by themes and concepts and then the statements of the participants were coded numerically according to these groups. Obtained data were assessed for frequency and percentages by using the Statistical Package for Social Sciences for Windows (version 9.5).

FINDINGS

Table 1 shows the descriptive findings of the children working on the streets in the sample of this study. The majority of the children were male, aged 13 to 17 years. In addition, almost all were students in a primary school.

Table 1: Socio-demographic characteristics of children working on the street

Characteristics	n	%
Age		
8- 12 years	16	40.0
13-17 years	24	60.0
Gender		
Male	38	95.0
Female	2	5.0
Education Status		
Primary school	39	97.5
Secondary school	1	2.5
Total	40	100.0

The study explored whether the children working on the street were exposed to all three types of abuse, verbal, sexual and physical. The study concluded the children were subjected to verbal abuse if they were yelled or shouted at; threatened with physical harm; cursed or sworn at; endured inappropriate or nasty, rude, hostile behaviours; or if malicious rumours, belittlement or humiliation were experienced. The number and percent of the children working on the street exposed to verbal abuse are shown in table 2. Fifty percent of the sample (20) said they were subjected to verbal abuse.

Table 2: The type of abuse reported by children working on the street

Abuse type	n=40*	%
Verbal	20	50.0
Physical	20	50.0
Sexual	26	65.0
	66	

*Participants gave more than one answer

In the study, children working on the street were considered to have been subjected to physical abuse if they had experienced physical injury or harm. Half the children in the study stated they were subjected to physical abuse (table 2).

If the children in this study were subjected to unwanted sexual jokes, stories, questions or words, if they were propositioned or forced to go somewhere without their consent, if they received unwanted phone calls or were subjected to other actions or behaviours of a sexual nature, they were considered to have experienced sexual abuse. The most common type of abuse of children working on the street in this study was sexual abuse (65%) (table2).

The most common sources of abuse types are listed in table 3. The main source of verbal abuse was children working on the street who also sniffed thinners and glue. Almost all children subjected to verbal abuse indicated customers were the next main source of abuse followed by the police/constabulary/security personnel (35%), tradesmen (20%), gangs (20%) and other working children (15%).

Table 3: Source of abuse types

Source of abuse	Type of abuse					
	verbal n=20	%	physical n=20	%	sexual n=26	%
Other children working on the street	3	15.0	11	55.0	10	38.4
Children living or working on the street who sniffed thinners and glue	18	90.0	13	65.0	7	26.9
Tradesman	4	20.0	-	-	-	-
Customers	8	40.0	-	-	-	-
Police/constabulary/security personnel	7	35.0	5	25.0	-	-
School friends	-	-	-	-	5	19.2
Gangs	4	20.0	-	-	-	-
Others (taxi driver, boss, older man/woman/pimp)	2	10.2	1	5.0	7	26.9

In this study, the rate at which physical abuse occurred was similar to verbal abuse. Children working on the street who also sniffed thinners and glue were the most common source of physical abuse followed by other working children (55%) and police/constabulary/security personnel (25%) (table 3).

In relation to sexual abuse, children working on the street themselves were the most common source of sexual abuse followed by children working on the street who also sniffed thinners and glue (26.9%) and school friends (19.2%) (table 3).

Table 4 shows the reactions of the children when faced with the three types of abuse. The feeling of shame was higher among children facing verbal and physical abuse compared with those subjected to sexual abuse (3.8%). This is not a surprising finding considering verbal and physical abuse usually occur in front of other people.

Table 4: Reaction to being subjected to abuse

Reaction	Type of abuse					
	verbal n=20	%	physical n=20	%	sexual n=26	%
Sadness	3	15.0	-	-	1	3.8
Fear	13	65.0	12	60.0	4	15.3
Feelings of shame	17	85.0	8	40.0	1	3.8
Willing to beat/swear at/murder	3	15.0	4	20.0	4	15.3
Feeling nothing	2	10.0	-	-	9	34.6
Others (anger, hesitation)	-	0	5	25.0	-	-

Children subjected to verbal (65%) and physical (60%) abuse felt fearful of the person who abused them compared to 15.3% exposed to sexual abuse. Of children who were subjected to verbal and sexual abuse, 10.0% and 34.6% respectively, stated they felt nothing at the end of abuse. In this study, the children subjected to verbal, physical and sexual abuse (15.0, 20.0 and 15.3 percent respectively) expressed they wanted to beat, swear at or murder the perpetrators.

The coping methods used to deal with the abuse by the children are listed in table 5. 'Responding with same methods' was the most common coping strategy used among children for all abuse types. 'Doing nothing' was a common coping method, particularly for children subjected to verbal and physical abuse (30% and 25% respectively). Twenty-five percent, 26.9% and 15.0% children working on the street in the study sample stated they prefer 'fighting' when faced with any kind of abuse. This method is followed by the coping method of 'help of family members or relatives' (15.0%, 30.0%, 19.2% respectively); or 'running away' (35.0%, 20.0%, 11.5% respectively). Other coping methods in this study such as, 'using cutting and explosive weapons' (15.0%, 5.0% and 11.5% respectively) were used less often. Reporting the abuse to police and the formation of gangs were additional coping methods. The researchers observed the majority of the working children on the street carried implements, tools or objects such as sharp items, knives and pieces of glass to protect them from abuse.

Table 5: Coping method of children working on the street to abuse type (n=40)

Coping method	Type of abuse					
	verbal n=20	%	physical n=20	%	sexual n=26	%
Doing nothing	6	30.0	5	25.0	1	3.0
Fighting	5	25.0	3	15.0	7	26.9
Help of family member or relative	3	15.0	6	30.0	5	19.2
Run away	7	35.0	4	20.0	3	11.5
Respond using same methods	6	30.0	11	55.0	7	26.9
Use of cutting and explosive weapons	3	15.0	1	5.0	3	11.5
Others (reporting abuse to police, forming gang)	-	-	-	-	2	7.0

The children were asked whether they had any knowledge about the various types of abuse and coping methods. More than half the participants (60.0%) had knowledge about the types of abuse; 73.5% gained this information from their families and relatives while 23.5% received information from teachers and social workers. A small percentage (2.9%) stated they had heard about abuse from other children working on the street. Almost all the children (90.0%) showed interest in obtaining information about abuse and how to protect themselves while on the street. An interesting finding in this study was that 10.0% of the children were not willing to accept any information about abuse. When asked why, they said they did not need to know about it.

DISCUSSION

Today's children will become the adults of the future and will take on the responsibilities and functions of society. Since the serious issues of child abuse and violence against children negatively affect their psychosocial state and overall development, it is clear programs and other measures should be implemented to protect children against abuse and violence in their lives.

In this study the majority of the children were aged 13 to17 years old and male; and all were still in school (table 1). Many studies in the existing literature concluded have shown the majority of children working on the street are male (Polat 2009; UNICEF

2009; Ali 2004; Baybuga 2002; Hadi 2000). The study of Baybuga and Celik (2004) showed about 2.3% of children working on the streets were young girls. These results are similar to the findings of this study (table 1). One of the possible reasons why fewer girls than boys are working on the streets is traditional Turkish family culture. This cultural view dictates a girl's place is at home and if she has to work, she should only work within the confines of the home. However as throughout much of the world, the number of girls working is also increasing in Turkey (Polat 2009).

Children working long hours on the streets are exposed to many hazards including sexual, emotional and physical abuse. They also face a high risk of injury or even death. Some are even forced into child prostitution or other criminal activities (ILO 2009; TURKIS 2009; UNICEF 2009; Stanhope and Lancaster 2003; Hadi 2000).

All the children included in this study reported experiencing verbal, physical and sexual abuse during their working times (table 2). The findings of studies from the literature are similar (Gharaibeh and Hoeman 2003; Silva 2002; Subaşı 1996). The study of Hadi (2000) found 2.3% of all children were physically abused, 2% were financially exploited, 1.7% were forced to involve in inappropriate activities and 3% were forced to work for long hours. Parker (2002) indicated children exposed to street culture frequently faced violence, various risks and problems from the police. Kacker et al (2007) concluded two of every three children were physically abused, while 53.2% children reported one or more forms of sexual abuse and half reported emotional abuse. Another study found 591 children working and living on the street were exposed to domestic abuse and 22 and 569 of these children were verbally and physically abused, respectively. In addition, 593 children were exposed to abuse by those who were not family members (Kurt et al 2005).

The children working on the street portrayed the police as an enemy, a fearful figure and one of the most frightening street experiences. Rarely did the police have a positive image for them. According to the children, police violence occurred in three forms: through systematic police persecution in an effort to remove the children from the streets against their will; actions that had the deliberate intent to humiliate them with verbal or physical aggression; and through alleged sexual abuse (revealed by the children in a veiled manner). The authority that is supposed to protect them is portrayed as one of the most feared social agents (Ribeiro 2008).

The children stated they were yelled or shouted at with the perpetrators using rude, hostile behaviour and swear words along with belittlement and humiliation toward the victims. Some of the children stated they were also abused physically and attacked with sharp instruments, as well as being kicked and hit. It was found the most common sources of verbal and physical abuse were from other children living or working on the street who were also users of thinner and glue sniffing, customers, police and gangs, respectively (table 3).

Another important finding of this study is both female and male children said older people openly propositioned them for sexual intercourse. The following are sample responses from the children in the study about sources of sexual abuse: "Other children on the street wanted to have sex with me", "The man customer tried to kiss me".

In the relevant literature there are many studies showing different risks children working on the streets face. These risks include the possibility of arrest, jail or beatings from the police because these children are likely to be thought guilty of various disruptive or illegal behaviours. Furthermore, there is the risk of incurring further violence from their peers (Polat 2009; TURKIS 2009; Parker 2002; Subaşı 1996). Although the number of scientific studies investigating the possible reasons for and outcomes of child violence are very few, the news media in Turkey often report incidents of child violence. For this reason, the topic of child violence and finding ways to combat and cope with it is important. These pressing social problems need to be put high on the government agenda in order to create a safer and healthier society for children. Fully understanding and dealing with violence against children in Turkey is made more difficult because there is no agreed definition of what kinds of behaviours constitute violence against a child. Further complicating the issue is the incomplete statistics regarding this topic.

The results of the study shows the majority of the children exposed to abuse had 'feelings of being shamed' (table 4). Sample responses of the children in our study about the results of abuse: "I feel ashamed", "I cry", "I want to hit, but I am not a strong person".

Psychological responses to abuse such as anxiety, denial, self-hypnosis, disassociation and self-mutilation are common. Coping strategies may include being angry with the perpetrator or acting as a passive victim, rescuer, daredevil or conformist (Valente 2005).

In table 5, the majority of abused children used different coping methods: running away, responding with the same methods, fighting, use of cutting and explosive weapons and getting help from family members and relatives were some examples. These methods were summarized in their sentences like:

"I do nothing" "I swear" "I verbally warn him" "I run away from that environment" "I cry" "I tell it to a family member"

Children exposed to any of the abuse types may develop mental health disorders. A study by Ahmadkhaniha et al (2007) found 20.9% of children had been sexually abused and children diagnosed with depression were 3.2 times more likely to have been sexually abused than children who were not depressed. Although children working on the streets contribute some money to the family budget, they stated their families despised them. Children exposed to the various types of abuse were affected negatively physiologically, psychologically and socially. Social isolation and feelings of loneliness may result from traumatic childhood experiences such as sexual abuse or other psychosocial factors that lead to feeling estranged or misunderstood by others (Rew 2000). A study by Subaşı (1996) found 20.8% of children working on the streets beat the person who made them angry; 20.5% ran away from the person and place; while a small number cried or told their relatives or other working children about what happened. This study found the majority of children preferred doing nothing when they were exposed to abuse however this passive reaction to abuse may only create more anger and stress within the child, ultimately affecting their physical and mental health in a negative way.

CONCLUSIONS

Children working on the street are one of the groups who are at most risk for developing a variety of physical, emotional and psychological problems. Their numbers are increasing not only in Turkey but in other countries of the world as well.

The Turkish Institution of Social Services and Child Protection provide services for children working on the street. However, health professionals providing services to children working on the street are frequently not well trained in health promotion services and the studies on children working on the street are very limited. In Turkey, financial and spiritual support for children working on the street is insufficient and inadequate and the health care system may not adequately meet their needs.

Children working on the street need information and training to develop their skills and awareness about abuse. In Turkey, children working on the street are not educated or informed in the usual health education courses about abuse. Not only do children need to be educated about the topics of violence and abuse, nurses should also be educated about children working on the street, their problems, child abuse and violence so they can provide the most effective and beneficial means of help. In addition, nurses are in a unique position to play a key role in screening, assessing and treating all types of abuse in children.

In the first years of the 21st century it is imperative professionals and legislators, who are in a position to create change in our society, act to deal with the serious issues encountered by children working on the street. The harsh conditions under which these children live and work are a breeding ground for abuse and neglect as well as a host of physical, psychological and emotional problems. Children have the right to be protected against the many risks they face so they may grow up to be healthy and functional members of society.

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Staff perspectives of a cardiology short stay unit

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KEY WORDS

short stay unit, procedure, discharge, cardiology, clinical safety

ABSTRACT

Objective
To evaluate staff perceptions about working environment, efficiency and the clinical safety of a cardiovascular intervention short stay unit (SSU) during the first year of operation.

Design
Postal questionnaire.

Setting
Cardiac catheterisation laboratory (CCL), coronary care unit (CCU), general cardiology ward (GCW) and the short stay unit (SSU) of a tertiary referral hospital situated in the mid coastal region of NSW.

Subjects
Cardiologists (including visiting medical officers [VMO]), cardiology fellows, cardiology advanced trainees and nurses.

Results
Responses on the working environment of the SSU and the discharge process were statistically significant. A substantial proportion of both nurses and doctors had concerns about patient safety, even though no adverse events were formally recorded in the database.

Conclusions
Though the participants of the survey agree on the efficiency of the SSU in providing beds to the hospital, they disagree on aspects that are important in the functioning of the SSU, including the working environment, patient selection and clinical safety. The results highlight potential issues that could be improved or addressed and are relevant to the rollout of SSUs across NSW.

INTRODUCTION

The concept of the short stay unit (SSU) was initially introduced into surgical services targeting minor surgical procedures that required admission (Marshall and Cregan 2005). This was to expedite the discharge process thereby addressing the pressure for beds, avoiding postponement of other elective procedures and ultimately costs. Cregan (2005) and Khan et al (1997) alluded to an increase in consumer demand and bed blocking as reasons contributing to the pressure for beds. Currently the public health system is experiencing an increase in demand for services that is not being met owing to budget restrictions, thus leading to 'bed blocking'. The concept of a SSU was gradually introduced into other specialties, notably emergency medicine (Khan et all 1997 and Goodacre 1998). The success was variable and consistent data describing cost effectiveness and acceptable clinical satisfaction was lacking (Goodacre 1998). In 2000, this concept was trialled in Sydney in paediatrics with success (Browne 2000). In the same year, a medical short stay unit established in Montreal in 1989 was reviewed. The review recommended further research into cost-effectiveness, to compare definitively the efficiency and outcomes of care delivered to similar patients in the medical short stay unit within the traditional medical inpatient units and to assess the impact of a staff-run medical short stay unit on the training experience of medical students and residents (Abenheim et al 2000). Recently, the department of health has recommended the introduction of SSU to cardiology services attached to all tertiary hospitals with cardiac catheterisation facilities in New South Wales. Through the Clinical Services Redesign Program, NSW Health is developing new models of care for adult acute cardiology patients. The program supports clinicians and managers to redesign and improve a range of patient journeys across multiple care centres in area health services. The objectives of the State-wide Cardiology Project are to enable timely and equitable access to effective and appropriate care across New South Wales, treat patients in order of clinical priority, reduce variations in the length of stay for patients between and within facilities and enable access by health service teams to a practical and coordinated cardiology service for their patients. One of the four projects developed, the Bed Solutions Project aims to optimise catheterisation laboratory throughput by utilising 23 hour-beds (NSW Health 2007a and NSW Health 2007b). This study seeks to assess the impact and success of this intervention from the perspective of the staff working within the SSU. It has the potential to highlight the need for clinical redesign of the SSU.

METHODS

This pilot study conducted at tertiary referral hospital evaluated the SSU attached to a busy cardiovascular unit with respect to staff perceptions about length of stay, appropriateness of stay and the procedures requiring admission, the discharge process, transfer of medical information and workplace satisfaction. We also invited the participants to include additional comments. In addition, we also reviewed all the admissions, adverse events and outcomes since the introduction of the SSU in January 2007. We did not survey patients as this was primarily a clinical, not a quality control audit; as such, ethics committee approval was not required.

With the agreement of the service and/or clinical leaders and the team leaders, anonymous self-addressed envelopes containing a questionnaire developed by the investigators (Appendix A) were posted to all cardiologists (including visiting medical officers [VMO]), cardiology fellows, cardiology advanced trainees and nurses who worked in the cardiac catheterisation laboratory (CCL), coronary care unit (CCU), general cardiology ward (GCW) and the short stay unit (SSU).

The questions covered a varied dimension of issues that were considered important for the successful operation of the SSU. The questions were each rated with a response indicating a poor (rating=1) to a good performance (rating=5). A level of '3' is considered satisfactory. Answers were dichotomized, where all responses scoring 3-5 were 'favourable' and those responses scoring 1-2 were 'unfavourable'.

Percentages were calculated and exact binomial 95% confidence intervals generated. Percentages of favourable or unfavourable ratings by doctors and nurses to the same questions were compared using Fisher's exact test.

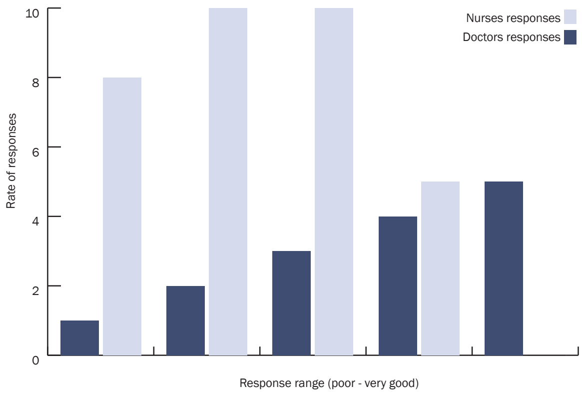
RESULTS

The response rate was 16/19 (84%) for the doctors and 36/70 (51%) for the nurses. Not all respondents answered all questions. The responses were as follows:

Working environment of the SSU enabling adequate patient care:

Fifteen out of 33 nurses rated the environment to be average to above average (45%, 95% CI 28-64), whereas 13/16 doctors rated the environment to be average to above average (81%, 95% CI 54-96). This difference was statistically significant with a p value of 0.03 and a risk ratio of 1.95 (% CI 1.15-2.78). Figure 1 illustrates the discrepancy between the answers provided by doctors and nurses.

Figure 1: Working Environment of the SSU



Efficiency in providing beds to the hospital:

94% (30/32) of nurses rated the SSU to be average to above average (95% CI 79-99), while 93% (15/16) of doctors rated the SSU to be average to above average (95% CI 70-100). This was not statistically significant with a p value of 1.0 and a risk ratio of 1.0 (95% CI 0.86-1.17).

Transfer of information for clinical management:

80% (28/35) of nurses rated the process to be average to below average (95% CI 63-92), while 69% (11/16) of doctors rated the process to be average to below average (95% CI 41-89). This was not statistically significant with a p value of 0.48 and a risk ratio of 0.86 (% CI 0.59-1.24).

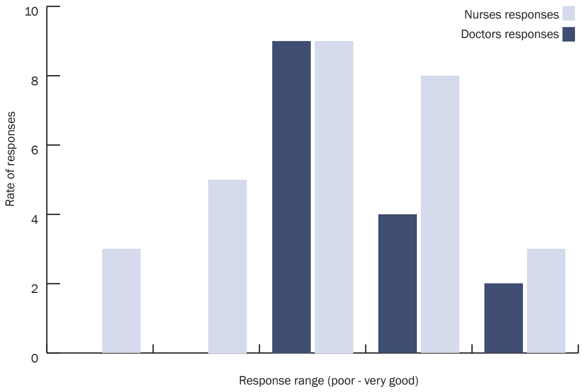
Transfer of information from the referral source:

58% (21/36) of nurses rated the process to be poor to average (95% CI 41-74), while 62% (10/16) of doctors rated the process to be poor to average (95%CI 35-85). This was not statistically significant with a p value of 1.0 and a risk ratio of 1.0 (95% CI 0.67-1.7).

Discharge process from the unit:

71% (20/28) of nurses rated the process to be average to above average (95% CI 51-87), while 100% (15/15) of doctors rated the process to be average to above average (95% CI 78-100). This difference was *statistically significant* with a p value of 0.036 and a risk ratio of 1.40 (95% CI 1.10-1.77). Figure 2 illustrates the results.

Figure 2: Discharge Process from the SSU



Appropriateness of patient selection to be managed in the SSU:

- 58% (18/31) of nurses rated the selection of *semi-urgent procedure* patients to be average to below average (95% CI 39-75), compared to 81% (13/16) of doctors (95% CI 54-96). This was not statistically significant with a p value of 0.19 and a risk ratio of 1.40 (95% CI 0.96-2.05).
- 84% (26/31) of nurses rated the selection of *elective procedure* patients to be above average to good (95% CI 66-95) compared to 88% (14/16) of doctors (95% CI 62-98). This was not

statistically significant with a p value of 1.0 and a risk ratio of 1.0 (95% CI 0.82-1.3).

- 88% (29/33) of nurses rated the selection of stable patients for *planned procedures* to be above average to good (95% CI 72-97), compared to 81% (13/16) of doctors (95% CI 54-96). This was not statistically significant with a p value of 0.67 and a risk ratio of 0.92 (95% CI 0.71-1.21).

Clinical safety of the SSU:

Only 42% (13/31) of nurses rated the SSU to be safe (95% CI 25-61), compared to 67% (10/15) of doctors (95% CI 38-88). This was not statistically significant with a p value of 0.21 and a risk ratio of 1.59 (95% CI 0.9-2.7). However, on review of the cardiology clinical adverse events database pertaining to the SSU since its introduction in January 2007, there were no events recorded.

Table 1: Summary of Responses (questions listed in appendix)

Question#	Doctors	Nurses	Fisher's Exact Test
1	13/16 81%(54-96)[a]	15/33 45% (28-64)[a]	RR=1.79(1.15-2.78)[b] P=0.03
2	15/16 93%(70-100)[a]	30/32 94% (79-99)[a]	RR=1(0.86-1.17)[b] P=1.0
3	11/16 69%(41-89)[a]	28/35 80% (63-92)[a]	RR=0.86(0.59-1.24)[b] P=0.48
4	10/16 62%(35-85)[a]	21/36 58% (41-74)[a]	RR=1.07(0.67-1.7)[b] P=1.0
5	15/15 100%(78-100)[a]	20/28 71% (51-87)[a]	RR=1.4(1.0-1.77)[b] P=0.036
6a	13/16 81%(54-96)[a]	18/31 58% (39-75)[a]	RR=1.4(0.96-2.05)[b] P=0.19
6b	14/16 88%(62-98)[a]	26/31 84% (66-95)[a]	RR=1(0.82-1.3)[b] P=1.0
6c	13/16 81%(54-96)[a]	29/33 88% (72-97)[a]	RR=0.92(0.71-1.21)[b] P=0.67
7	10/15 67%(38-88)[a]	13/31 42% (25-61)[a]	RR=1.59(0.9-2.7)[b] P=0.21

[a] Proportion with a favourable response with 95% confidence interval

[b] 95% confidence interval

ADDITIONAL COMMENTS

Out of the 36 nurses who responded to the survey, 18 (50%) provided comments, two (11%) disagreeing the SSU is unsafe and 16 (89%) agreeing it is unsafe. The major themes found amongst the comments provided by the nurses were related to the clinical safety of the SSU. 100% of those who agreed the SSU was unsafe stated there is not enough space between the beds and as a result of this, 50% of nurses stated they could not perform their duties (e.g. sheath removal or digital pressure). Closely following these two themes are lack of experienced cardiac nurses (44%), no support (44%) and the location/isolation of the SSU (44%). Further to this is the nurse to patient ratio, where 38% of nurses thought this to be a problem. Other minor problems mentioned were poor patient facilities (25%), substandard meals being provided to patients (approximately 19%) and the discharge process (approximately 7%). Of the two nurses that thought the SSU was safe, the nurses believed the SSU is staffed well, has sufficient support and has the appropriate type and numbers of patients.

Of the 19 doctors who responded to the survey, only five provided comments; three (60%) disagreed the SSU was unsafe and two (40%) agreed it was unsafe. The two doctors that thought the SSU was unsafe provided similar comments to the nurses, stating SSU needs to be staffed with experienced cardiac nurses and the accommodation is inappropriate. These comments highlight a discrepancy between the doctors who thought the SSU was clinically safe and the nurses who thought it to be unsafe.

DISCUSSION

There was broad agreement between doctors and nurses that the major strengths of the SSU were in providing extra beds, facilitating efficient discharges and in handling elective and planned procedures well. There was also broad agreement between doctors and nurses that there was poor transfer of information, worse for information from referring centres than from within the hospital itself. There was also agreement the SSU worked less well for semi-urgent patients. These results highlight issues that need to be followed-up to ensure that SSUs work well and may need chart review to objectively detail the perceived shortcomings in process.

The major discrepancy between doctors and nurses was regarding adequacy of patient care in SSU; this may reflect the differing levels of involvement between doctors and nurses with the minutiae of SSU processes. These perceptions may influence staff satisfaction and retention and need to be explored more fully, perhaps through chart review and objective data on whether care met accepted guidelines and benchmarks and through patient surveys. There was also a perception the clinical safety was compromised within the SSU, although there have been no adverse events recorded on the formal database. However, up to 5% of the SSU patients have needed admission into the hospital beds. This may indicate adequate safe guards have been set to back up the SSU, or the current pre-admission criteria may need to be reviewed. Qualitative interviews with nurses and doctors may pick up ‘near-misses’ and improve safety processes for the future.

From the comments provided by the nurses surveyed, it was evident most of the issues revolve around the practical functioning of the SSU. A majority of nurses surveyed believe this environment to be unsafe. Of importance was the lack of experienced cardiac nurses available to work in the SSU for any given shift. This affects their ability to perform sheath removals, apply digital pressure and give medications as the available support are surgical nurses as SSU is shared with surgical services. Many respondents commented about the issue of nurse patient ratio. The other major issue is one of location. Many nurses feel the SSU though close to the CCL, is isolated from the CCU and GCW. Other issues highlighted are the discharge process, poor patient facilities and narrow beds, poor lighting within the SSU and substandard meals for those patients admitted to the SSU. There may be additional reasons, which were not brought out by this survey, which would need a further study.

The majority of doctors surveyed found the SSU functioned well. However, they highlighted areas which required improvement to be medical support after hours, availability of experienced cardiac nurses, medical discharge process including transfer of information to the patients’ general practitioner and availability of beds in the SSU.

CONCLUSION

In summary, these results highlight certain issues that need to be addressed in the future running of the SSU including:

- improved transfer of information, both from referring centres and within other sections of the hospital;
- procedures for semi-urgent patients;
- adequacy and safety of patient care; and
- numbers of experienced cardiac nurses should be reviewed.

Although these results are based on self-reported surveys and are perceptions from a small number of staff in one SSU, they indicate potential areas for improvement and need to be addressed given that they may influence the functioning of the unit as well as staff morale and satisfaction. Follow-up using chart reviews and qualitative interviews also appear warranted.

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APPENDIX

This is an anonymous questionnaire.

Please tick the appropriate box.

If you wish to provide additional comments regarding the SSU, please attach a separate sheet.

Professional status		☐ Doctor			☐ Nurse
1. Please rate if the environment of the SSU is adequate for patient care	1	2	3	4	5
	1 = Poor				5 = Good
2. Does the SSU increase efficiency to provide beds to the hospital?	1	2	3	4	5
	1 = Poor				5 = Good
3. Is the transfer of information between CCL, SSU, CCU and GCW adequate for clinical management?					
	1	2	3	4	5
	1 = Poor				5 = Good
4. Is the transfer of information between the referring centers and the John Hunter Cardiology Unit (JHCU) acceptable?					
	1	2	3	4	5
	1 = Poor				5 = Good
5. Is the discharge process from the SSU acceptable?	1	2	3	4	5
	1 = Poor				5 = Good
6. The appropriateness of the SSU to manage patients who have had:					
Semi-urgent procedures	1	2	3	4	5
Elective procedures	1	2	3	4	5
Planned procedures	1	2	3	4	5
	1 = Poor				5 = Good
7. Is the SSU clinically unsafe? (Please list your reasons on a separate sheet)			☐ Agree		☐ Disagree

Spirituality and spiritual engagement as perceived by palliative care clients and caregivers

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KEY WORDS

spirituality, engagement, hermeneutic phenomenology, end of life issues, palliative care, nursing

ABSTRACT

Objective
The purpose of this study was to examine the lived experience of spirituality and spiritual engagement as perceived by palliative care clients and their caregivers.

Design
A qualitative hermeneutic phenomenological approach was used based on van Manen's methodological structure of human science research to answer the research questions. Following ethics approval, fourteen home-based in-depth interviews were conducted with four palliative care clients and ten palliative care caregivers. Van Manen's 'holistic' and 'selective' approaches were used to identify the main themes in this study.

Setting
The participants of this study were recruited from people across rural communities of South Australia who had received or were receiving palliative care and their caregivers.

Findings
Seven main themes emerged from the data. These were categorised under two headings: spirituality and spiritual engagement. Spirituality was associated with 'God', 'coping', 'religion' and 'relationships with others', while spiritual engagement was associated with 'maintaining relationships', 'love' and 'participating in religious practices'.

Conclusion
This phenomenological inquiry set out to understand the lived experience of spirituality and engaging in spiritual matters for clients living with life-limiting conditions and their caregivers. In the process, the study identified the many benefits that may be derived from engaging in spirituality. The findings have relevance to clients and caregivers because they may wish to seek opportunities to discuss spiritual matters with health professionals and for health professionals, who will be better prepared for such conversations.

INTRODUCTION

The concept of 'spirituality' has various connotations. Its meaning has evolved slowly and even now there is no agreed definition (Carroll 2001; Hermann 2001; Coles 2000; McSherry 1998). At the time of a significant life crisis, spirituality becomes more poignant and confronting to the individual and family. Palliative clients and their caregivers report conflicting times of loss of faith and despair and at other times of growth and even inner peace (Byrne 2002). As spirituality has a wide range of interpretations, the delivery of spiritual care can be equally challenging. There is difficulty in defining what constitutes spiritual care and how to bridge the gap between theory and practice of spiritual care (Wright 2002; Cornette 1997). Health professionals are inadequately prepared to provide spiritual care (MacLeod et al 2003; Bertero 2002). Consequently, spiritual issues, more often than not, are overlooked and unresolved (Dom 1999).

This research focuses on the everyday experience of clients and caregivers experiencing life-limiting conditions who are engaging in spiritual matters. However, before the engagement in spiritual matters is explicated, it is important to clarify first the research participants' understanding of the experience of spirituality. The emphasis of this paper is on the lived experience of how participants attribute meaning to spirituality and spiritual matters in coping with life-limiting conditions.

LITERATURE REVIEW

The root meaning of spirituality in Latin, Hebrew or Greek translates to *spiritus, ruach* and *pneuma*, respectively, which means breath or wind (Barnhart 1988; Smith 1988; Dickinson 1975). The spirit gives life to the person, signifying that spirituality is central in all aspects of a person's life (Dombeck 1995). The 'spirit' and 'spirituality' may be understood from different perspectives such as religious, cultural and philosophical traditions (Fry 2000). While spirituality and religion are intertwined, they are not synonymous (Sheldon 2000; Dyson et al 1997). Spirituality is much broader than religion (Mueller et al 2001; Taylor and Ferszt 1990). Religion is an organised system of beliefs and worship (Emblen 1992). Spirituality is about the meaning of life (MacKinlay 2004), connectedness to humanity (Hassed 2002), relationships (Reed 1992) and harmony with the universe (Carroll 2001). The difficulties in defining spirituality have curtailed the assessment of spiritual needs (Dyson et al 1997), hindered the provision of spiritual care (Greasley et al 2001) and impeded progress in this area (Ross 1994).

Studies suggest that there is a positive correlation between spirituality and/or religious commitment and health outcomes (Koenig et al 2001; Mueller et al 2001). The real and potential benefits of spiritual involvement have been reported by Wink (2006), Albaugh (2003), Baldacchino and Draper (2001) and Fisher (2000). However, some studies report also that religious involvement and spirituality have negative health outcomes (Kinney et al 2002; Hermann 2001; Satterly 2001; King et al 1999).

Some contend that the association of spirituality with health is unknown (Sloan et al 1999). Nevertheless, there appears to be a widespread agreement that human beings are spiritual and may need help in their predicaments, especially at the end stages of life (Wright 2002). Studies on the spirituality of people with life-limiting conditions have been reported by Tanyi and Werner (2008), Siegel and Schrimshaw (2002) and Fryback (1993), who suggest that spirituality is important in interdisciplinary health care. Since spirituality has a wide range of interpretations, the delivery of spiritual care can be equally diverse. This difficulty in defining spirituality, what constitutes spiritual care and how to bridge the gap between theoretical insights and daily practice in offering spiritual care (Soothill et al 2001; Cornette 1997) warrants attention. While studies incorporating spirituality in health practice have been reported in the literature (Harrington 2006; Tanyi et al 2006; Hockey 2002; Cobb and Robson 1998), gaps are evident and the most important for health professionals is what and how to provide spiritual care and support. Hence, the overarching question of this research is, 'What is the lived experience of spirituality and engagement of spiritual matters of palliative care clients and caregivers?'

METHODOLOGY

Using van Manen's (1997) theoretical framework of hermeneutic phenomenology, a fuller and deeper understanding of the nature and essence of lived experiences of palliative care clients and caregivers was gained in this study (Munhall 2007). In analysing the data, a dynamic interplay of several research activities was undertaken as described by van Manen. This involved: turning to a phenomenon'; investigating experience as we live it'; 'reflecting on the essential themes'; 'describing the phenomenon through the art of writing and rewriting'; 'maintaining a strong relation' with the text; and 'balancing the research context by considering parts and whole' of the research process (van Manen 1997, pp. 31-32). The researcher paid attention and commitment to the topic under study by actively exploring the lived experience of spirituality and spiritual engagement in its entirety and by asking what it is that constitutes the nature of this lived experience. In applying language and thoughtfulness to the research phenomenon under examination, the researcher was fully 'animated' by the phenomenon of the lived experience of spirituality and spiritual engagement. By constantly gauging the 'overall design of the text against the significance that the parts played in the total textual structure' (van Manen 1997, pp. 34), the researcher was better informed of the phenomena being studied.

The research participants in this study consisted of four palliative care clients and ten palliative care caregivers. Participants selected for this study had been diagnosed with a life-limiting condition, or were caring for, or had cared for a loved one with a life-limiting condition. Following the gaining of institutional ethics approval, participants were recruited into the study through various palliative care services and self-referral. Informed consent was obtained from the participants to conduct in-depth interviews in their homes.

The in-depth interviews commenced with brief introductions about the study. The introduction included a recognition of the sensitivity of the topic and the assurance that the interview could be terminated at any time should the participant feel uncomfortable. The focusing questions were: 'Tell me about your experience of spirituality,' and 'What was it like to engage in spiritual matters with your loved one?' During conversation, other prompts were used such as, 'What happened?', 'How did it feel?' and 'What did it mean for you?' The interview was concluded after summarising important points, seeking confirmation of accuracy and thanking participants for their time and cooperation. With the permission of the participants, interviews were digitally recorded.

The interviews, which were conducted in 2005 to 2006 and averaged 1.5 hours, were transcribed verbatim. Six interviews, conducted in languages other than English, were first translated into English before transcription. The researcher's fluency in several languages and the use of professional interpreters enabled her to capture unequivocally the true meanings of the participants' stories. The researcher verified meanings of words and phrases during the course of the interviews and followed these up as appropriate.

The characteristics of the fourteen participants interviewed, classified as client, caregiver, or ex-caregiver, are summarised in Table 1. The palliative care clients interviewed were managing their conditions from the home as were the caregivers. Previous caregivers had cared for their loved ones both in home and in-patient settings. Bereaved caregivers revealed that it had been two to seven years since the death of their loved ones.

In this research, the 'holistic' and 'selective' approaches in isolating themes were employed as illustrated by van Manen (1997, p. 94). In the former, the researcher examined the interview text as a whole and endeavoured to grasp its basic meaning. In the latter, the researcher read the text several times, asked what statements and phrases stood out as revealing and highlighted these to represent the themes of the experience of spirituality and spiritual engagement.

Table 1: Characteristics of participants

Participant (Male/ Female)	Age	Palliative care client /caregiver	Place of birth	Religious denomination
Barbara (F)	77	Client	Europe	Catholic
Diana (F)	59	Client	Asia	Catholic
Frederick (M)	48	Client	Australia	Protestant
Nathan (M)	58	Client	Australia	Protestant
Catherine (F)	34	Caregiver	Asia	Catholic
Eleazar (M)	70	Caregiver	Australia	Catholic
Gina (F)	50	Caregiver	Europe	Catholic
Maria (F)	50s	Caregiver	Australia	Protestant
Ana (F)	61	Ex-caregiver	Asia	Catholic
Hilary (F)	70	Ex-caregiver	Asia	Catholic
Isabelle (F)	60	Ex-caregiver	Asia	Catholic
Jonathan (M)	57	Ex-caregiver	Asia	Protestant
Kelly (F)	62	Ex-caregiver	Asia	Catholic
Leah (F)	68	Ex-caregiver	Australia	Protestant

Pseudonyms were used

Trustworthiness was ensured by maintaining credibility of the research, the accuracy of the research process and the authority of the researcher on the subject while conducting the study (O'Mahony 2001; Sandelowski 1993; Guba and Lincoln 1989). Credibility was ensured by validating the interview interpretations with participants. Auditability was achieved by presenting a research procedure that was clear and logical, while neutrality was achieved by remaining neutral while reporting the study findings and by undertaking personal reflection in order to draw out and make explicit pre-understandings about spirituality.

FINDINGS

Within the experience of a life-limiting condition, seven main themes were identified. Four themes related to spirituality, namely: 'God', 'coping', 'religion' and 'relationships with others'. Three themes embodied spiritual engagement, namely: 'maintaining relationships', 'love' and 'participating in religious practices'. It was found that the fundamental experience of spirituality and spiritual engagement for palliative care clients was no different from that of the caregivers.

First, the themes relating to spirituality are discussed.

Theme 1: spirituality refers to 'God'. The most common description ascribed to the experience of spirituality was belief in 'God'. In the following extract, Frederick, a client, talks about relating to the God dimension. He said, 'Spirituality is believing that there is a living God that is concerned about your happiness every moment of your life. If I didn't have faith in God I think it will be very difficult to cope with this situation.'

Theme 2: spirituality is described as coping. Nearly all clients and caregivers had a reasoned response why spirituality took centre stage in times of crisis. In this study, it was revealed that spirituality gave them power, strength, courage, purpose and encouragement in spite of their situations. Many found spirituality to be helpful in their 'coping'. Frederick stated, 'My faith helps me cope … It takes the pressure off, removes fears about family and makes life easy.' Hilary, a caregiver, stated, 'My spirituality helped me cope during the time my husband was sick and during the time of his death … I did not feel so sad and abandoned.'

Theme 3: spirituality embodies religion. Commitment to religion was manifested in several ways including professed affiliation to a religious organisation, awareness of religious beliefs and involvement with religious workers. Diana, a client, revealed, 'I am a good Catholic and I practise my beliefs as best as I could. I am an active member of the local church, where I am a special minister for Holy Communion and for the elderly and sick. This is my pride and joy.'

Theme 4: spirituality is associated with 'relationships with others'. The following extract shows how a caregiver attributed spirituality to interpersonal relationships. Jonathan said that spirituality for him was about thinking and caring about others. He continued, 'Some would say the giving of oneself to others, to be of benefit or service to others. … It is the spiritual conviction that is going to be the greatest motivator to look after your kin …'

In the following section, the three main themes relating to the experience of spiritual engagement are discussed.

Theme 1: spiritual engagement is illustrated by 'maintaining relationships'. In referring to 'maintaining relationships', participants spoke about being intimate, showing concern, being present, rendering service to others and giving attention and support. Diana reflected, 'I think engaging in spiritual matters refer to the intimate times like when a friend would accompany me to the doctor, sleep with me in the hospital, or cook for me. … I appreciated another friend who gives me hand and back massages … We embraced, cried and prayed together.'

Theme 2: spiritual engagement describes love. The relationships were premised on 'love'. To love is to manifest a sense of selflessness and feeling for others. Isabelle was also a caregiver who described and reflected on the experience and stated, 'Spirituality for me is showing my love by being here caring for my husband every day … It means giving him my undivided attention as he was sick. Spirituality is showing my love by being with him every day because he didn't want to be left alone. … It means being comforting and long-suffering on behalf of others.'

Theme 3: spiritual engagement embodies participating in religious practices such as praying. Praying was generally understood to mean talking to God. There were different experiences of prayer and yet it was perceived to be 'powerful', 'uplifting' and 'helpful'. Hilary, a caregiver, intimated about her husband's situation, 'He had no religion but I believe in church. When I was with him all night long, I kept praying and praying [to the Lord] to help him. … We had priests, nuns, pastors, even from other religions praying for him. This was helping him spiritually because he knows somebody is praying for him and this helps me also.'

DISCUSSION

Through reflection and being immersed in the study, the researcher came to the realisation that her personal understanding of spirituality was related to transcendence. Her experience in engaging in spiritual matters was closely linked to the physical aspects of care delivered in her capacity as a nurse. Undertaking personal reflection was important to recognise overtly pre-understandings and preconceived notions about spirituality and spiritual expressions.

The study presented diverse understandings of spirituality similar to those described by Hassed (2002) and Reed (1992) but dissimilar to those earlier described by Barnhart (1988), Smith (1988) and Dickinson (1975). With the reality of death looming, spirituality became a priority for some participants and their view became focused on their present situation. For some, spirituality became central in their lives (Dombeck 1995). Woodruff (2004) and Fry (2000) contends that people's understanding of spirituality is influenced by many factors, including life experiences and various religious and cultural beliefs and practices.

In this study, it was found that many participants did not distinguish between spirituality and religion. The two concepts were found to be closely linked but they were not the same, as illustrated by Sheldon (2000) and Dyson, Cobb and Forman (1997). This finding may be attributed to factors such as age and cultural background. The majority of the participants were elderly and were immigrants from countries where religion played a dominant role in the people's lives. It was found that 'God' was the prime motivator of spirituality for the participants and 'religion' enriched participants' spirituality. Both sentiments revealed how the participants experienced spirituality as found in Christianity. This finding could be attributed to the fact that all participants affiliated themselves with Judaeo-Christian denominations, although not all were actively practising their faith. Of importance to this study was ethnicity, which might explain how some participants framed and expressed spiritual experience through culture. Many of the participants were from countries where Christianity is largely practised. This is interesting, considering its application in a multicultural and multifaith society like Australia.

Spirituality propelled people into positive actions. As such, it provided many real and potential benefits and was valuable for those engaged in it. This conclusion is supported by others such as Wink (2006), Baldacchino and Draper (2001) and Fisher (2000). The findings of this study are supported by Albaugh's (2003) phenomenologic study on spirituality and life-threatening illness which highlighted the comfort, strength and 'blessings' derived from spiritual involvement. In another study, Siegel and Schrimshaw (2002) reported that participants enumerated a variety of benefits, such as gaining strength, empowerment, control, social support, a sense of belonging and spiritual support through a personal relationship with God.

The participants in this study demonstrated the direct links between spiritual engagement and love by enumerating how love was manifested, including mundane activities such as visiting, having coffee, massaging, gift-giving and embracing. In addition, a deeper relationship that involved 'sharing intimate times' and 'understanding vulnerabilities' was mentioned. Time was an opportunity to show love and spending quality undistracted time was necessary for participants. Such sentiments have been similarly reported by Fryback (1993), who stated that people with advanced illness associated health with belief in a higher power that gave them the ability to love.

Engaging in spiritual issues will continue to be an important element for some people at the end of their lives. For this reason, health professionals should learn to tap into this valuable resource. This study raises health professionals' awareness of clients' and caregivers' capacity to articulate and express spirituality. This is important because spirituality can help them cope during this crucial time.

Health professionals, including nurses, can assist both clients and caregivers in maintaining personal relationships and religious practices, help identify spiritual meanings, look beyond present circumstances and help improve the quality of life. This may involve creating environments that value relationships, even amongst strangers and addressing unique spiritual needs. Consider Harrington's (2006, p. 181) exposition on the role of altruistic love in which health professionals spiritually connect with patients 'sacrificially'. Displaying caring behaviours is a way of incorporating spirituality into professional practice (Tanyi et al 2006).

The limitations of the study relate to the nature of phenomenological descriptions and non-return of transcripts to participants because of personal circumstances. There is no single phenomenological account that could embody the full complexity of spirituality and spiritual engagement.

CONCLUDING REFLECTIONS

In this phenomenological inquiry, the researcher set out to understand the lived experience of spirituality and engaging in spiritual matters for clients living with life-limiting conditions and their caregivers. In the process, the study identified the many benefits that may be derived from engaging in spirituality. The findings have relevance to clients and caregivers because they may wish to seek opportunities to discuss spiritual matters with health professionals. Palliative care workers also may find the implications applicable as they may be inspired to undertake personal and professional reflection and draw on this inquiry to find their own ways of assisting clients and caregivers.

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Predictors of nurses' commitment to health care organisations

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KEY WORDS

organisational commitment, job satisfaction, perceived organisational support, transformational leadership and level of education

ABSTRACT

Background
Nurses' commitment in the workplace is a psychological state linking them to their organisations. It has been viewed as a dimension of organisational effectiveness.

Objectives
The purpose of this study was to determine the multiple correlations between the four predictors (job satisfaction, perceived organisational support, transformational leadership behaviour and level of education) on the degree of organisational commitment among nurses in South Florida's long-term care facilities.

Method
The analytical procedure of multiple regression was utilised to determine the predicting strength among organisational commitment and the independent variables: job satisfaction, perceived organisational support, transformational leadership behaviour and nurses' level of education. To obtain the participants for this study, the researcher chose randomly four nursing homes located in Miami-Dade County. The participants were randomly chosen from a list of nursing staff provided by each facility.

Results
Pearson product-moment correlation coefficients were computed and revealed that positive correlation existed between nurses' commitment to their organisations, the dependent variable and job satisfaction, perceived organisational support, transformational leadership and level of education, the independent variables. Of the four independent variables, a multiple regression analysis indicated that job satisfaction and perceived organisational support were most strongly related to nurses' commitment to their organisations.

Conclusions
The study provides new support to previous research about the importance of nurses' commitment and satisfaction for organisational effectiveness and performance. It also provides further evidence that the more committed they are to their organisations, the more they will be productive in their organisations.

INTRODUCTION

Despite the large number of studies on organisational commitment (Best and Thurston 2004; Elloy 2005; Lee 2005; Loke 2001; Lok and Crawford 1999; Meyer and Herscovitch 2001; Silverthorne 2004; Sofie et al 2003; Yoon and Thye 2002), the influence of job satisfaction, how nurses perceive organisational support, leadership behaviour and level of education have received little attention among health care professionals. Organisational commitment has been viewed by Chen and Francesco (2003), Schwepker (2001) and Wasti (2002) as a dimension of organisational effectiveness, which contributes to increased nurses (perceived) effectiveness through work performance and reducing turnover. Research has also shown that increased commitment improves work performance and reduces absenteeism and turnover (Lu et al 2005; Wasti 2005; Wilson 2005).

Organisational commitment was described by Yoon and Thye (2002) as a construct that affected employees' work behaviours using two approaches. One is the emotional/affective approach, which focused on overall job satisfaction. The other is the cognitive approach, centered on the perceptions of support received from supervisors (organisational support). The focus of perceived organisational support and job satisfaction were also considered to be predictors of nurses' commitment to their organisations (Amold and Davey 1999; Eisenberger et al 1990; Kuokkanen et al 2003; Nystedt et al 1999).

Meyer and Allen (1991) argued the three components of commitment, affective, continuance and normative, have quite different consequences for other work-related behaviour, such as attendance, performance of required duties and willingness to go above and beyond the call of duty. Nurses with strong affective commitment feel emotionally attached to the hospital. This suggests these nurses have a greater motivation to contribute meaningfully to the organisation than nurses with weaker commitment. However, on the other hand, Meyer and Allen maintain that employees, who are linked to the organisation based on continuance commitment, stayed, not because of emotional attachment, but because of the realisation the cost associated with leaving was high. Meyer and Allen's (1991) third component of organisational commitment surmises that nurses with strong normative commitment are connected to the organisation by feelings of obligation and duty. This form of commitment encourages nurses to be positive toward work behaviours such as job performance and work attendance. The authors also argued that it was more appropriate to consider affective, continuance and normative commitment to be components, rather than types of commitment because an employee's relationship with an organisation might reflect varying degrees of all three components.

To investigate the effects of job satisfaction, perceived organisational support, leadership behaviour and level of education on the long-term care nurses' levels of organisational commitment, Yoon and Thye's (2002). Dual Process Model of Organisational Commitment and the three components of organisational commitment developed by Meyer and Allen (1991) provided the background to conduct this study on nurses' commitment to the organisations. Meyer and Allen developed a three component model based on the observation that there were both similarities and differences in existing unidimensional conceptualisations of organisational commitment. However, their work did not include the component of leadership behaviour. Studies conducted by Loke (2001), Lok and Crawford (2001), McColl-Kennedy and Anderson (2005) and Pillai and Williams (2004), revealed that leadership behaviour was a predictor of organisational commitment, a pertinent component in this study.

The purpose of this study focused on the predictive effects of job satisfaction, perceived organisational support, transformational leadership behaviour and level of education on the degree of organisational commitment among registered and licensed practical nurses in South Florida's long-term facilities using standardised instruments validated in previous research. Most studies of health care settings tend to focus on nurses and other medical personnel in acute care settings resulting in a major gap in the literature on issues and concerns of health professionals in long-term care settings. Studies of this nature and magnitude may be instrumental in helping administrators to better meet the needs of long-term care nurses employed in their organisations, which may have implications for service delivery. These study findings may serve to support the relationship of long term care nurses' organisational commitment (South Florida Long Term Facilities) to job satisfaction, perceived organisational support, transformational leadership behaviour and level of education.

The literature review revealed that aged care nurses perceived they were not appreciated and were treated differently than other health care professionals. Nurses are receiving almost no attention and no effort was made to make them feel as if they were important parts of the building organisation and management team. These feelings led to problems that caused low morale, lack of job satisfaction and the perception of very little or no organisational support (Wynd 2003; Grau et al 1991). This perception could contribute to a lack of organisational commitment. On the other hand, it was found that nurses have been very important parts of the health care system. The nursing work force of the next decade is forecasted to be driven by an increasing demand and decreasing supply of registered and licensed practical nurses, second only to aging of that workforce (laschinger et al 2001; McNeese-Smith 2001). Therefore, health care administrators must work harder to promote and develop methods for building organisational commitment among nurses and among other clinicians, before that imminent shortage occurs.

Studies have found strong positive relationships between organisational commitment and desirable work outcomes such as performance, adaptability and job satisfaction (Allen 2003; Allen and Meyer 1990a, 1996; Chen and Francesco 2003; Cheng and Stockdale 2003; Meryer et al 1993; Powell and Meyer 2004; Vandenberghe 2003). Other studies have also found negative relationships between organisational commitment and potentially costly work outcomes such as turnover and absenteeism (Bland et al 2006; Rosser and Townsend 2006; Dawley et al 2005; Kondratuk et al 2004; Meyer et al 2002). The way in which tasks or the work context were organised, the structure of the organisation and the management hierarchy, together with low levels of employee responsibility, job satisfaction, morale, leadership style, motivation and perceived organisation support, have all been associated with employee absenteeism (Rentsch and Steel 1998). This is a construct which has attracted scholars like; for example, Jaroset al (1993). The authors noted that for many decades, "the meaning of organisational commitment, gradually refined and it has evolved into a complex concept that can serve as a summary index of work-related experiences and as a predictor of work behaviours and behavioural intention" (p. 989). It can be argued that aspects such as these are all reflected within the extent of an individual's commitment to their organisation (Rosser and Townsend 2006).

A positive relationship between job satisfaction and organisational commitment has been reported by studies involving qualified professionals. A study was conducted by Wu and Norman (2005) in a nursing department of a medical university in China with a sample (75) of full time final year (clinical practice year) degree level nursing students. The authors found a positive correlation between job satisfaction and organisational commitment ($r = .464$, $P < .01$) indicating that student nurses who were more satisfied with nursing as a job were also more committed to the health care service. Redfern et al (2002) reported a strong relationship between job satisfaction and organisational commitment ($r = .60$, $P < .001$), in a study of the health care staff in the United Kingdom. Similarly, Al-Aameri (2000) found a strong positive correlation between job satisfaction and organisational commitment with a sample of registered nurses in Saudi Arabia ($r = .59$, $P < .01$). This finding is consistent with a large survey of qualified nurses in the United States of America (USA) conducted by Ingersoll et al (2002), which revealed a closely positive correlation between job satisfaction and organisational commitment ($r = .63$, $P < .001$).

Researchers have found that perceived organisational support is positively related to organisational commitment (Chen et al 2005; Casper and Buffardi 2004; Yoon and Thye 2002; Cheung 2000; Lok and Crawford 1999; Eisenberger et al 1990). Eisenberger and his colleagues (Eisenberger et al 1990; Eisenberger et al 1986) have argued employees developed generalised beliefs about the extent to which an organisation was supportive of its employees. Meyer et al (1990) have shown that organisational dependability enhanced affective commitment (the nurse's emotional attachment to, identification with and involvement in an organisation). Eisenberger et al (1990) observed a positive relationship between affective commitment and the extent to which employees believed the organisation provided them with needed support, valued their contribution and cared about their well-being. These investigations did not directly explore links between these variables and continuance commitment (commitment based on the costs that an employee associated with leaving an organisation); although they suggested that perceived support would also enhance this form of commitment by creating an atmosphere of trust in the organisation's willingness to fulfil its obligations toward employees.

Previous research has devoted a great deal of attention to the relationship between leadership behaviour and organisational commitment. The findings in this area, however, are not entirely consistent. Several studies found a positive relationship between the two variables (Rowden 2000; Yousef 2000). In contrast, Savery (1991) reported no linkages between organisational commitment and leadership behaviour. Rowden (2000) studied a total of 245 respondents from six organisations in the south eastern USA. Yousef (2000) investigated the potential mediating role of organisational commitment in the relationship of leadership behaviour with the work outcomes of job satisfaction and job performance in a non-western country where multiculturalism is a dominant feature of the work force. Results indicated there were significant positive relationships between leadership behaviour and organisational commitment ($r = .54$, $p < .01$). The results of moderated multiple regression analysis showed that national culture has moderating impacts on the relationship between leadership behaviour and job satisfaction. However, it has no moderating impacts on the relationship between leadership behaviour and organisational commitment and job performance, or the relationships between organisational commitment and job satisfaction and performance.

Previous organisational studies have shown level of education affects organisational commitment (Lee 2005; Buchko et al 1998; Mathieu and Zajac 1990; Mottaz 1988). Also, it has been reported to be negatively correlated with organisational commitment (Mathieu and Zajac 1990; DeCotiis and Summers 1987; Mottaz 1988; Mowday et al 1982). It has been argued this inverse relationship is attributable to the fact more highly educated individuals have higher expectations or greater alternative job opportunities (Grau et al 1991; Mathieu and Zajac 1990). They are therefore more likely to feel they are not being rewarded adequately by their employers and so the level of organisational commitment can be perceived as diminished (DeCotiis and Summers 1987). On the other hand, Sikorska-Simmons (2005) examined the role of organisational culture, job satisfaction and level of education as predictors of organisational commitment among staff in assisted living. Findings showed education is a significant predictor of organisational commitment. Staff members who were more educated tended to report higher levels of commitment ($\beta = .10$, $p < .05$). Results from the Buchko et al (1998) study, using 180 workers from a privatised Russian organisation, revealed that education was not significantly correlated with organisational commitment ($r = .059$, $p > .05$).

DESIGN

The study took place at private, not-for-profit, nursing homes in the South-eastern USA. The nursing population was diverse including a large representation of white non-Hispanic, Hispanic and Black-non-Hispanic nurses. Four nursing homes were included in the study. The average capacities of these facilities were around eight hundred beds with a total of 192 nurses serving in these facilities. The majority of the nurses were licensed practical nurses with at least eighteen months of training in nursing.

The study utilised the analytical procedure of multiple regression to determine whether job satisfaction, perceived organisational support, transformational leadership and level of education predict a score on the Nurses' Organisational Commitment Questionnaire.

To obtain the participants for this study, the researcher randomly chose four nursing homes from a total of 53 Medicare/Medicaid certified nursing homes located in Miami-Dade County (Stabley 2005). Miami-Dade County was divided into four geographical quadrants: north, south, east and west; the researcher randomly chose one nursing home from each quadrant. The participants were randomly chosen by the directors of nursing from a list of nursing staff provided by each facility. To assure anonymity, the list had only identifying numbers representing nurses in each of the randomly chosen facilities.

A simple random sample was used to select 15 participants from each one of the four nursing homes, using a procedure that gives every nurse a known, nonzero and equal chance of being included in the sample (Salkind 2003). Before the sample was drawn, every participant in the sampling frame was assigned a unique identifying number and then all numbers placed on a list for each nursing home; after the nursing directors of the randomly chosen facilities selected a total of 60 nurses.

Data Collection Procedures

The sample groups were invited to participate voluntarily by a recruitment letter attached to the survey questionnaire. The purpose of the study was explained and the nurse was allowed to decline if he/she did not want to participate. The instruments and the survey questions were assembled in packets and were distributed by nursing directors to each individual employee who met the study criteria. The questionnaire was completed in a private room and took about 45 to 60 minutes. Written guidelines were given to the administrators of the questionnaire to assure each nurse received the same directions and information. After the questionnaire was completed, the nurse deposited the questionnaire in a sealed envelope in the collection box to assure anonymity. The information provided by the participants was completely anonymous and no names or identifying numbers were collected on any of the instruments. 92% of surveyed nurses responded.

Research Question

In order to determine the multiple correlations between the four predictors (job satisfaction, perceived organisational support, transformational leadership behaviour and level of education) on the degree of organisational commitment among registered and licensed practical nurses in South Florida's long-term facilities, an answer was sought to the following research question:

What is the multiple correlation between the predictors (job satisfaction, perceived organisational support, transformational leadership behaviour and level of education) and the nurses' organisational commitment?

Data Collection Measures

In addition to demographic information, the Nurses' Organisational Commitment Questionnaire focused on respondents' level of organisational commitment, job satisfaction and perceived organisational support. All items of organisational commitment and perceived organisational support were responded to on a 7-point likert scale. The items from job satisfaction were responded to on a 5-point likert scale. Total scores on each measure were obtained by averaging across items.

The dependent variable, organisational commitment, was measured by a 23 item index called Organisational Commitment Questionnaire (OCQ) developed by Meyer et al (1993) with an estimated Cronbach's alpha .85 (Feather and Rauter 2004). Job Satisfaction was measured by a 20 item index called Minnesota Satisfaction Questionnaire (MSQ) short-form, developed by Weiss et al (1967) with an estimated Cronbach's alpha .91 (Ben-Bakr et al 1994). The

MSQ, a self-reported instrument consists of 20 items that sample job satisfaction on 20 scale areas, is an often used and widely researched job satisfaction measure (DeMato and Curcio 2004; Hancer 2003; Hirschfeld 2000). It was derived from the Minnesota Studies in Vocational Rehabilitation in 1967 and was revised in 1977.

Perceived Organisational Support was examined via a 16-item questionnaire called Survey of Perceived Organisational Support (SPOS) scale, developed by Eisenberger, Huntington et al (1986). The SPOS scale was composed of sixteen items for which the participants used a 7-point likert scale (1 = strongly disagree, 7 = strongly agree) to indicate the extent of their agreement with each item. The scores ranged from 16 to 112, with higher scores indicating higher perceived organisational support. The Cronbach's alpha for these items was found to be reliable at .75 (Yoon and Thye, 2002).

To evaluate the nurses' perceptions of their administrators' transformational leadership behaviour, study participants were asked to respond to 12 descriptive elements of transformational leadership behaviour developed by Bass and Avolio (1992). The Multifactor Leadership Questionnaire (MLQ) Form 6S (Bass and Avolio, 1992) included 12 items to measure the four factors of transformational leadership. It contains three items each for idealised influence, inspirational motivation, intellectual stimulation and individualised consideration. Respondents were requested to answer the MLQ by rating how frequently their current immediate supervisor had displayed the behaviours described, using a five-point scale (1 = not at all; 2 = once in a while; 3 = sometimes; 4 = fairly often; 5 = frequently, if not always). The mean rating on the three items comprising a factor was taken as the score of that factor.

In the recent study conducted by Zhu et al (2005), testing an integrated theoretical model relating chief executive officers' transformational leadership, the authors found human-capital-enhancing human resource management fully mediates the relationship between chief executives' transformational leadership and subjective assessment of organisational outcomes and partially mediates the relationship between chief executives' transformational leadership and absenteeism. The authors administered a total of 1,050 questionnaires to senior human resources executives and chief executives of selected firms drawn from the Singapore exchange listing. Zhu and colleagues (2005) reported the six items of idealised influence alpha = .84, the four items of individualised consideration alpha = .84, the four items of intellectual stimulation = .85, the two items of contingent rewards alpha = .85, the two items of management by exception active alpha = .82 and the two items of management by exception passive alpha = .79.

Research Findings

Pearson product-moment correlations coefficients (r) were conducted to determine whether a relationship existed between the dependent variable organisational commitment and the independent variables, job satisfaction, organisational support, transformational leadership behaviour and level of education. In addition, a multiple regression analysis was conducted to evaluate the predictive values of job satisfaction, perceived organisational support, transformational leadership behaviour and level of education on the nurses' organisational commitment in health care organisations. All analyses were conducted at the .05 significance level.

Pearson correlation coefficients were computed to determine the relationship between organisational commitment, job satisfaction, perceived organisational support, transformational leadership and level of education. In table one, the correlation matrix depicts a significant correlation of, r(55)=.93, p ≤ .05, between the job satisfaction scores and organisational commitment scores. The correlation coefficient suggests higher job satisfaction scores are related to higher organisational commitment scores and the correlation .93 indicated approximately 87% of variance of organisational commitment was accounted for by the predictor, job satisfaction. Table one, demonstrates the perceived organisational support and transformational leadership scores positively correlated with organisational commitment scores (r = .92, p ≤ .05, r = .71, p ≤ .05, respectively). This finding suggests higher scores in perceived organisational support and transformational leadership are associated with increased organisational commitment. Correlational analysis of level of education and organisational commitment revealed a significant positive correlation, r = .30, p ≤ .05 and indicated approximately 9% of variance of organisational commitment was accounted for by the predictor, level of education. Table five also depicts positive correlations between the independent variables of job satisfaction, perceived organisational support, transformational leadership and level of education.

To view overall nurses' organisational commitment, a multiple regression analysis was conducted. The model analysis included the four independent variables of job satisfaction, perceived organisational support, transformational leadership and level of education. The linear combination of the four independent variables was significantly related to the dependent variable (organisational commitment), R squared = .91, adjusted R squared = .90, F (4, 50) = 129.35, P = .000 (Table 2). An estimated 91% of variance of the organisational commitment index can be accounted for by the linear combination of predictors, job satisfaction, perceived organisational support, transformational leadership and level of education.

Table 1: Pearson correlation of organisational commitment, job satisfaction, organisational support, transformational leadership and level of education

	OC	JS	OS	TL	LE
OC Pearson Correlation	1				
Sig. (2-tailed)	.				
JS Pearson Correlation	.935**	1			
Sig. (2-tailed)	.000				
OS Pearson Correlation	.920**	.931**	1		
Sig. (2-tailed)	.000	000	.		
TL Pearson Correlation	.717**	.717**	.681**	1	
Sig. (2-tailed)	.000	.000	.000	.	
LE Pearson Correlation	.307*	.196	.165	.251	1
Sig. (2-tailed)	.023	.151	.229	.064	.

Note. *Correlation is significant at the 0.05 level (2-tailed). **Correlation is significant at the 0.01 level (2-tailed). (JS = Job Satisfaction; OS = Organisational Support; TL = Transformational Leadership; LE = Level of Education; OC = Organisational Commitment.

Table 2: Multiple linear regressions for a single set of predictors: model summary and ANOVA

Model Summary					
	Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	1	.955	.912	.905	3.345
ANOVA					
	Sum of Square	df	Mean Square	F	Sig.
Regression	5791.851	4	1447.963	129.357	.000
Residual	559.676	50	11.194		
Total	6351.527	54			

Predictors: Transformational Leadership, Level of Education, Organisational Support and Job Satisfaction. Dependent Variable: Organisational Commitment.

As indicated in table 3, the three measures of predictors, job satisfaction, perceived organisational support and level of education were most strongly related to organisational commitment. Supporting this conclusion was the strength of the bivariate correlation between job satisfaction and organisational commitment, which was .93 and perceived organisational support, which was .92, p ≤ .001. Transformational leadership behaviour was found not to be a significant predictor of organisational commitment when entered with the other independent variables.

Table 3: Multiple Linear Regressions for a Single Set of Predictors: Coefficients

Independent Variables	Unstandardised Coefficient		Standardised Coefficient		
	B	Std. Error	Beta	t	Sig.
(Constant)	7.120	4.386		1.623	.111
Level of Education	1.558	.527	.129	2.957	.005
Job Satisfaction	.613	.143	.517	4.277	.000
Organisational Support	.395	.120	.379	3.296	.002
Leadership	.102	.111	.056	.911	.366

Dependent Variable: Organisational Commitment.

The results from the regression equation for the standardised variables were as follows: Predicted organisational commitment score = 7.120 + 1.558 (level of education) + .613 (job satisfaction) + .395 (organisational support) + .102 (transformational leadership) (shown in Table 3). Based on the findings, the null hypothesis was rejected.

This study provides new support to previous research about the importance of nurses' commitment and satisfaction and how these factors enhance organisational effectiveness and performance. It also provides further evidence the more committed they are to their organisations, the more they will be productive and effective in their organisations. This gives a clear message to all nursing home administrators and nursing directors to pay considerable attention to the issues of organisational commitment and job satisfaction for nurses and other employees in their institutions.

The findings indicated there was a strong correlation between nurses' organisational commitment and job satisfaction, $r(55) = .61, p \leq .05$, nurses' organisational commitment and perceived organisational support, $r(55) = .39, p \leq .05$, nurses' organisational commitment and transformational leadership, $r(55) = .10, p \geq .05$ and nurses organisational commitment and level of education, $r(55) = 1.55, p \leq .05$. Multiple regression analysis indicated 91% of the variance in nurses' organisational commitment was explained when considering of the principal independent variables.

DISCUSSION

Although there remains a plethora of research on organisational commitment, there remains a scarcity of studies that have focused on organisational commitment and nurses in the long-term care industry. The results in this study revealed a positive correlation existed between the dependent variable, organisational commitment and all independent variables, job satisfaction, perceived organisational support, transformational leadership behaviour and level of education. Job satisfaction reflected the strongest correlation, followed by perceived organisational support, level of education and transformational leadership behaviour, respectively. The multiple regression performed in this study indicated 91% of the variance in organisational commitment was accounted for by the linear combinations of job satisfaction, organisational support, transformational leadership behaviour and level of education. Job satisfaction was determined to be the strongest predictor of the four variables and transformational leadership behaviour was the weakest predictor of organisational commitment.

Relationships among nurses' organisational commitment, job satisfaction, perceived organisational support, transformational leadership behaviour and level of education are numerous and varied in the literature (Lok and Crawford 2001; McNeese-Smith 2001; Mathiew and Zajac 1990; Price and Mueller 1981). Significant positive correlation between organisational commitment and job satisfaction, ($r = .61, p \leq .05$), was consistent with a number of studies (Yousef 2000; Wilson 1995; Savery 1994; Gilsson and Durick 1988). The findings of significant correlations between organisational commitment and perceived organisational support ($r = .39, p \leq .05$), transformational leadership behaviour ($r = .10, p > .05$) and educational level ($r = 1.55, p \leq .05$) were also consistent with the results of previous studies (Chen et al 2005; Casper and Buffardi 2004; Yoon and Thye 2002; Cheung 2000; Lok and Crawford 1999; Eisenberger et al 1990; Mueller and Price 1990). Furthermore, the results that the relationships between organisational commitment and job satisfaction, perceived organisational support, transformational leadership behaviour and level of education are positive and significant indicate those who are committed to their organisations are more satisfied with their job and their performance is high.

It was very surprising to discover perceived organisational support was one of the most salient independent variable, considering the different conclusions stated in the literature. According to Wynd (2003) nurses received virtually little attention and no effort was made to make them feel as if they were important parts of the building organisation (the process by which organisations eventually reach the ideal of learning organisation) and management team. These feelings led to problems that caused low morale, lack of job satisfaction and the perception of very little or no organisational support. This study provided contrary results. Most of the nurses felt their employers supported them.

This study also indicated there was a positive relationship between job satisfaction and organisational commitment. Job satisfaction has been mostly concerned with the intrinsic and/or extrinsic feelings employees had about their job. Research has provided several findings regarding the relationship between job satisfaction and organisational commitment. Bateman and Strasser (1984) found a causal correlation between the two variables. Price and Mueller (1986) concluded the relationship between job satisfaction and organisational commitment did not exist. Mueller and Price (1990) determined job satisfaction was the strongest predictor of organisational commitment and organisational support was the second strongest. This study however, produced similar results indicating job satisfaction was the stronger predictor of organisational commitment, than perceived organisational support.

Transformational leadership behaviour also influenced organisational commitment in this study and it is consistent with the earlier research (Pillai and Wiliams 1998; Bass 1997). Transformational leadership elicits support from members of the organisation through their acceptance of the organisation's values, goals and behaviours based on interaction with the transformational leader (Bass 1985). In the past, researchers like Podsakoff et al (1996) Pillai and Wiliams (2004) believed there was a link between organisational commitment and transformational leadership behaviour.

Consistent with the idea transformational leadership behaviour can influence nurses' organisational commitment, the results of this study helped clarify the relative importance of leadership in determining how nursing staff feel about their jobs. This is an important finding because leadership has not been included in most recent studies of health care organisational commitment. Therefore, although job satisfaction has a significant influence on the satisfaction of nursing staff, the impact of transformational leaders can be significantly greater in scope.

In addition, education emerged as the third significant predictor of organisational commitment. Contrary to the literature, more educated staff members tended to report higher levels of commitment, regardless of their perceptions of perceived organisational support and job satisfaction. This positive relationship between education and commitment might be due to the fact staff members who had more education occupied higher status positions and were more involved in decision making in the organisation. Research has shown greater participation in decision making is strongly associated with higher levels of job satisfaction and organisational commitment (Laschinger et al 2001; Laschinger et al 2000). In nursing homes, staff members who occupy higher status positions, which provide more opportunities for involvement in decision making, report higher job satisfaction and greater commitment than the less educated paraprofessional staff (Sikorska-Simmons 2005).

LIMITATIONS

The present study has several limitations, some of which relate to all leadership research.

1. The information obtained for this study was dependent on the participants' self reported responses. This limitation may have influenced the responses if the nurses felt an obligation to support their directors based on their administrative position and future work relations.
2. Survey research requires the use of standardised questionnaires which can "result in fitting of round pegs into square holes" (Bebbie 1986, p232). Additionally, the nature of non-experimental research design such as a survey does not provide conclusive evidence of causality. Surveys are only able to "collect self-reports of recalled past action" (Babbie 1986, p. 233) and are therefore, subject to contamination by mood, attitude, antecedent or intervening variables. Babbie (1986) suggested survey responses tend to be artificial and only approximate measures of what a respondent is thinking. This limitation results in questions of validity.
3. Respondents to the various measures in this study participated voluntarily. As such, the effects of potential systematic bias in non-responses are unknown.
4. The sample the researcher used for this study was from four small nursing home corporations. Results of the study may not be generalisable to other populations.
5. The simple random sampling technique, though appropriate for the present study, assumes the population is typical and may therefore, have selection bias. Voluntary participation of respondents also may contribute to selection bias.
6. The small number of survey participants made analysis manageable but could have reduced the survey validity. Certainly this survey could and should be replicated on the larger scale.

IMPLICATIONS AND RECOMMENDATIONS

One of the major implications a study of this nature raises is the manner in which health care administrators monitor the work climate and observe and identify factors that may increase or decrease job satisfaction and the work commitment of nursing staff. The cost associated with leaving employment or an organisation is high. In this study nurses have identified behaviours and conditions that promote job satisfaction, perceived organisational support and how they can develop and/or maintain organisational commitment. They are more likely to be more committed to the organisation when they are provided an appropriate amount of support. The perception the organisation also focuses on transformational leadership behaviour may also contribute to employee commitment to their organisation. Another implication is health care administrators should stay abreast of the current trends and factors that contribute to organisational commitment. Issues related to job satisfaction and organisational support, such as unfair work conditions, salary inequities, lack of employee support, should be addressed promptly and justly.

The present study explored many aspects of nurses' organisational commitment. It is important to note that this sample of relatively well-educated respondents from South Florida may not be representative of the larger national population of professional nurses. Future research is needed to investigate these relationships among a larger and more highly educated population.

This study used the likert questionnaires to measure organisational commitment, job satisfaction, perceived organisational support and transformational leadership behaviour. It would be interesting to test the sensitivity of the results by using other measures of organisational commitment, job satisfaction, perceived organisational support and transformational leadership behaviour or to utilise more than one measure. This study has concentrated only on the impact of job satisfaction, perceived organisational support, transformational leadership and level of education on the nurses' organisational commitment. Therefore, looking into the impact of transactional leadership behaviour and organisational culture on such relationships appears worthy of future research.

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The relationship between clinical outcomes and quality of life for residents of aged care facilities

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KEY WORDS

quality of care, aged care, residential facilities, quality assessment, quality of life

ABSTRACT

Objectives

It is widely assumed improving care in residential facilities will improve quality of life (QoL), but little research has explored this relationship. The Clinical Care Indicators (CCI) Tool was developed to fill an existing gap in quality assessment within Australian residential aged care facilities and it was used to explore potential links between clinical outcomes and QoL.

Design and Setting

Clinical outcome and QoL data were collected within four residential facilities from the same aged care provider.

Subjects

Subjects were 82 residents of four facilities.

Outcome Measures

Clinical outcomes were measured using the CCI Tool and QoL data was obtained using the Australian WHOQOL-100.

Results

Independent t-test analyses were calculated to compare individual CCIs with each domain of the WHOQOL-100, while Pearson's product moment coefficients (r) were calculated between the total number of problem indicators and QoL scores. Significant results suggested poorer clinical outcomes adversely affected QoL. Social and spiritual QoL were particularly affected by clinical outcomes and poorer status in hydration, falls and depression were most strongly associated with lower QoL scores. Poorer clinical status as a whole was also significantly correlated with poorer QoL.

Conclusions

Hydration, falls and depression were most often associated with poorer resident QoL and as such appear to be key areas for clinical management in residential aged care. However, poor clinical outcomes overall also adversely affected QoL, which suggests maintaining optimum clinical status through high quality nursing care, would not only be important for resident health but also for enhancing general life quality.

INTRODUCTION

Monitoring quality of care is of increasing interest within aged care facilities. However, Australia does not yet have a comprehensive system of assessment that can monitor the quality of clinical outcomes in residential aged care settings (O'Reilly et al 2007). The Minimum Data Set (MDS) is a comprehensive system of assessment employed within nursing homes in the United States of America. Information is collected on a number of clinical areas and then collated into meaningful data for interpretation (Mor et al 2003). Integral to this process is the use of Quality Indicators (Mor et al 2003; Zimmerman et al 1995). However, while an excellent system, it is based on American data and linked to USA administrative processes. Therefore, simple adoption of the instrument in Australian facilities would not necessarily be prudent or appropriate.

Quality of care is difficult to define and measure (Mor 2005; Mor et al 2003; Marquis 2002; Donabedian 1992; Doyle and Carter 1992) but one approach to measurement is through use of quality indicators. These are not direct or definitive measures of quality; rather, they *indicate* areas of care requiring greater scrutiny (Courtney and Spencer 2000; Karon and Zimmerman 1998, 1996; Zimmerman et al 1995). Donabedian (1992) suggested quality evaluation can occur in the areas of structure, process or outcome, with outcomes representing the result of all inputs into care. Knowledge of a strong causal relationship between existing structures and processes and the final outcome enables confidence in assuming the care provided was largely responsible for the outcome achieved (Weissman et al 1999; Donabedian 1992, 1988, 1987).

It is widely assumed improving care will improve quality of life (QoL) but little research has investigated this link. Thus, there is a need not only to identify effective methods of assessing and enhancing quality of care but also to identify its effect on QoL and more specifically, which areas of care have the most impact (Harrington et al 1999; Bartlett and Burnip 1998).

As with quality of care, it is well established that QoL is an imprecise concept that has different meanings for different people (Hambleton et al 2009; Bowling 2007; Walker and Mollenkopf 2007; McDowell 2006). When reviewing QoL in older people, the psychosocial domain becomes particularly important, especially in the context of declining physical health (Hambleton et al 2009; Bowling 2007; Walker and Mollenkopf 2007; Byrne and MacLean 1997). Indeed, it has often been found people with significant health problems or functional impairment rate themselves more highly on QoL scales than expected by researchers or care professionals (Walker and Mollenkopf 2007; Carr and Higginson 2001; Guse and Masesar 1999; Rai et al 1995; Arnold 1991). Carr and Higginson (2001) referred to this as the "disability paradox" (p.1358). Further, living within residential care settings is qualitatively different to living within the general community and because of this there are a number of factors that are uniquely important to residents of such facilities (Courtney et al 2003). For example, the lives of aged care facility residents tend to be more regimented than those living in their own homes, thus factors relating to daily routine or control can assume more importance (Bowling 2007; Edwards et al 2003; Kane 2001; Byrne and MacLean 1997). Moreover, residents are frailer than older people in the community and as such clinical status is an issue requiring consideration (Vaarama et al 2007).

The scope of this paper

With the above factors in mind, the authors wished to explore whether clinical outcomes would be related to QoL in residents of aged care facilities. The research described here was part of a larger project, which developed the Clinical Care Indicators (CCI) Tool for use in Australian residential aged care facilities. The CCI Tool was designed to provide an indication of care quality through use of clinical outcome data. Collapsing such data into percentage scores indicating the presence or absence of particular problems allows for comparison between facilities, as well as enabling individual facilities to monitor their own outcomes and to decide on areas of focus for quality improvement. Its development and features are described elsewhere (Courtney et al 2007).

METHOD

Instruments and Administration

Clinical Outcomes

Clinical Care Indicators (CCI) Tool (Courtney et al 2007): As described above, this tool was developed as a means of collecting comprehensive clinical indicator data for use in the residential aged care context. It was developed in consultation with industry representatives, as well as through extensive literature review and a small national trial (Courtney et al 2007). The version used for this paper covered 23 areas of care, as outlined in Table 1. At the time of the research it had not yet undergone validity and reliability testing, but it had proven to be a useful tool, yielding comprehensive clinical data for analysis. Psychometric testing is currently underway and will be reported on in the near future.

Table 1: Care Domains, Clinical Areas and Clinical Care Indicators from the CCI Tool (Version II)

Care Domains	Clinical Area	Clinical Care Indicators (CCIs)
Resident Health	1. Pressure ulcer rates	Presence of Ulcers
	2. Skin integrity	Presence of Lesions
	3. Infections	Presence of Infections
	4. Medication	a. Polypharmacy b. No Pharmacy Review
	5. Pain management	a. Pain frequency: Daily Pain b. Pain severity: Severe pain
	6. Cognitive Status	Decline in Cognitive Function
Personal Care	7. Continence	a. Bladder Continence b. Bowel Continence
	8. Hydration status	Poor Hydration
	9. Activities of daily living	Activities of Daily Living Decline
	10. Dental Health	Poor Dental Health
	11. Care of the senses	a. Sensory Decline b. Sensory Aids
Resident life style	12. Nutrition	Poor nutritional status
	13. Meaningful activity	Meaningful Activity
	14. Sleeping patterns	a. Sleep disturbance b. Use of sedatives
	15. Communicating	a. Communication difficulties b. Communication difficulties without use of communication aids c. Difficulties with English language without access to translators
	16. Adaptation and behaviour patterns	Disruptive Behaviour
Care Environment	17. Restraints	a. Physical Restraints b. Chemical Restraints
	18. Falls	Falls in the last month
	19. Depression	a. Symptoms of depression b. Symptoms of depression without treatment
	20. Family involvement	Family support
	21. Allied health	Allied Health Contact
	22. Doctor visits	Visits by Doctor/ Specialist
	23. Multi-disciplinary Case Conferences	Multi-disciplinary case conferences

Presence of a clinical problem in an individual resident is indicated through a clinical care indicator being triggered. Some of these are simple (eg are pressure ulcers present or not), while others are triggered by a threshold (eg presence of polypharmacy is indicated by a resident taking more than nine medications).

A registered nurse at each study facility was seconded to complete CCI Tools on each consenting resident, with data submitted to the research team in de-identified form. This ensured accuracy of clinical data while maintaining participant confidentiality.

Quality of Life

The Australian WHOQOL-100 (WHOQOL Group 1998; Murphy et al 2000): After reviewing numerous tools, Courtney et al (2003) identified the WHOQOL-100 as one of the most suitable means of assessing QoL for residents of aged care facilities. It is comprehensive and subjective in focus, underwent an extensive development process and has sound psychometric properties (WHOQOL Group 1993, 1994a, 1994b, 1995, 1998). It includes spirituality and the environment, which are not commonly present on other QoL scales but both of importance for residents of aged care facilities (Courtney et al 2003). It presents its results as a profile of six domains (*physical, psychological, independence, social relationships, environment and spiritual*), as well as *overall quality of life and general health* as a separate score (Murphy et al 2000). A limitation of the tool is it cannot be used with people who have moderate-severe cognitive or communication impairments. However, this is common to many QoL questionnaires.

Possible scores for the six domains range from 4 to 20, with higher scores indicative of better QoL; for ease of analysis they can also be converted to a scale ranging from 0 to 100, with scores representing a percentage of the total possible score (Murphy et al 2000). The *overall QoL and general health* score also ranges from 4-20, but it cannot be converted into a '0-100' score.

The project manager and a research assistant, independent to the study facilities, administered the WHOQOL-100 surveys via interview; this enabled residents to discuss potentially sensitive lifestyle information separate to facility staff. Respondents were also given the option of survey self-completion.

PARTICIPANTS

Facilities

Four residential aged care facilities from the same provider participated in the study. All were medium-sized (40-80 beds), with a mix of high care and low care residents. While in previous years, high care residents would have been housed in nursing homes and low care residents housed in hostels, 'Ageing in Place' policies in Australia now results in many facilities containing residents designated both high care and low care. Thus the facilities used in the study were considered reasonably representative.

Residents

The resident sample was one of convenience – whereby we recruited the first available 25 (± 2) willing participants in each facility who had not been excluded due to moderate/severe cognitive or communication impairment. The proportion of residents in each facility who were included in the sample ranged from 26% to 42%. At commencement, 107 residents consented to participate, but while CCI data were collected for all of these, QoL questionnaires could only be completed for 82 residents, due to the reliance on face-to-face contact (some residents were unavailable at the time of interview).

Data Analysis

Frequency distributions of all variables were generated and inspected. A small number of invalid codes were identified and corrected by consulting the original data. The variable distributions were also inspected for extreme values and outliers, but none were detected. In almost all cases, results were normally distributed and parametric statistical techniques (independent samples t-tests, Pearson's r correlations) were used to analyse the data. On two occasions, results were not normally distributed due to small sample sizes, so the non-parametric Mann-Whitney U-test was used as an alternative.

Alpha was set at 0.05, but to compensate for the effects of multiple comparisons and the possibility of Type 1 error, Ottenbacher's percentage error rate (Ottenbacher 1988) was calculated. Out of a total of 206 individual comparisons, 27 significant results were generated; application of Ottenbacher's equation, 100C/M (where C = the total number of comparisons and M = the number of significant results), indicated 38% (or ten) of the significant results would have occurred by chance. Adjusting α to 0.03 eliminated eight results (29.6%), while adjusting α to 0.02 eliminated 14 results (52%); to maintain statistical rigour, the more conservative adjusted α of 0.02 was chosen.

FINDINGS

Resident Characteristics

Table 2 lists the sample characteristics in regards to gender, care level, living space and length of stay. The gender distribution was similar to the national residential care population. Nationally, men constitute 28.8% of aged care facility residents (AIHW 2008), while in this sample, 27.6% of the group were male. However, the proportion of high care residents (36.8%) was markedly lower than the national figure of 70% (AIHW 2008). This is likely because of the need to recruit residents with adequate cognitive and communication abilities, fewer of whom would be categorised as high care. Just over half the sample resided in private spaces (i.e. private room and ensuite or shared with spouse only); this reflects the mix of facilities in the sample, two of which were older buildings, containing more shared facilities. More recent trends in residential care design have tended to favour private rooms and bathrooms. Nearly three-quarters of the residents had resided in their facility for five years or less and at least one in four had resided in their facility for less than a year. The AIHW (2008) found similar figures, with 53% of residents in 2007 having resided in an aged care facility for one to five years and 26% for one year or less.

Table 2: Descriptive Statistics - Resident Gender, Care Level, Living Space and Length of Stay (N=107)

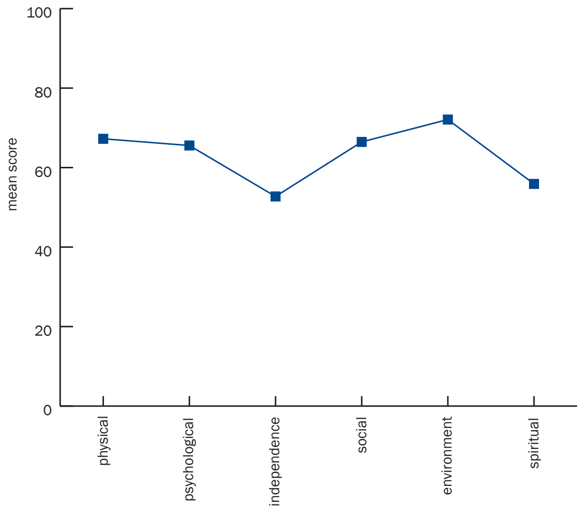
		Count (%)
Gender	Female	76 (72.4%)
	Male	29 (27.6%)
Care Level	High Care	39 (36.8%)
	Low Care	67 (63.2%)
Living Space (N=81, 26 missing)	Private	48 (59.3%)
	Shared	33 (40.7%)
Length of Stay	Under 1 year	27 (25.2%)
	1 – 5 years	60 (56.1%)
	Over 5 years	20 (18.7%)

The sample had a median age of 83 years (range: 66 to 98 years), also similar to the national figures, whereby in 2007 more than half (54%) of the Australian residential aged care population was 85 or older (AIHW 2008).

WHOQOL-100 Domain Scores

Mean domain scores (0-100 scale) are shown in Figure 1. Participants' lowest scores were in the *independence* domain (mean 52.7) and their highest in the *environment* domain (mean 72.1). The profile reflects moderate QoL in each of the domains except for *independence* and *spirituality*, for which slightly lower scores were recorded.

Figure 1: WHOQOL Domain Scores (0-100 Scale)



The unconverted means of all domains, including *overall QoL and general health,* were compared to community means from the WHOQOL Australian field test (Murphy et al 2000) (Table 3); note these scores are from a possible range of 4-20. The differences between mean scores for both groups were not statistically significant in the domains of *overall QoL and general health*, *psychological health or social relationships*. However, the residential care group's mean score for *independence* was nearly four points lower than the WHOQOL field test sample, which was highly significant ($t^{380}=10.38$, $p<0.0001$). The differences in mean scores for three other domains were also statistically significant; the residential care mean for the *spiritual* domain was just over one point lower than the general population mean ($t^{380}=2.74$, $p<0.02$), while mean scores for the residential care group were significantly higher in two domains - *physical health* ($t^{380}=2.72$, $p<0.02$) and *environment* ($t^{380}=2.62$, $p<0.02$)

Table 3: Sample WHOQOL-100 Domain Scores [Mean (SD)] and results from the Australian field test (Murphy et al 2000, p. 16)

Domain	Sample (n=82)	WHOQOL Field Test (n=300)†	Statistics	
			t	p
Overall QoL and General Health	14.0(3.5)	14.7(2.7)	1.94	0.05
Physical Health	15.0(2.5)	14.1(2.7)	2.72	0.01*
Psychological Health	14.5(2.1)	14.7(2.1)	0.76	0.45
Independence	12.4(2.7)	16.2(3.0)	10.38	<0.0001**
Social Relationships	14.8(1.9)	14.8(2.7)	0	1.0
Environment	15.6(1.6)	15.0(1.9)	2.62	0.01*
Spiritual	13.0(3.9)	14.2(3.4)	2.74	0.01*

(†) (Murphy et al 2000), (*) Significant, (**) Highly significant

As previous research indicated relationships between QoL and age, gender, care level, length of stay and living arrangements (Courtney et al 2003), these were tested statistically by correlation and t-test analyses. However, no significant associations were found.

QoL and Clinical Indicators

Individual Clinical Care Indicators

Independent t-test analyses were calculated for each clinical care indicator (CCI) and each domain of the WHOQOL-100[1], with a number of significant results found (adjusted $\alpha=0.02$). The CCIs cognitive decline, ADL decline and sensory decline were not included for analysis, as these are incidence indicators, requiring follow-up data.

Most noteworthy was dehydrated residents recorded poorer QoL for all WHOQOL domains, with the differences for three domains (social, environment and spiritual) being significant (see Table 4).

Table 4: Association between dehydration and QoL domains – independent t-test analyses

WHOQOL-100 Domain	Dehydration Present	N	Domain Score Mean	Significance (α=0.02)	
				t	p
Overall QoL	No	55	14.5(2.9)	10.1	0.06
	Yes	10	11.0(5.1)		
Physical (0-100)	No	54	68.8(14.6)	2.0	0.05
	Yes	9	57.9(18.6)		
Psychological (0-100)	No	50	67.2(11.3)	2.5	0.02
	Yes	10	56.9(15.6)		
Independence (0-100)	No	52	54.5(17.2)	2.3	0.04
	Yes	9	41.3(15.6)		
Social (0-100)	No	36	68.3(10.2)	3.4	0.002**
	Yes	4	49.5(14.4)		
Environment (0-100)	No	47	74.1(8.3)	3.8	0.000**
	Yes	9	61.6(12.2)		
Spiritual (0-100)	No	56	59.4(23.3)	2.9	0.005**
	Yes	10	36.3(23.9)		

(*) Significant, (**) Highly significant

Occurrence of falls in the last month was also associated with significantly poorer QoL in three domains - psychological (means 55.4, 68.1), $t^{58}=3.3$, $p=0.002$; environment (64.8, 73.6), $t^{54}=2.5$, $p=0.015$; and spiritual (34.7, 59.0), $t^{63}=2.9$, $p=0.005$.

Presence of depressive symptoms was significantly associated with decreased QoL in two domains - overall QoL/ general health (means: 12.1, 14.9), $t^{27.9}=2.2$, $p=0.012$ and independence (43.0, 58.1), $t^{60}=3.6$, $p=0.001$.

Finally, participation in little/no activity was associated with significantly decreased QoL in the environment domain (means: 63.1, 73.5), $t^{54}=2.7$, $p=0.009$ and use of sedatives was associated with

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[1] Due to small sample sizes, Mann-Whitney U-tests were used to analyse 'significant visual loss without aid' and 'significant hearing loss without aid'. No significant associations were found.

significantly poorer QoL scores in the social domain (means: 60.1, 70.3), $t^{38}=2.8$, $p=0.008$.

Thus, overall, improved clinical outcomes were associated with better QoL. This was further confirmed by exploring the association between the number of problem clinical areas and QoL scores.

Total Number of Clinical Problems

The total number of problem indicators (i.e. CCI items with the problems present) was calculated for each resident. This was normally distributed, with the number of problem indicators triggered ranging from one to sixteen (of 27)[2], with a mean of 6.7 (SD=3.1). Pearson's product moment coefficients (r) were calculated between number of problem indicators and scores for each of the QoL domains. All resultant correlations were in the negative direction, indicating poorer QoL was associated with increasing numbers of clinical problems, although not all were statistically significant.

A slight, but significant negative correlation occurred between number of problem indicators and *overall QoL/general health* ($r = -0.32$, $p=0.01$), with the r^2 value of 0.10 suggesting number of problem indicators contributed to 10% of the variance in overall QoL/ general health scores.

A moderate and significant negative correlation occurred between number of problem indicators and the *independence* domain ($r = -0.42$, $p=0.001$). In this case, $r^2=0.18$ suggests the number of problem indicators contributed to 18% of the variance in scores for this domain. Inspection of the scatter plot revealed a noticeable negative trend in QoL scores as number of problem indicators increased.

A slightly stronger significant, negative correlation also occurred between number of problem indicators and the *social* domain ($r = -0.47$, $p=0.002$), with an r^2 value of 0.22 suggesting that number of problem indicators contributed to 22% of the variance in social QoL. Inspection of the scatter plot revealed a more defined negative trend in QoL scores in relation to number of problem indicators.

DISCUSSION

Results for this group of residents suggested they were experiencing moderate QoL, with a few differences from the general community; scores in the *independence* and *spiritual* domains were significantly lower for the residents, while resident scores in the *physical health* and *environment* domains were significantly higher than general community scores. This reflects the reasons for moving into residential care – diminished independence and the desire for a greater sense of security, with residents reporting heightened feelings of security once the move was made (Edwards et al 2003). Comparing CCI results to WHOQOL scores suggested poorer clinical outcomes adversely influenced QoL. All WHOQOL domains were affected to varying degrees, with the most impact being felt by the *social* and *spiritual* domains. This suggests poorer clinical status might make it more difficult to engage socially and to maintain a sense of spiritual wellbeing.

Some clinical areas had more influence over QoL than others, with poorer status in *hydration, falls* and *depression* being most strongly associated with lower QoL scores, suggesting those three indicators could represent key areas for clinical management in residential aged care. To a lesser extent, QoL was also affected by activity and use of sedatives. Poor clinical outcomes over all (as measured by total number of problem indicators) were also correlated with poorer QoL. Further, a number of other clinical indicator/QoL associations approached significance with $\alpha=0.02$; a larger study might thus find a greater number of significant associations. These results can be considered particularly illuminating; given the CCI data was based on professional assessment and collected separately to the QoL data, which was based on self-report, making it unlikely responses for one instrument contaminated responses for the other.

Thus, it appears maintaining optimum clinical status would not only be important for resident health but also for enhancing QoL.

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[2] Again, cognitive decline, ADL decline and sensory decline were not included, due to being incidence indicators.

Limitations

There were a number of factors in this study that would both limit the accuracy of interpretation and the ability to generalise results. The resident sample was not randomly selected; resulting in a sample diverged from the national residential care figures in some areas. Further, the necessity for the sample to be limited to residents with adequate cognitive/sensory functioning created a sampling bias. However, as in most QoL studies with older people, this is a difficult issue to avoid, due to the limited availability of QoL assessments appropriate for those groups. Finally, the sample size was small, further limiting the generalisability of results. Thus, to develop a more accurate picture of QoL issues within residential aged care facilities and their relationship to staff practices, data would need to be gathered from a larger number of facilities than the four sampled in this study.

CONCLUSION AND RECOMMENDATIONS

Despite some limitations, this study highlighted an aspect of resident care warranting further investigation. The CCI Tool was developed to indicate potential problems in care delivery within residential facilities. This study has shown the clinical areas assessed are also related to QoL, which suggests the value inherent in monitoring clinical outcomes on a regular basis.

As an exploratory study, this project has begun the process of investigating links between quality of life and quality of care within residential aged care. However, it is an area of research that requires more attention, particularly in the Australian context. As such, the following should be considered:

1. Collect and analyse CCI data in a greater number of facilities on several occasions. This would enable data to be analysed more accurately, including incidence data;
2. Collect QoL data concurrent with CCI data on a wider scale to further analyse the relationship between clinical outcomes and QoL; and
3. Establish ongoing monitoring of clinical care and outcomes to ensure optimum resident quality of life.

If adequate attention can be paid to quality clinical care within residential aged care facilities, it appears resident quality of life could also be enhanced. However, such care requires quality assessment on a regular basis to ensure it is achieving what it is meant to. At present, there is no comprehensive system for monitoring quality within Australian residential aged care facilities beyond Accreditation. This gap clearly requires addressing if Australia is to achieve world class care of its older citizens.

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Basic life support knowledge of undergraduate nursing and chiropractic students

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Conflict of interest

The authors state that there is no conflict of interest to declare, all steps were taken to ensure that no potential or actual conflict of interest could occur.

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KEY WORDS

Basic Life Support (BLS), Automated External Defibrillators (AED), Cardiopulmonary Resuscitation (CPR), knowledge, education, training

ABSTRACT

Objective

The aim of this study was to examine retention of CPR/BLS knowledge of third year nursing and fourth year chiropractic students following instruction and assessment of CPR/BLS skills and knowledge as part of their undergraduate degree program.

Design

Non-experimental exploratory survey to determine perceived ability and knowledge of CPR/BLS following completion of CPR/BLS instruction.

Setting

University Health Sciences School.

Subjects

87 third year undergraduate nursing and 43 fourth year undergraduate chiropractic students at Royal Melbourne Institute of Technology (RMIT).

Main outcome measure

The level of knowledge of CPR/BLS was assessed via the number of correct responses to questions regarding CPR/BLS. A visual analogue scale was used for the students to score their self rated perceived knowledge and skill.

Results

The majority of students (78%) felt they were well prepared to perform CPR/BLS, however there were deficiencies in both groups with regards to knowledge of current guidelines. Chiropractic students were less likely to identify the correct compression rate compared to the nursing group (Spearman's rho 0.669, p-.001) with 95% of the chiropractic students not able to identify the correct rate. Thirty four percent of the students were unable to identify the correct ventilation compression ratio with nursing students again more likely to respond correctly (Spearman's rho 0.508, p-.001). Nursing students scored themselves highly for self rated knowledge and ability to perform CPR. Chiropractic students tended to score themselves at a lower rating in these areas than the nursing students; however the differences were not statistically significant.

Conclusions

Although students from both disciplines had significant gaps in knowledge of CPR/BLS nursing students outperformed chiropractic students in all aspects of CPR/BLS knowledge. Despite the knowledge gap students from both disciplines were confident in their self assessed ability to perform and assess the need for CPL/BLS.

INTRODUCTION

In the wider community it is an expectation that competence in cardiopulmonary resuscitation (CPR) and Basic Life Support (BLS) is at a high standard in all hospital medical and nursing staff (Buck-Barrett and Squire 2004; Perkins et al 1999). It is reasonable to conclude that community expectation regarding competency of CPR and BLS would be extended to other health care professionals such as Chiropractors (Dwyer et al 2005; Monsieurs et al 2005; Buck-Barrett and Squire 2004; Chamberlain and Hazinski 2001).

In most health care professions, CPR/BLS competence is an expectation of the regulating authorities and thus is usually a component of the curriculum. It is therefore not uncommon for this subject matter to be imbedded in the curricula. Indeed, BLS and CPR are a competency required in many undergraduate health care courses. However, this is not always the case as the Australian chiropractic regulatory authorities do not require current CPR competence for Chiropractors. Despite this most chiropractic programs have a requirement for CPR training which is additional to the curricula and is typically met through an external provider such as St Johns Ambulance.

BACKGROUND

While CPR/BLS competency is considered a fundamental skill for health care workers, the evidence suggests that retention of CPR/BLS knowledge and skills is generally poor (Brown et al 2006; Buck-Barret and Squire 2004). Studies have also identified differences in the quality of BLS / CPR performed by various healthcare providers (Wik et al 2005; Nyman and Sihvonen 2000). Often chest compression is performed inadequately with slow rates of compression and inadequate depth of compression (Abella et al 2005). De Regge et al (2008) found that after a relatively short time following training, nurse's BLS/CPR skills were poor.

Previous studies of CPR/BLS knowledge and skills have focused on nurses and other mainstream health professionals (Dwyer, Mossel-Williams and Mummery 2005; Monsieurs et al 2005; Buck-Barret and Squire 2004; Chamberlain and Hazinski 2001; Jordan and Bradley 2000; Perkins et al 1999). A review of the literature was unable to identify any previous studies that have examined the CPR/BLS knowledge and skills of chiropractic students.

The introduction of Automatic Defibrillators (AED) in community settings and the need for health professionals to be able to determine when and how to use AED, it has never been more important to determine the retention of knowledge, self perception of knowledge level and the ability to competently perform CPR/BLS in health professionals (Fleishhackl et al 2008).

At RMIT as part of the nursing and chiropractic programs, CPR/BLS is deemed an essential competency that all students must satisfactorily achieve. In the nursing course students are given a theoretical basis for CPR/BLS followed by a practical demonstration and participation in resuscitation scenarios in each year of the program. The complexity of the knowledge increasing in each year of the three year undergraduate program and in year 3 includes the use of AEDs. Chiropractic students at RMIT have no formal CPR/BLS education as part of the curriculum but are required to obtain a level II First Aid certificate by the fourth year of the program. The certificate is designed to provide competencies, skills and knowledge necessary to respond effectively and safely in first aid situations.

AIM OF THE STUDY

The aim of the study was to examine nursing and chiropractic undergraduate students' knowledge retention and self rated ability to perform CPR/BLS including use of Automated External Defibrillators (AED).

METHODS AND DATA COLLECTION

A non-experimental survey design using a 35 item questionnaire to collect information on the knowledge and self rated perception of ability to perform CPR/BLS was used. The participants consisted of a convenience sample of all third (final) year nursing students enrolled in the undergraduate Bachelor of Nursing and all students enrolled in the fourth year of the Chiropractic program (Bachelor/Masters) at RMIT. The groups had received prior instruction and assessment of CPR/BLS skills as required by the respective programs. Students were approached during a normal timetabled lecture and asked to complete and return the questionnaire. The questionnaire was composed of categorical and likert response, questions. Visual analogue scale response questions were also utilised for the respondents to rate their self perceived ability and knowledge of CPR/BLS. The questionnaire was piloted before it was used to ensure content and face validity.

ETHICAL CONSIDERATIONS

Ethics approval was sought and obtained from the RMIT ethics committee. Completion of the questionnaire was voluntary and anonymous. Consent to participate in the study was determined by the completion and return of the questionnaire.

DATA ANALYSIS

The data was analysed using Statistical Package for Social Sciences version 15.0 (SPSS Inc). Descriptive and frequency analysis of the data from the survey questionnaire were examined to provide an overall picture of the responses. Initial analyses included frequencies and were reported as counts, percentages and means as appropriate. Further analysis of the data to assess normality indicated the data was not normally distributed therefore correlations were examined using Spearman's Rho.

RESULTS

A total of 220 questionnaires were distributed to year 3 nursing and year 4 chiropractic students. One hundred and thirty completed questionnaires were returned representing a response rate of 59%.

The questionnaire was returned by 87 nurses (53% of the year 3 nursing cohort) and 43 chiropractic students (67% of the year 4 chiropractic cohort). Of those who indicated their gender twenty-four were male and 104 (81%) were female with a larger proportion of males in the chiropractic cohort (18 of 43 or 42%) while males represented less than 7% in the nursing group. The age of the population ranged from 19 to 47 with a mean of 25. The age range and distribution of males in the nursing group is consistent with the labour force data characteristics obtained from eleventh biennial health report of the Australian Institute of Health and Welfare (2008).

KNOWLEDGE OF CURRENT RECOMMENDATIONS FOR BLS/CPR

Students were asked to identify the current recommended rate for performing chest compression, 48% of the students could not correctly identify compression rate. There was a strong correlation between identifying the correct rate and the student's discipline (Spearman's rho 0.669, p-.001). When each discipline was examined individually 95% of the chiropractic students could not identify the correct rate. While in the nursing group 25% of the respondents were unable to identify the correct rate (as per the current Australian Resuscitation Council (ARC) guidelines).

A similar picture emerged with the ventilation compression ratio with 34% of students unable to identify the correct ratio; again there was a correlation between incorrect response to this question and the student's discipline (Spearman's rho 0.508, p-.001). Most (69%) of the chiropractic students and 17% of the nursing students were unable to identify the correct ratio.

When asked about the recommended number of initial rescue breaths once more nursing students out performed chiropractic students, with 90% of nursing students responding correctly and 53% of chiropractic students able to correctly identify the initial rescue breaths (Spearman's rho 0.422, p-.001).

Identification of the depth of compression required for effective CPR was poorly answered by both groups, with 57% of the group not able to identify adequacy of compression. When each group was examined individually 54% of nurses and 65% of chiropractic students answered this question incorrectly.

Last time practiced CPR

When students were asked regarding last time they practiced 76.9% (n=100) indicated they had practiced within the last three months while. 2.3% (n=3) indicated they had never practiced CPR outside of scheduled practice/revision sessions. When students were asked how often they read ARC BLS guideline updates 41.1% had never read them and even fewer 17.2% (n=22) had read any research reports related to BLS.

In terms of actual real life experience with performing CPR the majority of respondents had not been required to do this with only 13.2% (n=17) indicating they had. Of these most (14) were nursing students who indicated that they had been required to perform CPR in an emergency situation.

Self rating of knowledge and skill

A visual analogue scale was used for the students to rate their perceived knowledge, need and ability to perform CPR/BLS. Zero on the scale indicating the lowest possible rating and ten on the scale representing the highest possible rating. Nursing students scored themselves highly for self rated knowledge of CPR, ability to assess the need for CPR highly and ability to perform CPR. Chiropractic students tended to score themselves at a lower rating in these areas than the nursing students; however the differences were not statistically significant.

Table 1: Self rating scores on visual analogue scale

	Self rated level of knowledge of BLS	Self rated ability to assess need for CPR	Self rated ability to perform CPR
Nursing students			
Mean	7.913	8.223	7.903
SD	1.3293	1.3077	1.5071
Chiropractic students			
Mean	6.542	6.900	6.588
SD	1.8808	1.9955	1.7906

There was a correlation between students who scored themselves highly on the self rated knowledge on BLS and their self rated ability to assess and perform CPR. Again nurses rated themselves higher in these areas than the chiropractic students.

Self Rated Preparedness

The majority (78.3%) of respondents agreed they were prepared to perform CPR if required, yet only 62.3% felt their First Aid training or CPR/BLS instruction they received adequately prepared them to perform CPR. Regarding preparedness to use AED, 58.1% agreed their training adequately prepared them and a similar number (62%) agreed they would use an AED if required. There was no correlation between student discipline and perceived preparedness to perform CPR or use an AED.

The majority of students (69%) indicated they agreed with the statement that chest compression performed well will result in spontaneous circulation. Many students were unsure regarding the need for chest compressions prior to defibrillation with 41% indicating that prior to defibrillation you should perform chest compression for at least five minutes. Many also appeared unsure of who is able to use AED's in an emergency situation with 42% indicating they should only be used by people who have been trained in using the devices. A similar number (57%) also indicated defibrillation is only performed if chest compression has been unsuccessful at restoring the circulation. There was no correlation between the response to this question and the students discipline.

The two questions best answered by both groups were; 'Absence of a carotid pulse is the only way to determine cardiac arrest' and 'During CPR interruptions to chest compression should be minimised' with 86.2% and 86.8% respectively.

A quarter of respondents (25.6%) indicated they were unsure whether health professionals such as chiropractors were able to initiate or perform defibrillation. Many students (21%) were also unsure whether CPR could be performed on a pregnant woman.

DISCUSSION/RECOMMENDATIONS

If the initial premise is that all health professionals should have sound CPR/BLS skills and knowledge then this study has demonstrated there are significant differences between students from two different groups of health professionals. Do these findings indicate there is a need for all health care professionals to have the same standard of CPR/BLS instruction/training and assessment? Should CPR/BLS be a core competency across all health care professional programs? Should regulatory bodies require demonstrated competency?

If having the same standard of instruction/training and assessment is indeed a recommendation from this study then is it wise for educational institutions to consider providing the same educational preparation and assessment for CPR/BLS to all health professional programs within the institution? Are the teaching methods in the current nursing/chiropractic education system adequate to rectify the large number of incorrect responses? Before educational institutions can adopt this recommendation further examination and comparison of other health care professionals including students, needs to take place.

Added to the above recommendation should be the exploration of teaching/training and assessment methods of CPR/BLS across other health care professional education providers.

It would appear the results of this study indicate the most poorly answered or lowest knowledge areas were the objective questions such as, compression rates; ventilation to compression ratios; when to use automated external defibrillators and depth of chest compressions. If this is the case then CPR/BLS training/education should be revisited to ensure changes are addressed in these objective content areas which include how, frequency and by whom, these are delivered and assessed to ensure accuracy and retention.

Another key area this study identified was the self rated confidence and the perceived ability to perform CPR. Participants indicated they did not read ARC Guidelines or research reports; however they still felt confident in their ability to perform CPR correctly. The student's relatively high level of self-perceived knowledge and ability is at odds with the number of students not able to correctly identify the current recommended compression rate or the depth of compression required. This suggests a further study could be implemented to compare CPR/BLS knowledge and self rated confidence of participants who read ARC Guidelines.

Nursing students outranked chiropractic students in most areas of the questionnaire. The only section where there was no distinction between the correlations in each discipline was the self rated preparedness to perform BLS/CPR. Both disciplines felt equally prepared to perform BLS/CPR yet both disciplines (although more chiropractors than nurses) answered the objective knowledge questions incorrectly. This finding is alarming as both nurses and chiropractors believe they are ready to perform BLS/CPR if they were called upon to do so. Consistent with De Regge et al (2008) findings regarding nurses BLS/CPR knowledge and skills. While BLS/CPR skill of chiropractors as a professional group have not been previously studied, the results for chiropractic students do reflect the finings from other studies that the retention of CPR/BLS knowledge and skills is generally poor (Brown et al 2006; Buck-Barret and Squire 2004).The only positive perspective is the correct responses were made by more nurses than chiropractors. This finding does not provide enough convincing evidence that nurses are either more knowledgeable on CPR/BLS or they have greater CPR/BLS knowledge retention especially as nurses are required to have annual instruction and assessment in BLS/CPR competencies.

LIMITATIONS

Within the study there were two distinctly different educational/training methods and thus also of assessment. Perhaps deeper analysis of the content of the education/training and assessment (which was not undertaken) could have provided a greater insight into why this study achieved the reported results. The student groups used in this study provided an opportunity to compare CPR/BLS knowledge retention associated with differing approaches to CPR/BLS education. By comparing only these two groups the findings may be limited in transferability to other healthcare student groups.

In addition the study did not investigate in any detail whether there was poor initial teaching and links to retention uptake (Parnell and Larsen 2007). Nor did this study explore what the CPR/BLS assessment results these two groups of undergraduate health care professional students had achieved or when they had been assessed. The formal CPR/BLS assessment results and timing of assessment (within the last six months) could have played a significant role in explaining the data obtained from these groups.

CONCLUSIONS

The study provided insight into knowledge retention of CPR/BLS of chiropractic and nursing students at RMIT in two recent cohorts. The findings indicate that for these participants, student nurses seemed to be better equipped and had a greater retention of CPR/BLS knowledge six months after they had CPR/BLS instruction. Student nurses in this group also had CPR/BLS instruction every year of their undergraduate nursing program. It is important to note this study echoes strongly that of Dwyer et al (2004, p11) in the reluctance and lack of confidence that HCP have to use AED.

Results of this study also looked at the implications of two HCP roles in CPR/BLS education and practice. Thus the study is limited in transferability of findings to other HCP. It does though provide a beginning understanding of CPR/BLS skills and knowledge across at least two HCP (Verplancke et al 2008; Jordan and Bradley 2000).

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Nurse practitioners in drug and alcohol: where are they?

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KEY WORDS

nurses, nurse practitioner, drug and alcohol, treatment, nurse prescribing

ADDENDUM

Since the acceptance of this article the Australian Federal Government has announced funding of $59.7 million over the next four years to expand the role of Nurse Practitioners throughout Australia. This funding includes support to allow access for Nurse Practitioners to the Medicare Benefits Schedule and to the Pharmaceutical Benefits Scheme (PBS) from 2010 (Australian Government 2009). Whilst this is welcome news for Australian Nurse Practitioners the details of the funding have not yet been released. It remains to be seen as to whether the budget announcement will provide Medicare and PBS access to all Nurse Practitioners or to a restricted few. It is also as yet unknown as to whether this level of funding will be sufficient, particularly with the role of the Nurse Practitioner being one still in development.

ABSTRACT

Objective
The role of nurse practitioner encompasses advanced levels of practice with the potential to prescribe a range of medications within a recognised area of practice along with the use of appropriate ordering of pathology tests and referral practices. This paper introduces the nurse practitioner in drug and alcohol.

Setting
The nurse practitioner in Drug and Alcohol has the potential to support and enhance existing medical models of patient care in a variety of settings.

Primary Argument
Employment of nurse practitioners may be a way of addressing workforce issues. The advanced level of practice and resultant responsibility also requires higher levels of remuneration, which need to be accepted within an advanced practice framework. In many cases this model of care may in fact be acknowledging existing practices in areas where nursing staff are forced to undertake more advanced roles due to the shortage of appropriately trained Medical staff. Collaborative care involving nurse practitioners can lead to increased access, reduced waiting times and longer consultation times.

Conclusion
Nurse practitioners in the alcohol and other drugs field have enormous potential to support other experts in collaborative care for patients with substance use disorders. This potential does not come without some additional financial costs but the potential benefits to a health service in employing a nurse practitioner skilled in the management of substance use disorders can be enormous. The full potential of nurse practitioners in drug and alcohol will not however be realised until financial arrangements for outpatient care become a reality.

INTRODUCTION

Throughout Australia in recent years there has been a steady decline in the use of tobacco but an increased use of alcohol. Around one-third of Australians over the age of 14 years have tried cannabis and over one third have tried an illicit substance within their lifetime (AIHW 2007).The use, abuse and dependence upon opioid analgesics has also been increasing during the last 10-15 years with increases in Emergency Department presentations for opiate related complaints (Compton and Volkow 2006). Despite declines in tobacco use, tobacco remains the largest cause of drug related mortality in Australia every year with approximately 18,000 deaths per annum. This is followed by alcohol with approximately 3,000 deaths per annum and illicit substances causing around 1,705 deaths in 2003 (AIHW 2007; Chikritzh et al 2003; Ridolfo and Stevenson 2001).

The role of the nurse practitioner (NP) is relatively new to Australasian health care systems. Formal development of the model in New South Wales began in 1990 with the convening of the first nurse practitioner committee although significant work had previously been undertaken to establish that process (Nurses Registration Board of New South Wales 2003; Appel and Malcolm 1999). The first NPs were authorised in December 2000 following wide consultation and development of authorisation processes. Amendments to multiple Acts of Parliament were required to include the NP title and to allow nurses to function in the NP role (Siegloff Clark 2000; Appel and Malcolm 1999). In 2003 a workshop was held by the then Drug Programmes Bureau of the New South Wales Department of Health to train senior nurse clinicians in the drug and alcohol field to a level at which they could seek authorisation as NPs. Approximately 20 nurses attended the workshop run by staff of the University of Newcastle. Whilst attendees to the training were required to commit to a 12-month time frame in seeking authorisation, this was never a realistic requirement. The first NP in drug and alcohol nursing in New South Wales was authorised in June 2004. Research is currently being undertaken by the author into the barriers facing senior drug and alcohol nurses in seeking authorisation.

DISCUSSION

Defining the nurse practitioner

In 2006, the NP was described by the Australian Nursing and Midwifery Council as:

"..a registered nurse educated and authorised to function autonomously and collaboratively in an advanced and extended clinical role. The nurse practitioner role includes assessment and management of clients using nursing knowledge and skills and may include but is not limited to the direct referral of patients to other health care professionals, prescribing medications and ordering diagnostic investigations." (ANMC 2006, pp. 1).

In New South Wales two pathways to authorisation have been utilised. Pathway 1 refers to authorisation of a NP who has undertaken a Masters level degree approved by the Nurses and Midwives Board of New South Wales as having prepared the applicant under the National Competency Standards for the Nurse Practitioner (ANMC 2006), with supporting documentation of 5000 hours of advance nursing practice within the specific area of expertise within the previous six years.

The second pathway is for those nurses who already work at an advance level of practice with knowledge and experience not necessarily obtained from a tertiary institution. Nurses applying under pathway 2 must still demonstrate appropriate competence as defined by the National Competency Standards for the Nurse Practitioner (ANMC 2006). This is assessed by peer interview and submission of a case study and development of a 'package of evidence' with supporting documentation of 5000 hours of advanced nursing practice within the specific area of expertise within the previous six years (Nurses and Midwives Board of New South Wales 2006).

What are the barriers to authorisation?

Potential barriers to senior nurse clinicians seeking authorisation to the NP level have been examined by a limited number of studies. None have concentrated specifically on drug and alcohol staff and none have examined the New South Wales context. Organisational barriers including funding of roles, area health services failing to see the value of the NP positions, leave relief only being able to be provided by other authorised nurse practitioners, lack of orientation into the role and loss of other senior nursing positions to fund NP positions have been identified (van Soeren and Micevski 2001). Lack of support from other stakeholders due to fear of encroachment into medical territory, fears of deskilling junior medical staff, concern over lack of line authority amongst other nurses, disparity between clinical and academic qualifications and ignorance have also been identified (Lloyd Jones 2005; van Soeren and Micevski 2001). Role ambiguity may also be a potential barrier (Lloyd Jones 2005). Many nurses do not necessarily feel comfortable with the idea of practicing at a more advanced level where prescription of medications would be required (McCann and Baker 2002). It may also be that other barriers exist in the New South Wales context such as geographical barriers and personal barriers such as personal choice, lack of confidence, time constraints, perceived lack of support in enacting the role and perceived lack of support for professional development (eg. attending conferences, external meetings) some of which have been identified as issues in enacting Clinical Nurse Consultant roles (Vaughen et al 2005).

What are the benefits?

Despite the potential barriers there are significant potential benefits to investment into NP authorisation. At a personal level, authorisation provides legislative authority to perform tasks beyond the scope of a registered nurse with resultant increases in remuneration (Bagg 2004). Increased access to services, reduced waiting times, improved quality of treatment, the formalising of processes which already exist, greater provision of information, greater responsibility for nurse decision making, the freeing up of consultant time, enhancement of multidisciplinary relationships and the provision of longer consultation times allowing complex issues to be addressed in more detail have all been suggested (Gallagher et al 2006; Wand and Fisher 2006; Wortans et al 2006; Victorian Alcohol and Drug Association 2005; Bagg 2004). Reduction in patient length of stay without increases in readmission rates or mortality has been shown with collaborative models involving nurse practitioners as members of a multidisciplinary team employed within hospital settings (Cowan et al 2006). Nurse practitioners in the United States of America have been shown to provide similar outcomes for their patients as their physician colleagues with similar levels of patient satisfaction (Mundinger et al 2000). This has been replicated in small studies in Australia in fields outside of drug and alcohol (Wortans et al 2006). The less formal relationship provided by nurses when compared with medical professionals has also been shown to influence patient satisfaction in a positive way (Wortans et al 2006). It has also been suggested nurse practitioner positions may legitimise the current practice of some nurses who are already functioning in the role without being formally authorised or recognised (Bagg 2004; McCann and Baker 2002). There is also evidence of support for the implementation of nurse practitioners from health professionals within the drug and alcohol field (Shoobridge 2005).

These benefits in a drug and alcohol context are likely to be seen in such areas as the provision of opiate maintenance treatment where long waiting lists for treatment are often the norm. In a report from the New South Wales Bureau of Crime Statistics and Research 40% of opiate dependent respondents before the criminal justice system in New South Wales reported they would enter methadone maintenance treatment ‘tomorrow’ if waiting lists were not a barrier to treatment (Weatherburn 2000). General practitioners are sometimes reluctant to identify and treat patients with substance use disorders and in some cases have shown either ineffective or harmful treatment practices (Fucito et al 2003). Nurse practitioners are in a position to not only assess and treat such patients but to provide support for their colleagues in general practice requiring advice around the complexity of substance use issues.

What are the costs?

There are potential costs in enacting the NP role. Higher levels of pay are required to employ a NP, increases in nursing workload can be anticipated and organisations may decrease funding for other health care professional positions in a response to what administrators might view as a cheaper option (Gallagher et al 2006). Disruption of the division of tasks within teams with the introduction of NPs, altered working relationships within teams where the NP is responsible for the training and supervision of junior medical staff and the difficulties in dealing with evolving working models are not always easily rationalised in real world situations (Reay et al 2003). Whilst those nurse practitioners employed within the public health system of New South Wales do not require professional indemnity insurance due to employer vicarious liability, although this has not been tested in the courts to the author's knowledge, privately employed nurse practitioners will be required to carry such insurance (Fisher 2005). It has further been suggested the isolation faced by remote area workers has the potential to place the nurse practitioner at risk (Victorian Alcohol and Drug Association 2005).

Potential operational models

Several operational models for the NP in drug and alcohol have been identified. Consultation liaison NPs are able to provide care to hospital inpatients during an acute presentation to hospital. These nurses are based at an individual site or limited number of sites. This model may also involve NPs working within a detoxification unit with an expanded role in assessment and in implementing treatment plans. Outpatient care can be managed through community health centres and opioid replacement treatment programs where outpatient appointments can be made on an as needed basis. Positions covering a specific geographical area may combine components of both the aforementioned models (Wand and Fisher 2006; New South Wales Department of Health 2005).

The current situation

The New South Wales government have amended multiple Acts of legislation to enable the emergence of the nurse practitioner in that state (Hatzistergos 2006; Driscoll et al 2005; Nurses Registration Board of New South Wales 2003; Siegloff Clark 2000; Appel and Malcolm 1999). The Poisons Act, The Nurses and Midwives Act and the Poisons and Therapeutic Goods Regulation among others, have all been amended to allow a nurse practitioner authorised by the Director General of the New South Wales Department of Health to possess, use, supply or prescribe medications including drugs of addiction. These are vital amendments for the drug and alcohol field in allowing NPs to prescribe opiate maintenance treatments in particular.

Unfortunately, NPs have not been supported with access to the national Medicare Benefits Schedule (MBS) or to the Pharmaceutical Benefits Scheme (PBS) at a Federal level. This means any medication or pathology ordered by a NP for an outpatient requires the patient to pay full costs for the item, effectively leaving the full potential for NPs unfulfilled. Referral to specialist medical services is likewise affected (Cashin 2006; Driscoll et al 2005; Fisher 2005). This is likely to impact mostly on those NPs in drug and alcohol involved in the prescription of maintenance or anti-craving treatments in community settings and those in outlying areas with limited access to a medical consultant who require access to appropriate patient referrals.

At the time of writing 99 NPs had been authorised in New South Wales with three of those being NPs in drug and alcohol nursing (New South Wales Department of Health 2007). The Hunter New England Area Health Service based in New South Wales was the first to approve a set of practice guidelines for a nurse practitioner in drug and alcohol along with a formulary of prescribed medications and a scope of practice document outlining appropriate levels of care. Guidelines exist for the management of opiate withdrawal, alcohol withdrawal, cannabis withdrawal, benzodiazepine withdrawal, amphetamine withdrawal and nicotine withdrawal. Many of these allow for the prescription of appropriate medications by the nurse practitioner in drug and alcohol specific to their needs and the needs of their patients (Hunter New England Area Health Service 2006). The nurse practitioner maintains close contact with a senior medical staff specialist at all times and works within a multi-disciplinary framework.

CONCLUSION

Nurse Practitioners in the alcohol and other drugs field have enormous potential to support other experts in collaborative care for patients with substance use disorders. This potential does not come without cost but the potential benefits to a health service in employing a NP skilled in the management of substance use disorders can be enormous. It is vital nursing managers and other administrators are not short sighted in their utility of NPs by using such positions as a replacement for other nursing or medical positions. The full potential of NPs in drug and alcohol will not however be realised until access to the Medicare Benefits Schedule and Pharmaceutical Benefits Scheme with financial arrangements for outpatient care and access to hospital admission rights become a reality.

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E-portfolios: developing nurse practitioner competence and capability

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KEY WORDS

nurse practitioner education, competence, capability, e-Portfolio

ABSTRACT

Objective

This paper aims to integrate nurse practitioner literature on competence and capability with post graduate and nursing literature on e-portfolios in order to demonstrate the potential merits of e-portfolios in nurse practitioner education for competence and capability development.

Primary Argument

In the *Nurse Practitioner Standards Project,* competence and capability were proposed as key criteria to assess candidates in nurse practitioner educational courses. Portfolios have traditionally been used to demonstrate competence in nursing and are integral to nursing education as well. An examination of the portfolio and electronic portfolio literature in postgraduate nursing education and professional practice indicates that these portfolios fall under two main structures, each with different purposes: 1) A *spinal column* structure, with evidence and reflective pieces aligned to competency standards or course objectives, for the purposes of meeting prescribed competencies, professional development planning and showcasing evidence for authorisation or potential employers; and 2) A *cake mix* structure, which consists of a reflective narrative tying evidence together, which enables a greater focus on personal learning journeys, reflection and the development of personal qualities. Finally, evidence from the general nursing literature suggests the complexity of e-portfolios in assessment and evaluation can be overcome by using qualitative research methods.

Conclusion

To meet the competence and capability needs of nurse practitioners, portfolios could be used, for competence and showcasing and for learning and capability. Further research would be useful to refine and explore the use of e-portfolios to meet the needs of NP candidates and their educators, clinical mentors, authorisation personal and employers. The current evidence on nurse practitioner education, competence, capability and e-portfolios points to the integration of the use of an e-portfolio into current nurse practitioner curriculum models to meet the unique needs of nurse practitioner candidates.

INTRODUCTION

In the *Nurse Practitioner Standards Project*, competence and capability were proposed as key criteria to assess candidates in nurse practitioner educational courses. Portfolios have traditionally been used to demonstrate competence in nursing and are integral to nursing education as well. The current evidence on nurse practitioner education, competence, capability and e-portfolios points to the integration of the use of an e-portfolio into current nurse practitioner curriculum models to meet the unique needs of nurse practitioner candidates.

Three outcomes for nurse practitioner (NP) policy and practice in Australia were achieved in a landmark 2004 report from the ANMC Nurse Practitioner Standards Project. Firstly, a consensus was reached on core role and practice competencies for nurse practitioners. Secondly, standards for NP education and program accreditation based on an audit of Australian and New Zealand university courses were identified. Lastly, standards for nurse practitioner authorisation were developed. However, Gardner et al (2004) noted the inherent complexity and depth of the NP role indicated that competence was not sufficient criteria for the education and evaluation of NPs and suggested the construct of capability to complement competence.

The demonstration of both competence and capability in NP introduces complexity into the assessment of NP education, as capability in addition to competence is required to be evaluated (Gardner et al 2006). A useful tool towards this end is a portfolio, which has been used in nursing to document and showcase education and competence (Andre and Heartfield 2007). Byrne et al(2007) suggested the use of portfolios to facilitate continuous assessable learning in response to changes and complexities in nursing practice and to foster personal qualities such as critical thinking and individual assessment and accountability. The purpose of this paper is to integrate the nurse practitioner literature on competence and capability with post graduate and nursing literature on e-portfolios in order to demonstrate the potential merits of e-portfolios in nurse practitioner education for competence and capability development.

COMPETENCE AND CAPABILITY IN NURSE PRACTITIONER EDUCATION

Nurse practitioner education in Australia and New Zealand

Gardner et al (2004) conducted a qualitative study, which trialled nurse practitioner education in practice. The four participants were advanced practice nurses who had completed a post graduate qualification in their specialty with at least three years experience and support from their employer and a clinical specialist team in their area. The educational program involved the nurse practitioners undertaking clinical practice, with support and education provided by mentors in their clinical support team. In addition, the nurse practitioners participated in action learning, which involved experiential learning and reflective practice and clinical research facilitated by clinical and academic mentors and experts. Group discussions on learning needs and issues and associated themes including contributions to the nurse practitioner, generic elements and specific learning activities provided a forum for data generation. These discussions were supported by clinical logs maintained by participants, who recorded learning needs and issues experienced during the previous week leading up to the clinical research day.

An ideal model of nurse practitioner education was proposed at the Masters level, following on from postgraduate specialist and advanced practice education and clinical experience. Gardner et al (2004a) suggested the incorporation of a specialist field of study in clinical practice within a nurse practitioner education course. This component would be undertaken as field work using experiential learning and learning contracts, supported by a clinical team and academic staff. Assessment goals for clinical practice would include clinical decision making and clinical performance. Generic nurse practitioner education would be developed to both enhance knowledge and scope and expand the candidate's current role. This generalist education would be categorised as clinical sciences, covering clinical decision making, assessment and diagnosis and pharmacology; and nursing studies, incorporating evidence based practice and models of practice. Learning for these components would involve action and self directed forms of learning, to meet the objectives of knowledge acquisition and application in complex situations and development of a model specific scope of practice respectively.

The above model of nurse practitioner education represents a research informed curriculum and an audit of the 14 NP educational courses in Australia and New Zealand conducted by Gardner et al (2004a) revealed some commonalities in courses that concurred with Gardner et al (2006a), while other areas of course content were fragmented. Nine courses had a portfolio element, which was mostly an assessment piece.

Competency standards for nurse practitioners

The Australian national competency standards emerged of a synthesis of data, including in-depth interviews with current practicing NPs in Australia and New Zealand, literature review of nurse practitioner reports and submissions from national nursing bodies such as the Australian Nursing Federation (Gardner et al 2004a). Content of the competency standards is similar to the proposed content of nurse practitioner education, as identified in Gardner et al (2006b) research based the model of nurse practitioner education (p. 100):

The three competency standards are supported by competencies and indicators of competences, which are intended to guide curriculum development for NP education, as well as other NP issues such as practice and authorisation. The second NP education and program accreditation standard pertains to coverage of competency standards. It stipulates that curriculum content must demonstrate the indicators which relate to each competency and that specialty components are to be developed in consultation with appropriate specialty organisations.

Capability in NP Education

The final two standards for NP education and program accreditation relate to capability: its teaching and learning processes and assessment respectively. Capability was described by Hase (2000) as a holistic trait comprised of creativity, high self efficacy, appropriate social and communication skills to work well in a team, knowledge of how to learn and the ability to apply competencies in common and novel situations. Learning strategies conducive to capability learning reported by Gardner et al (2006) include learning contracts, problem-based learning, situated learning, experiential learning, clinical learning environment, flexible and responsive learning pathways and traditional approaches to supporting skills acquisition (p. 13).

Gardner et al (2008) conducted a deductive analysis of interview content of the NP sample from the NP standards project to determine evidence of capability in their practice. The use of a capability construct to inform NP education was supported by the salience of capability in practice. Knowledge of how to learn was exemplified by participant comments pertaining to knowing when and how to apply knowledge, understanding of deficits in knowledge and how to source and evaluate potential knowledge resources such as research literature. The respondents emphasised social and communication skills in several ways. These included personal empowerment to remain autonomous in multidisciplinary teams in order to contribute to teamwork, inclusion of all team members and the patient in clinical decisions and the ability to impart and share knowledge as an educator. Respondents articulated self efficacy from their autonomy, exercised through feeling confident and taking responsibility for their decisions. Creativity was reported to factor into the NP role in terms of obtaining evidence for diagnostic decisions and arranging additional support for patients. In a similar fashion, the NPs also recounted incidents whereby novel usage of knowledge and skills were needed, for example, in scenarios where standard procedures were unable to be performed.

ELECTRONIC PORTFOLIOS FOR NP COMPETENCE AND CAPABILITY

In the previous section, portfolios were identified as a general assessment tool in nurse practitioner education, which could be refined for competence and capability learning. Until recently, portfolios were also a requirement for nurse practitioner authorisation (Gardner et al 2004a). While successful completion of a Masters level course is now considered sufficient for authorisation by state and territory accreditation bodies (Gardner, personal communication), e-portfolios may be helpful for nurse practitioners for employment purposes and documenting lifelong learning (Byrne et al 2007).

Electronic portfolios have two main uses: formative, as a tool to document a process of learning or individual learning journey; or showcasing to present evidence of competence for employment or professional registration (Butler 2006; Marcoul-Bulinson 2006). The e-portfolio was initially used as a showcasing tool to guide professional development planning (PDP) and lifelong learning. With the advent of online learning, e-portfolios also became popular in educational settings. Learning e-portfolios differ from showcase portfolios in that reflection is involved (Hartnell-Young 2006; Marcoul-Bulinson 2006). While reflection has been defined in many different ways, most authors refer to Dewey's (1933, cited in Moon 1999) definition as a starting point:

The e-portfolio is intended to stimulate learning processes or outcomes in which reflection plays a role. For example, educational frameworks used in conjunction with e-portfolios, such as constructivism (Emmett et al 2005), adult learning (Joyce 2005) and deep learning (Doig et al 2006) rely heavily on reflection to generate desired learning outcomes. In nurse practitioner education adult and constructivist learning, or variations on these themes, are central to teaching and learning, which suggests an e-portfolio for learning and assessment would capitalise on current andragogical methods in NP education.

A UK based study identified four different types of portfolio structure used in educational courses (Endacott et al 2004), although it was not stated whether the portfolios were electronic. The simplest structure was called the *shopping trolley,* which was essentially a disorganised showcase portfolio. Reflective pieces were rarely included in shopping trolley portfolios and artefacts were not connected to competency standards or learning goals. Better structured was the *toast rack* portfolio, which was still essentially a showcase portfolio, although artefacts were organised under categories such as competencies or reflective accounts. The *spinal column* portfolio involved a series of competencies or learning goals, which served as the vertebrae in the metaphor. Artefacts were tied to each competency and candidates were required to demonstrate learning and competence via reflective writing pieces. As such the *spinal column* represents a learning portfolio, rather than simply showcasing competence. Lastly, the *cake mix* portfolio involved an underpinning reflective narrative written by the student that linked all of the artefacts together. This model was most frequently used in postgraduate or advanced practice courses.

Use of electronic portfolios in developing competence and personal qualities in postgraduate nurse education

The existing literature on e-portfolios in postgraduate nursing settings demonstrates the value of this tool in learning and showcasing competence. Capability was not explicitly researched in the e-portfolio and postgraduate nursing literature; however some studies mentioned personal qualities that alluded to capability traits.

Anderson et al (2008) reviewed the use of an e-portfolio designed by Gardner (2007) for use with nurse practitioner students at Queensland University of Technology. The portfolio followed the *spinal column* structure and used the national competency standards as anchors for reflective narrative and evidence. Student experiences of the e-portfolio were solicited via interview and survey. Thematic analysis of responses indicated the competency standards were of benefit to NP candidates in shaping learning and reflection, understanding the expanded scope of the NP role and planning future professional development. Students identified additional uses of the e-portfolio including lifelong learning, an educational tool for subsequent cohorts of NPs and identifying research needs. While the sample size was small with only four participants, the study demonstrated the use of national competency standards for NPs was of value to students in their learning and professional development. The next study suggests an increased focus on personal qualities may raise awareness of and possibly develop capability.

A study by Naude and Moynihan (2004) at Curtain University, Western Australia provided an analysis of the e-portfolio experience amongst 32 postgraduate nursing students undertaking a Corporate Nursing Leadership Development program. The portfolio exercise included a student resume, an outline of personal and professional goals pertaining to the coursework and self assessment of coursework specific core competencies. Self reflection via activities such as evaluation of skills and setting learning goals was thought to be the most valuable aspect of the process, reported by 22 students. Practical applications such as applying for jobs and development of computer skills were also considered to be beneficial by students. However, pre-existent information communication and technology skills were limited amongst the cohort, which may have influenced the perception of students who described the task as time consuming and difficult. One student referred to the possibility of using the e-portfolio to demonstrate competence for professional registration. While Naude and Moynihan did not require students to link self reflective narratives to relevant competency standards for authorisation, the e-portfolio still represents a *spinal column* structure as students were guided by coursework competencies and self directed goals.

The focus on personal goals and qualities may be beneficial to NP candidates in raising awareness of capability traits and their subsequent development. This was supported by student reports of enhancement of characteristics describable as capability including reflective thinking, confidence, self directed learning, new ways of thinking and team work (Naude and Moynihan 2004). Similarly, a case study described in Emden et al (2003/2004) implied that portfolios may be used to facilitate the development of capability in a professional setting. Specifically, portfolios were introduced to senior nursing staff at Whyalla Hospital and Health Services to promote personal and organisational development, which was also described as "personal and professional attainment of wisdom" (p.130). While the initial focus of the portfolio was to provide evidence of competence, the focus of the portfolio was rapidly shifted to personal development, which was deemed more meaningful by participants.

In international literature, there are two examples of e-portfolios in NP pre-registration courses. Joyce (2005) provides an example of a *spinal column* portfolio in a NP education setting. Specific aims of the portfolio were to create a bridge between theory and practice, provide evidence of core concepts and competencies stipulated by national standards and to facilitate personal development planning (PDP) amongst students. As a learning component of a clinical practice subject, students were prompted to recall and reflect on a clinical experience in their writing and link it to the core concepts and competencies.

The model of action learning and clinical practice has been used in Australian NP education (Gardner et al 2004a, 2004b) and the above study demonstrates how e-portfolios can be integrated into the existing model. In addition, the portfolio framework used by Joyce's (2005) students could be expanded upon to include reflective narratives to demonstrate capability in practice.

Hayes, Chandler, Merriam and King (2002) adopted a different approach to portfolios in their study and described the experience of one student who completed a *cake mix* style portfolio. The student was required to provide evidence of prior education and development to stimulate reflection. By beginning with employer references, educational certificates and awards, the student engaged with the development of an e-portfolio in the form of a reflective narrative, supported by a mentor within the faculty. The construction of a reflective narrative based on personal work history may be especially beneficial to postgraduate students, both to affirm and validate their commitment to their career and reasons for commencing postgraduate study and to identify skill areas in need of further development (Tigelaar et al 2006).

PORTFOLIO ASSESSMENT

While the *spinal column* and *cake mix* portfolio structures benefit students by bridging theory and practice, facilitating skill development for reflective practice and providing evidence for authorisation, these structures are complex to assess. These complexities are also evident in the measure of competence in nursing, which is evaluated from a holistic perspective and views the professional in their practice context (McMullan et al 2003). Reliable and valid portfolio assessment is difficult due to the qualitative nature of content and the complexity of competence, which is not amenable to quantitative analysis. To overcome this issue Endacott et al (2004) and Webb et al (2003) suggested the use of qualitative indicators of research rigor. These are credibility, dependability, transferability and confirmability. Webb et al (2003) developed a qualitative portfolio assessment process based on triangulation of data in the form of multiple sources of evidence for each competency and a documented internal and external audit system involving several assessors and external examiners to ensure consistency between assessors. Data was further triangulated by implementing the process across four sites for undergraduate nursing and midwifery students. In Webb et al's (2003) study and similar research in the medical field (Driessen et al 2006; Driessen et al 2005) the focus of the research has been the assessment process, rather than portfolio content, however e-portfolio content for NPs would be required to be informed by NP educational standards (Gardner et al 2004a).

CONCLUSIONS AND IMPLICATIONS

In sum, the literature on e-portfolios suggests a combination of the more sophisticated *spinal column* and *cake mix* portfolio structures may be most useful to NPs in education and beyond. Anderson et al (2008) and Hayes et al (2002) demonstrated a *spinal column* format e-portfolio enables students to link evidence and reflective narrative to competency standards, which may be especially useful in guiding learning and enabling students to understand the expanded scope of their role. Professional development, showcasing and assessment may also be aided by this structure. Therefore, to meet the competence and capability needs of NPs, portfolios could be used, for competence and showcasing and for learning and capability. Current literature suggests e-portfolios could be integrated into a NP curriculum model alongside action learning and clinical practice, two key elements of NP education supported by prior research (Hayes et al 2002; Gardner et al 2004b) and assessment based on qualitative indicators (Endacott et al 2004; Webb et al 2003). Further research would be useful to refine and explore the use of e-portfolios to meet the needs of NP candidates and their educators, clinical mentors, authorisation personal and employers.

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Couples perception regarding how lifestyle might affect fertility: results of a pilot study

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KEY WORDS

lifestyle, infertile, perception, healthy child, couples

ABSTRACT

Background

There is evidence that lifestyle behaviours can adversely affect general health and reproductive performance. Despite this evidence a substantial proportion of the Australian population continue to ignore the importance of a ‘healthy lifestyle’.

Aim

This study aimed to examine the perceptions of infertile couples regarding the effect lifestyle might have on general and reproductive health.

Methods

Twenty new patients from an Adelaide fertility clinic were interviewed and asked a series of structured questions about their own lifestyle and whether they thought that various lifestyle factors might affect the chance of conceiving and a healthy pregnancy. They were also asked to rate the possible effect of other factors on the chance of conception, using a 10-point likert scale.

Results

Most couples thought smoking and being over or underweight would adversely affect the chance of conceiving and a healthy pregnancy. Couples also perceived that taking recreational drugs and psychological stress would adversely affect the chance of conception, but were not as convinced about the effects of other lifestyle factors such as alcohol and caffeine consumption. Although most were taking some type of over the counter supplement, only half of the females were taking folic acid. The majority of participants wanted to make changes to their lifestyle and common barriers included, insufficient time, difficulties in finding an enjoyable exercise and lack of motivation.

Conclusion

This study has highlighted that infertile couples are generally aware of the potential impact of some lifestyle behaviours on fertility. However, only half of the obese women in this sample considered their weight to be a risk factor to their own fertility and while most were taking over the counter supplements, half the females were not taking folic acid. There remains an obvious need to research and develop effective means of assisting couples to make ‘healthier choices’ that will improve their general health and well being and chances of conceiving and delivering a healthy child.

INTRODUCTION

Lifestyle behaviours have been shown to affect reproductive performance in both the infertile and general population. There is strong evidence that age, weight and smoking impact on general health and adversely on reproductive performance (Homan et al 2007). For example recent results from 36,412 first IVF cycles demonstrate a decline in live birth rates with increasing female age. For women aged 30 or over, each additional year in age was associated with a 13% (99% CI: 12–14%) reduction in the chance of a live delivery (Wang et al 2008). A large Australian study of 3,586 women who underwent Assisted Reproductive Technology (ART) treatment found pregnancy rates were halved for very obese women in comparison with women with a normal BMI (Wang et al 2000) and a study of 2,112 pregnant women found those women with a BMI of >25 or <19 had a relative risk of time to conception of >12 months of 2.2 (95%CI 1.6–3.2, P<0.0001) (Hassan and Killick 2004). Several other lifestyle factors such as psychological stress, caffeine consumption, alcohol consumption and exposure to environmental pollutants have also been implicated although the evidence is equivocal (Homan et al 2007). Folate plays a crucial role in the development of the central nervous system and numerous studies have confirmed the importance of adequate folate prior to conception and in early pregnancy (McDonald et al 2003).

However, despite this evidence people continue to ignore the importance of healthy lifestyle choices. The lifestyle of a substantial proportion of the Australian population may be adversely affecting their general and reproductive health. For example the prevalence of overweight and obesity has more than doubled in the past 20 years with 60% of the Australian population being overweight or obese (Cameron et al 2003) and 70% of those aged over 15 years are reported to have sedentary or low exercise levels (ABS 2004-2005a). There is a trend for women to delay childbirth most likely due to social reasons such as establishing their career or not having found a suitable partner and although current figures show the prevalence of smoking has decreased, 23% of adults are still smokers (ABS 2004-2005b).

Risk factors for individuals extend to couples because the lifestyle of both partners contributes to reproductive health and delivering a healthy baby. How aware infertile couples are of the importance of lifestyle factors is largely unknown. The aim of this study was to pilot a questionnaire to examine the extent to which couples perceived the effect lifestyle might have on general and reproductive health and to examine the suitability of conducting couple interviews focussed on lifestyle and fertility.

MATERIALS AND METHODS

Couples attending an Adelaide based fertility clinic were recruited to the study and ethics approval was granted by the Children, Youth and Women's Health Service Human Research Ethics Committee. The couples were all new patients and approached after booking their first visit to the clinic and invited to participate. They were given an envelope containing an introductory letter, an information sheet explaining the study and a consent form. They were followed up two weeks later with a phone call asking if they wished to participate. For those couples who agreed to take part in the study, an interview time was organised either at the clinic or in their own home. A consent form was signed prior to the interview. Interviews (couples) were conducted by a single researcher (GH) and took half an hour to an hour to complete. Each partner (male and female) were asked a series of structured questions regarding their lifestyle and whether they thought that various lifestyle factors might impact on the chance of becoming pregnant or on the health of a pregnancy (Appendix 1). The questions were developed with the aim of encouraging participants to answer according to their own individual perception of certain lifestyle factors and how they might impact on their health and fertility. Specific definitions of lifestyle factors were therefore not provided. Participants' responses were recorded in writing and taped, which allowed the interviewer to concentrate on what they were saying and review the tape following the interview. Tapes were listened to in detail and information abstracted from them.

The questions consisted of three sections. The first comprised of fourteen items related to smoking and weight and whether couples though they might impact on the chance of conception and a healthy pregnancy. The second section comprised of seven items relating to the possible impact of recreational drugs, psychological stress, alcohol, caffeine, diet, exercise and taking over the counter supplements. Each factor in this section was rated using a 10-point likert scale, on how participants perceived they might influence the chance of becoming pregnant (1=not influential, 2-4=slightly influential, 5-7=moderately influential, 8-10=highly influential). The third section comprised of two items related to making lifestyle changes.

Responses to the questions were analysed using a combination of qualitative and quantitative methods, which is an effective way of providing a flexible approach to a complex research question (Andrew and Halcomb 2006). Descriptive aspects were compiled with the aid of Microsoft Excel. Qualitative data was analysed using thematic analysis, a recognised qualitative method (Aronson 1994) that demonstrates rigour and reflects the depth of the data.

RESULTS

Sixteen couples were invited to participate and ten agreed to be interviewed. All couples were male and female partnerships. The most common reasons for non participation was difficulty in finding a time when both partners could be present (four couples). The demographic characteristics of couples are described in table 1.

Table 1: Demographics

Couple	Age M	Age F	Infertility Diagnosis	Children	Duration of infertility (number of years attempting pregnancy)	Education
1	38	37	Ovulatory disorder	0	2	M= D F=D
2	39	42	Low ovarian reserve	1 (+1 m/c)	3	M=D F=Y12
3	45	42	Semen factor, low ovarian reserve	0	1	M=D F=Y12
4	28	30	Ovulatory disorder	1	1	M=D F=D
5	37	35	Unexplained	0	10	M=Y12 F=D
6	39	36	Semen defect	0	3	M=Y12 F=Y12
7	32	29	Semen defect	0	1	M=D F=Y12
8	41	41	Low ovarian reserve	0	1	M=D F=Y12
9	25	23	Ovulatory disorder	0	2	M= <Y12 F= <Y12
10	47	47	Low ovarian reserve, ovulatory disorder	0	2	M=D F=D

Education: D = Degree, Y12= Year 12, < Y12= less than year 12

Smoking

When asked about past and present smoking habits, only one couple reported that they were current smokers (table 2).Although 70% of males and 90% of females thought smoking was either likely to or would adversely affect the chance of conception, one couple thought it would not and two males were unsure. Common reasons given for a detrimental effect included: smoking is generally bad for you, smoking negatively affects the blood flow and oxygen levels in the body, it is a toxin and smoking can damage sperm and alter a woman's hormones.

Most males and females thought that smoking was likely to or would adversely affect a pregnancy, with only one male and one female stating that they were unsure (table 2). The problems described included: smoking causes low birth rate, increases the chance of birth defects, the baby may have underdeveloped lungs and be more susceptible to Sudden Infant Death Syndrome.

Table 2: Perceived effects of smoking and weight

Smoking	**Male (N=10)**	**Female (N=10)**
Current smoker	1	1
Past smoker	1	5
Adversely affect chance of pregnancy	7	9
Adversely affect pregnancy	9	8
Weight	**Male (N=10)**	**Female (N=10)**
Perceived to be overweight	6	6
High BMI >30	3	4
Adversely affect chance of pregnancy	7	10
Adversely affect pregnancy	7	9
Weight relevant to our infertility	2	2

Weight

When asked whether they considered themselves over or underweight, six males and six females said that they were overweight (table 2). Using the usual definition of abnormal weight, a body mass index (BMI kg/m2) of ≥ 25 or < 20, three of these males had a high BMI and four females had a high BMI. The remaining five who considered themselves overweight were within the normal range.

The rest of the sample recognised they were within the normal weight range.

In relation to whether being over or underweight might adversely affect the chance of conception, all females and 70% of males thought that it would. While four couples were unsure why, the most common reasons given were: excess weight affects a woman's hormones, being undernourished can disrupt the menstrual cycle and the body doesn't function properly if either over or under weight. When asked if weight would adversely affect a pregnancy, 90% of females and 70% of males thought that it would. Again four couples were unsure why and the most common reason given was lack of nourishment for the baby particularly if the mother was underweight. Only one female referred to pregnancy complications such as gestational diabetes and hypertension.

Although all the females with a high BMI said that this could affect the likelihood of conception, only two thought it was problematic to their own chance of becoming pregnant. However, they all wanted to lose weight and reported that the biggest problem in doing so was insufficient time to plan and prepare proper meals and exercise and not being sufficiently organised.

Other lifestyle factors

Most participants thought that taking recreational drugs would negatively affect the chance of becoming pregnant, with 17 out of 20 rating it as highly influential (table 3). The most common reason described was that drugs are 'toxic'. Psychological stress was also perceived by most to have a negative affect on fertility, with 14 out of 20 participants rating it as highly influential. Four males said stress was problematic because it affected sexual performance and 70% of couples said the whole body is affected by stress. Two men and four women were currently feeling stressed and two women said they often felt stressed.

More than half of the participants said that alcohol consumption at any level would be highly influential to the chance of pregnancy and one couple though it was only a problem if consumed daily. Reasons given included: a 'gut feeling', alcohol is a toxin, alcohol reduces sexual performance and the advertising regarding no alcohol in pregnancy 'set off alarm bells'. Most participants did not drink alcohol at all, or drank in small quantities (occasionally or one-three times a week).

Table 3 Perception of lifestyle factors (recreational drugs, psychological stress, alcohol, caffeine, diet, exercise, vitamins) on chance of conception

Factor	Male (N=10)		Female N=10)		Why?
Recreational Drugs	Highly influential Moderately influential	N=9 N=1	Highly influential Moderately influential	N=8 N=2	Toxic
Psychological stress	Highly influential Moderately influential	N=7 N=3	Highly influential Moderately influential	N=7 N=3	Decreased male sexual performance Affects general health
Alcohol	Highly influential Moderately influential Slightly influential	N=6 N=3 N=1	Highly influential Moderately influential Slightly influential	N=6 N=2 N=2	Gut feeling Toxic Bad for general health Decreases sexual performance Only a problem in large quantities
Caffeine	Highly influential Moderately influential Slightly influential	N=5 N=2 N=3	Highly influential Moderately influential Slightly influential	N=3 N=3 N=4	Don't know Would need a lot to be a problem Affects sperm Dehydrating
Diet	Highly influential Moderately influential Slightly influential	N=5 N=4 N=1	Highly influential Moderately influential Slightly influential	N=4 N=5 N=1	Healthy diet is good for general health which may promote fertility Secondary effect i.e. bad diet promotes obesity
Exercise	Highly influential Moderately influential Slightly influential	N=1 N= 7 N=2	Highly influential Moderately influential	N=5 N=5	Good for general health which may promote fertility Endocrine system works more efficiently
Vitamins	Highly influential Moderately influential Slightly influential	N=3 N=4 N=3	Highly influential Moderately influential Slightly influential	N=4 N=2 N=4	Not necessary if eating a healthy diet Difficult to eat a healthy diet because of preservatives and additives No strict regulations associated with over the counter supplements

Eight participants considered caffeine consumption highly influential and seven thought it would only be slightly influential to the chance of getting pregnant. Reasons given as to why it could have a negative effect included: caffeine might alter how the sperm move and caffeine is dehydrating. Most participants drank low to moderate amounts of one-two cups of coffee, tea or cola per day.

Most couples thought that eating a healthy diet could improve fertility, because this would promote general good health. Reasons given included: conception is a complex event therefore good nutrition must be beneficial, the body works better when fuelled with a healthy balanced diet. One couple thought that an unhealthy diet would only be a problem because of the secondary effect of promoting obesity. All but two participants said they ate a healthy diet, although take away food was eaten regularly once a week by most.

Most couples thought that taking regular exercise and therefore being physically fit generally promoted a healthy body, which could improve an individual's fertility. However, some couples emphasised that unfit people frequently become pregnant. Only one participant (male) thought that the connection between fitness and fertility was specific, being related to promoting a better functioning endocrine system. Most males (nine) considered themselves to be physically fit and eight exercised on a regular basis. Most females (seven) also said they were fit and took regular exercise. Of the participants who said they were not fit, one exercised regularly and three took no exercise at all.

Although four couples said that it was not necessary to take additional over the counter supplements if eating a healthy diet, all but three (males) were currently taking some type of supplement. One couple was concerned there were no regulations associated with over the counter supplements. The supplements being taken included; folic acid (five females), multivitamins (four males, six females), herbs mixed by a naturopath (two females, one male), primrose oil (one female), Vitamin B (two females, one male), fish oil (one female, one male), glucosamine (one female), Ovulit (one female), horny goats weed (two males), zinc (one male), selenium (one male), horseradish (one male). Four couples said that taking supplementary vitamins were necessary, because it was difficult to eat a healthy diet due to the preservatives and additives that are applied to most foods bought in the shops.

The majority of participants wanted to make changes to their lifestyle (18 out of 20). These changes included; losing weight (two males, three females), eating better (two males, two females), reducing work hours (three males), exercising more (three males, four females), relaxing and reducing stress levels (one male, two females).

Barriers to making these changes included: insufficient time, difficulties in finding an enjoyable exercise, lack of motivation, prioritising what is important, lack of money, lack of willpower, being tired and needing a holiday. Of the five couples who said that insufficient time was the major barrier to them making lifestyle changes, either one or both partners spent long hours working and found it difficult to prioritise exercise and sensible healthy eating into their day. Three couples said that although they wanted to make changes they lacked the motivation and willpower to do so.

DISCUSSION

This was a pilot study to examine the suitability of conducting individualised couple interviews focused on lifestyle factors and fertility. While there is abundant evidence of the impact of lifestyle on healthy fertility (Homan et al 2007), couple awareness and perception of the importance of lifestyle factors in relation to their own situation has not been widely researched. A recent study surveyed students about their fertility knowledge and reported that both males and females were knowledgeable about risk factors for fertility (Bunting and Boivin 2008). However, the study did not ask about the students lifestyle and how they felt it may relate to them.

Being over or underweight has been shown to adversely affect the chance of conception and a healthy pregnancy (Rich-Edwards et al 1994; Norman et al 2004; Lintsen et al 2005) and most participants were aware of this. Responses to the questions regarding weight were paradoxical. Forty per cent of females were obese, they were all aware that they were significantly overweight, however only half of them considered that their weight was a factor in their own infertility.

Considering the strength of the evidence of adverse effects on conception associated with smoking (Bolumar et al 1996; Augood et al 1998; Klonoff-Cohen et al 2001), it is encouraging that smoking was perceived to be problematic to a pregnancy. Only one couple thought that smoking would not harm the chance of conception and two males were unsure. This is in contrast to Roth's study of 388 females, where they found that while risks of lung cancer, respiratory and heart disease and pregnancy complications associated with smoking were well known, women were not well informed about the potential fertility risks (Roth and Taylor 2001). There is a need for increased public education of fertility risks associated with smoking.

Recreational drugs such as marijuana have been implicated in infertility (Park et al 2004). The use of recreational drugs was widely recognised as a negative factor for health and fertility and none of this sample were present or past users.

Psychological stress is common amongst the infertile population (Cousineau and Domar 2007; Hammarberg et al 2001) and six participants in this sample were feeling stressed. Although inconsistent across studies there is evidence that stress may affect female fertility and providing counselling and support has been shown to decrease the time taken to conceive (Terzioglu 2001; Domar et al 2000). The results of this study indicate that both men and women believe stress may impact on their fertility, but although counselling is available free of charge in the clinic none of these patients attended counselling. This is typical of the clinic from which this sample is drawn, where it appears as if only a minority of couples seeks psychological assistance.

Alcohol consumption has been associated with reduced fertility but it is unclear what level of alcohol is significant (Mukherjee et al 2005; Hakim et al 1998). Participants were concerned about the potential effects of alcohol consumption, with more than half of the sample indicating they thought alcohol would adversely affect the chance of conceiving. This belief was reflected in their actions, with most drinking only small amounts of alcohol or not at all. In South Australia the risks of alcohol consumption during pregnancy are well publicised (Womens and Childrens 2004) and other adverse effects associated with heavy drinking are also widely recognised (Zhang et al 2007; Ripabelli et al 2006; Anonomyous 2001), so recognition of a connection between alcohol and fertility could be expected.

The consumption of caffeine has been associated with increased time taken to conceive (Bolumar et al 1997; Wilcox et al 1988) and increased risk of spontaneous abortion (Cnattingius et al 2000), although not all studies have found an association (Hakim et al 1998). Less than half of the participants in this study thought that caffeine consumption was highly influential to the chance of conceiving, however most consumed only small quantities (one to two cups) of coffee per day.

Most participants ate a healthy diet, said they were physically fit and thought the connection between fertility and these factors was associated with general health and well being rather than a more specific connection. The benefits of a healthy diet and regular exercise are well known and this was reinforced by the responses of participants in this study. With regard to over the counter supplements, participants' belief and actions were disparate. Four couples said it was unnecessary to take additional supplements if eating a healthy diet, however all females and most males (eight) were taking some type of supplement. Various supplements were used, the most common being women's multi vitamins (six females). Three participants (two females and one male) were taking a mix of herbs put together by a naturopath and none knew the specific ingredients of theses mixtures. This is a similar finding to a recent South Australian survey of 97 new patients attending a clinic for fertility treatment, where 78% of those taking complementary medicines were using over-the-counter multi vitamins (Stankiewicz et al 2007). The use of Complementary medicine is widespread in America (Berman and Chesney 2005) and Australia (Xue et al 2007; MacLennan et al 2006) and this trend extends to the infertile population (Stankiewicz et al 2007). The popularity of supplements may be explained by the stress of continued infertility and the desire to take unproven and sometimes irrational measures. Further research is required regarding the reasons behind this practice. It is noteworthy that, given the effectiveness of reducing the risk of neural tube defects by taking a daily dose of folic acid (Wani 2000), only half of the females in this study were taking folic acid. Similar results were found in a recent Australian study of 588 pregnant women, where only 23% had taken folic acid prior to pregnancy (Forster et al 2009). This is well below the target that all women planning pregnancy should consume 0.4-0.5mg of folic acid per day for three months prior to pregnancy.

Limitations of this study include the small sample size and the well known difficulties with self reporting of behaviours such as alcohol consumption. The budget limited the opportunity to broaden the numbers of couples interviewed and the objective assessment of lifestyle factors such as alcohol consumption, diet and physical fitness.

While most males and females wanted to make lifestyle changes there were frequent barriers. In order to potentiate effective changes individuals should first be in an appropriate psychological state of mind and have suitable resources and support available. Encouraging couples to utilise the counselling services that are readily available in fertility clinics may assist them in becoming psychologically prepared for change. The information from this study provides a sound basis for conducting a larger study conducting lifestyle interviews with couples seeking fertility treatment, to facilitate and support positive lifestyle changes.

CONCLUSION

This study has highlighted that infertile couples are generally aware of the potential impact of some lifestyle behaviours on fertility. In general participants were well informed about the risks associated with smoking and fertility and weight and fertility. What was not recognised or at least responded to was the major lifestyle risk factor of female obesity, with half of the obese women not considering their weight to be a risk factor to their own fertility. In light of the strength of the evidence relating to the impact of obesity on the chance of delivering a healthy baby, there is a need for community education and realignment of attitudes to support obesity management and prevention. There is also a need for counselling and appropriate resources to be included in the management plan for couples at fertility clinics. The other significant issue was stress and couples should be encouraged to be more forward in facing the problems and seeking assistance. The dangers of, recreational drugs and alcohol were well recognised and were not an issue in this cohort. The absence of folic acid is a specific addressable issue. There remains an obvious need to research and develop effective means of assisting couples to make 'healthier choices' that will improve their general health and well being and chances of conceiving an delivering a healthy child. Including an appropriate lifestyle assessment and counselling regarding appropriate changes should be part of a couples initial assessment at a fertility clinic.

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APPENDIX - INTERVIEW QUESTIONS

Section 1 – Factors affecting the chance of pregnancy and the health of a pregnancy

Smoking

Can smoking affect the chance of becoming pregnant? Y/N		How?
Can smoking affect the health of a pregnancy? Y/N		How?
What about in your case? - give reasons		
Have you ever smoked cigarettes? Y/N	Do you smoke cigarettes now? Y/N	How many do you smoke a day?
Do you have any plans to stop?		
What if stopping increased your chance of becoming pregnant?		
What would help you to stop smoking?		
What prevents you from stopping smoking?		

Weight

Can being over or underweight affect the chance or becoming pregnant? Y/N

How?

Can being over or underweight affect the health of a pregnancy? Y/N

How?

What about in your case? (Give reasons)

Do you consider that you are over or underweight? Y/N (Over or under?)

Do you have any plans to loose/gain weight?

What if losing/gaining weight increased your chance of becoming pregnant?

What would help you to lose/gain weight?

What prevents you from losing/gaining weight?

Section 2 – Factors that may influence chance of becoming pregnant		
Do the following influence the chance of becoming pregnant? *Rate from 1-10 (1= not very influential 10= highly influential)*		
Fitness		
Being physically fit – 1 2 3 4 5 6 7 8 9 10	Why?	How?
How often do you exercise and for how long?		Are you physically fit?
Diet		
Diet – 1 2 3 4 5 6 7 8 9 10	Why?	How?
Do you eat a healthy diet?	How often do you eat take away food? What type?	
Vitamin supplements		
OTC Vitamins – 1 2 3 4 5 6 7 8 9 10	Why?	How?
Are you taking any vitamin supplements?		
What are you taking and why?		
Other OTC		
Are you taking any other ‘natural’ medicines or supplements?		
What are you taking and why?		
Caffeine		
Caffeine – 1 2 3 4 5 6 7 8 9 10	Why?	How?
How much coffee/tea do you usually drink?		
Alcohol		
Alcohol – 1 2 3 4 5 6 7 8 9 10	Why?	How?
How much alcohol do you usually drink?		
Psychological stress		
Stress – 1 2 3 4 5 6 7 8 9 10	Why?	How?
Do you feel psychologically stressed?		
Recreational drugs		
Drugs – 1 2 3 4 5 6 7 8 9 10	Why?	How?
Do you take recreational drugs? - What? How often?		

Section 3 – Making lifestyle changes
Would you like to make any changes to your lifestyle?
If yes what would you like to change and why?
What would help you to make any change/changes?

Comparison of the predictive validity among pressure ulcer risk assessment scales for surgical ICU patients

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KEY WORDS

risk assessment, pressure ulcer, validity, intensive care unit

ABSTRACT

Objective
To compare the predictive validity of three pressure ulcer risk scales: the Braden scale; the Song and Choi scale; and the Cubbin and Jackson scale and to choose the most appropriate calculator for predicting pressure ulcer risk in the Surgical Intensive Care Unit (SICU) in South Korea.

Design
Non-experimental prospective study.

Setting
A 1,053 bed tertiary educational hospital in South Korea.

Subjects
219 SICU patients at a hospital in South Korea from 1 November 2006 to 31 March 2007.

Main outcome measures

Sensitivity, specificity, predictive value positive and predictive value negative and the AUC (area under the curve) of the ROC (receiver operating characteristic) curve of the three pressure ulcer risk assessment scales

Results
Based on the cut-off points presented in this study, the sensitivity, specificity, predictive value positive and predictive value negative were as follows: the Braden scale (cut-off 14) had values of 92.5%, 69.8%, 40.6%, 97.6%, respectively; the Song and Choi scale (cut-off 21) had 95.0%, 69.2%, 40.8%, 98.4%, respectively; the Cubbin and Jackson scale (cut-off 28) had 95.0%, 81.5%, 53.5%, 98.6%, respectively. The AUCs of the ROC curve were 0.881 for the Braden, 0.890 for the Song and Choi and 0.902 for the Cubbin and Jackson.

Conclusions
The results of this research sample showed that the Cubbin and Jackson scale was most effective in predicting pressure ulcer risk compared to the other two scales in the SICU.

INTRODUCTION

Pressure ulcers have traditionally been regarded as an important indicator of patient care quality. A high prevalence of pressure ulcers not only reveals a low quality of nursing but also means high costs of health care in the form of additional hospital time and the need for patient support services (Gould et al 2002). To improve the quality of South Korean health care, a national hospital evaluation program has been initiated under governmental guidance and pressure ulcer prevention care was designated as one of the standards of quality care.

The prevalence of pressure ulcers was approximately 15% during the years of 2003-2004 and patients with pressure ulcers cost 50% more in acute care hospitals in the USA (Pelham et al 2007). Pressure ulcers are also a serious problem in the intensive care units (ICU) of South Korea, showing an incidence from 10.5 to 45.5% (Im 2006; Jun et al 2004; Lee 2003).

An essential step in pressure ulcer prevention is identifying patients who are truly at-risk (Papanikolaou et al 2002). Thus, risk assessment for pressure ulcers should be performed upon admission, because such an assessment can predict pressure ulcer formation in high-risk groups and form the basis for intervention (Bates-Jensen 2001). It is equally important to identify the groups at high-risk for pressure ulcers using a valid pressure ulcer risk assessment scale and provide them with intensive and appropriate nursing interventions to prevent ulcer formation (Bergman-Evans et al 1994). The use of pressure ulcer risk assessment scales and preventive protocol has been reported to decrease the frequency of pressure ulcer occurrence as well as treatment costs (Xakellis et al 1998; Vyhlidal et al 1997; Bergstrom et al 1995).

There are no specific standards for pressure ulcer risk assessment scales established by the national hospital evaluation program in South Korea; however, acute hospitals are required to use pressure ulcer risk assessment tools and preventive care intervention protocols. One of the more widely known scales in Korea was developed by Song and Choi (1991) to predict the rate of pressure ulcer occurrence in ICU patients and is one of the most favoured scales in acute hospital settings.

In Korea, determining the validity of each pressure ulcer risk assessment scale in various clinical circumstances is of importance in clinical decision-making. Throughout the world, there have been numerous scales and devices developed and applied; however, accurate assessments and comparisons remain problematic across a heterogeneous intensive care unit patients (Kirby and Gunter 2008) and studies on the validity of these tools in the SICU have been limited (Table 1). The validity of a risk assessment scale is the degree to which the risk is correctly predicted (Polit and Hungler 1991). Thus, it is essential to test the validity of predictive assessment tools before applying them to patients (Zimmerman et al 1998).

To derive an appropriate calculator by comparing the validity of the two most widely used scales with the Song and Choi scale, the current study assessed the sensitivity, specificity, predictive value positive (PVP) and predictive value negative (PVN) of the following three pressure ulcer risk assessment scales: the Braden (1987), Song and Choi (1991) and Cubbin and Jackson (1991) and tried to identify the most appropriate calculator for SICUs.

Sensitivity represents the proportion of those patients who developed a pressure ulcer, who were correctly predicted as being at-risk of developing one, while specificity refers to the proportion of patients who did not develop a pressure ulcer who were correctly predicted as not being at-risk of developing one. The PVP represents the proportion of those patients who were predicted to be at-risk of developing a pressure ulcer who actually developed one, while the PVN refers to the proportion of patients who were predicted as being not at-risk of developing a pressure ulcer, who did not develop one.

The characteristics of each scale at different cut-off points produced the best balance between sensitivity and specificity can be depicted graphically using a receiver operating characteristic (ROC) curve. The ROC curve allows us to explore the relationship between the sensitivity and specificity of a clinical test for a variety of different cut-off points, thus allowing the determination of an optimal cut-off point (O'Connell and Myers 2002). The area under the curve (AUC) of the ROC curve was calculated to evaluate the overall predictive validity of each scale.

MATERIAL AND METHOD

Study design and sample

A non-experimental prospective study was done to analyse the validity of the three scales: the Braden scale, the Song and Choi scale and the Cubbin and Jackson scale to assess the patients at a university hospital SICU. The subjects of this study were 219 patients, 16 years or older, without existing pressure ulcers on admission, who were admitted to the SICU. All patients received ordinary nursing interventions, especially those related to pressure ulcer prevention. Their position was changed every two hours and they were dried, cleaned and friction/shear managed to prevent pressure ulcers.

Table 1: Summary on validation of the scales in previous studies

Author (year)	Sample size	Setting	Cut-off	Sensitivity	Specificity	ROC
Braden scale						
Bergstrom et al (1987a)	100	Hospital (medical surgical units)	16	100.0	90.2	ND
Bergstrom et al (1987b)	60	Hospital (ICU)	16	83.3	63.9	ND
Braden and Bergstrom (1994)	102	Nursing facilities	18	78.6	74.3	ND
Goodridge et al (1998)	330	Hospital, long-term care facilities	19	69.0	55.0	ND
Lewicki et al (2000)	337	Hospital (cardiac surgery)	14	66.6	29.6	ND
Halfens et al (2000)	320	Hospital (medical surgical units)	20	73.7	70.1	ND
Defloor and Grypdonck (2004)	314	Long-term care facilities	17	62.5	61.4	66.3
Kwong et al (2005)	429	Hospital	14	89.0	72.0	ND
Song and Choi scale						
Song and Choi (1991)	146	Hospital (Neurologic unit)	24	87.5	91.5	ND
Kim (2003)	211	Hospital (ICU, neurologic unit)	23	100.0	76.3	ND
Lee et al (2003)	112	Hospital (ICU)	19	67.0	58.0	68.3
Cubbin and Jackson scale						
Cubbin and Jackson (1991)	5	Hospital (ITU)	24	ND	ND	ND
Lowery (1995)	54	Hospital (ICU)	28	ND	ND	ND
Kim (1997)	253	Hospital (ICU)	26	53.6	71.2	ND
Boyle and Green (2001)	534	Hospital (ICU)	29	83.0	42.0	72.1
Jun et al (2004)	112	Hospital (ICU)	24	89.0	61.0	82.6

(ND=no data, ICU=intensive care unit, ITU=Intensive therapy unit)

Measurements

Braden scale

The Braden scale is the most widely used and its validity has been verified (Bergstrom et al 1998; VandenBosch et al 1996; Barnes and Payton 1993). The scale consists of six subscales of mobility, activity, sensory perception, skin moisture, nutrition state and friction/shear (Kwong et al 2005; Braden and Bergstrom 1987). Each subscale is rated from 1 to 3 or 4 and the summative scores range between 6 and 23. Lower summative scores indicate a higher risk of pressure ulcer development (Bergstrom et al 1987b).

Song and Choi scale

The Song and Choi scale was developed based upon the theoretical background of the Braden scale and its validity has been verified. It is one of the most commonly used pressure ulcer risk assessment scales in South Korea. This scale consists of six subscales of the Braden scale, plus two additional subscales: body temperature and amount of medication (analgesics, sedatives and anticoagulants). Each subscale is rated from 1 to 3 or 4 and the summative scores range from 8 to 31. Lower summative scores indicate a higher risk of pressure ulcer development (Song and Choi 1991).

Cubbin and Jackson scale

The Cubbin and Jackson scale is an instrument developed to assess the pressure ulcer risk of patients in the ICU. It contains ten items: age, weight, the skin condition of the whole body, mental state, mobility, nutrition, respiration, incontinence, hygiene and haemodynamic state. Each subscale is rated from 1 to 4 and the summative scores range between 10 and 40. Lower summative scores indicate a higher risk of pressure ulcer development (Cubbin and Jackson 1991).

Skin assessment tool

The skin assessment tool for pressure ulcer formation, developed by the Agency for Health Care Policy and Research (AHCPR currently known as the Agency for Healthcare Research and Quality [AHRQ] 1994), is classified into four stages.

Data collection and analysis

Data was collected using standard forms by a research nurse who was trained prior to the study in the application of the three scales and the skin assessment tool. The nurse in charge in the SICU with a master's degree in nursing independently assessed each scale through skin inspection and patient records. All subjects who met the study criteria upon admission to the SICU were initially assessed with three scales. Skin inspection occurred daily from 10:00 to 11:00 am until the termination of surgical ICU care to accurately identify pressure ulcer risk factors. The subjects who developed pressure ulcers during their SICU stay were classified as the 'pressure ulcer group;' the patients' scores on the three scales were compared when pressure ulcers occurred. Patients who did not develop pressure ulcers until discharge, transfer to another ward, or death were classified as the 'no pressure ulcer group' and their scores on the three scales were evaluated on the last day of their stay.

Data were analysed using SPSS 14.0. General characteristics of the subjects were obtained using descriptive statistics. The parameters for evaluating the predictive validity of each assessment scale included sensitivity, specificity, PVP and PVN. The ROC curve shows how the sensitivity proportion (vertical axis) varies with the false-positive proportion (horizontal axis, 1-specificity) as the decision criterion is varied. The AUC is a better indicator of predictive accuracy than the fixed sensitivity and specificity because it yields an index independent of the cut-off point, disease prevalence, or other extraneous factors (Hanley and McNeil 1982; Swets 1996). The ROC curve and the AUC analysis appear to be useful methods for selecting an optimum cut-off point in the scale to maximise both sensitivity and specificity. Scales that are close to the upper-left-hand corner have high sensitivity and specificity (Katz 2006). Therefore, a perfect scale has an AUC of 1 and a worthless scale has one of 0.5.

Ethical considerations

This study was approved by the institutional review board of Eulji University, Daejeon, Korea. The team were permitted to collect the data by patients (or families) and the hospital authorities.

FINDINGS

General characteristics of the subjects

Of the 219 patients, 145 (66.2%) were male and their age ranged from 16-98 (mean±SD 58.1±1.2). The average length SICU stay was 11.3 days (range, 3-90 days). Pressure ulcers developed in forty patients (18.3%). Fifteen (37.5%) pressure ulcers were stage I and twenty-five (62.5%) were stage II. The mean length of stay (LOS) before pressure ulcer occurrence was 3.63 days and 25 pressure ulcers (62.5%) occurred in the coccyx area. An artificial respirator was applied to twenty-nine (72.5%) of patients in the total pressure ulcer group.

Validity of the pressure ulcer risk assessment scales

The cut-off points suitable for three scales of SICU patients was given along with the sensitivity, specificity, PVP and PVN as follows: the Braden scale (cut-off 14), the Song and Choi scale (cut-off 21) and the Cubbin and Jackson scale (cut-off 28) (Table 2).

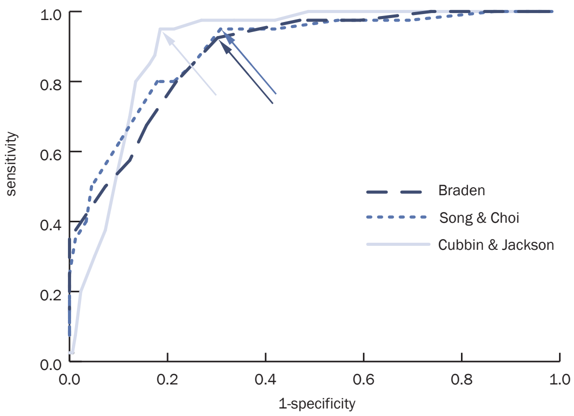
Table 2: Sensitivity, specificity, positive predictive value and negative predictive values for scales at each cut-off point

Scales	Cut-off point	Sensitivity (%)	Specificity (%)	PVP (%)	PVN (%)
Braden	14	92.5	69.8	40.6	97.6
Song and Choi	21	95.0	69.2	40.8	98.4
Cubbin and Jackson	28	95.0	81.5	53.5	98.6

(PVP=predictive value positive, PVN=predictive value negative)

Figure 1 shows the receiver operating characteristic (ROC) curve to assess the overall validity of the scales and the area under the curve (AUC) of each scale. The value for the Braden scale was 0.881, the value for the Song and Choi scale was 0.890 and the value for the Cubbin and Jackson scale was 0.902. Overall, the Cubbin and Jackson scale showed the highest validity. The optimal cut-off points, as determined by the ROC curve, are indicated by an arrow in the upper-left-hand corner of the figure; 14 for the Braden scale, 21 for the Song and Choi scale and 28 for the Cubbin and Jackson scale.

Figure 1: Receiver Operating Characteristic (ROC) curve by scales



DISCUSSION

An essential component of pressure ulcer prevention is the identification of patients who are at risk for pressure ulcer development with risk assessment tools (Bergquist and Frantz 2001). The ideal assessment scale is one that satisfies 100% of sensitivity, specificity, PVP and PVN, but such a scale is unrealistic in the real world. As the sensitivity increases, the specificity decreases and as the positive predictive value increases, the negative predictive value decreases (Katz 2006). Sensitivity and specificity are the most commonly used and recommended statistics for evaluating the predictive validity of pressure ulcer risk assessment scales (Defloor and Grypdonck 2004; Polit and Hungler 1991).

The Braden scale cut-off points for risk assessment in pressure ulcer occurrence vary depending upon the patient characteristics and their condition. The best balance of sensitivity and specificity found for the initial Braden study's cut-off point of 16 was 83.3% and 63.9%, respectively, in the ICU (Bergstrom et al 1987a). Different cut-off points have been suggested for the Braden scale, for various settings including acute care, intensive care, medical-surgical care, home care and nursing facilities across multiple studies. In general, the recommended cut-offs are between 14 and 20 (Kwong et al 2005; Defloor and Grypdonck 2004; Bergstrom and Braden 2002; Halfens et al 2000; Lewicki et al 2000). In ICUs, the most widely used cut-off point was ≤ 16 (Pancorbo-Hidalgo et al 2006); the selected cut-off point in this study as well as in Lewicki et al's (2000) study of a cardiac surgical unit and Kwong et al's (2005) study of acute care hospital was 14. The Song and Choi scale (1991) showed 87.5% sensitivity and 91.5% specificity at a cut-off point of 24 upon its development for neurological and neurosurgical inpatients. Previous studies using the Song and Choi scale have also recommended cut-off points between 19 and 24, depending on the specific care settings (Kim, 2003; Lee et al, 2003). Cubbin and Jackson suggested a cut-off point of 24 for their scale, without finding the corresponding percentage of sensitivity and specificity (Cubbin and Jackson 1991). Other studies using the Cubbin and Jackson scale have recommended cut-off points between 24 and 29 (Jun et al 2004; Boyle and Green 2001; Kim 1997; Lowery 1995).

A high degree of sensitivity alone is not sufficient to establish a useful and worthwhile scale. To minimise the risk of too many false positives, the scale should also be highly specific (Defloor and Grypdonck 2004). The sensitivity and specificity figures of the three risk assessment scales are influenced by the preventive measures used, the heterogeneity of length of observation, the designation of appropriate cut-off points and the healthcare setting (Defloor and Grypdonck 2004). The pressure ulcer risk assessment scale can be accurately predicted when subjects are assessed by scale with higher validity that considers the subjects' characteristics. It is essentially important to determine which pressure ulcer risk assessment tool best reflects SICU patient characteristics.

For the most appropriate cut-off points in predictive pressure ulcer risk assessment for SICU patients, the current study suggests cut-off point of 14 for the Braden scale, 21 for the Song and Choi scale and 28 for the Cubbin and Jackson scale. We suggest that the predictive validity parameters for Cubbin and Jackson scale are high overall, with a sensitivity of 95% and a specificity of 81.5% for a cut-off point of 28.

The overall validity can be calculated quantitatively using the ROC method, which is widely used for the standardisation of medical diagnoses, decision-making criteria and questionnaires or assessment tools (Morasso et al 1996; Zwig and Campbell 1993). A higher AUC value means a higher discriminatory power (Jun et al 2004). We evaluated the three scales under same conditions so the overall validity could be calculated quantitatively using the ROC method and the optimal scale could be identified.

In our study, the Cubbin and Jackson scale was found to be more reliable and valid than the other two risk calculators; the overall validity of the Braden scale was 0.881, the Song and Choi scale was 0.890 and the Cubbin and Jackson scale was 0.902. The validity values we obtained for SICU patients using the Cubbin and Jackson scale were higher than those reported in the studies conducted by Jun et al (2004) and Boyle and Green (2001), which were 0.826 and 0.720, respectively.

The results of this comparison can be attributed to the fact the Cubbin and Jackson scale, unlike the other two, is more inclusive of risk factors (mental state, respiration, haemodynamic state, incontinence, hygiene) could be present in ICU patients. It can be concluded the Cubbin and Jackson scale is the most valid predictive risk assessment tool for SICU patients.

The results of this study on SICU patients at one university hospital might have been affected by the specific clinical environment and the patient characteristics. As only 40 out of the total 219 patients actually developed pressure ulcers, the results cannot be generalised to all SICU patients at every acute hospital.

CONCLUSION

This study was conducted with the aim of finding the most appropriate calculator for SICU patient pressure ulcer risk assessment by comparing the Braden scale (1987), the Song and Choi scale (1991) and the Cubbin and Jackson scale (1991) for the same patients at the same setting. The Cubbin and Jackson scale showed higher values for all four parameters in assessing the validity and the AUC of the ROC curve than the other two scales. With the aforementioned results, the most appropriate pressure ulcer risk assessment scale for the SICU was the Cubbin and Jackson scale.

RECOMMENDATIONS

Further research based on a larger number of subjects in various clinical settings is recommended and studies compare more diverse assessment tools in a specific clinical setting are suggested in order to derive the most effective tool.

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