



Research into practice: Volunteers improving person centred dementia care in a rural hospital

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List of abbreviations

ALZNSW	Alzheimer's Australia New South Wales
ACEU	Aged Care Evaluation Unit
ANOVA	Analysis of Variance
ASET/AARC	Aged Service Emergency Team/Acute to Age related Care
CAM	Confusion Assessment Method
CNC	Clinical Nurse Consultant
DAS	Dementia Advisory Service
E	Evening shift
EBIT	Evidence Based practice Identification Tool
FTE	Full Time Equivalent
GSAHS	Greater Southern Area Health Service
HDR	Higher Degree Research
HELP	Helping Elder Life Program
IC	Infection Control
LGA	Local Government Area
LOS	Length of Stay
M	Morning shift
MPS	Multi Purpose Service
MR	Medical Record
N	Night shift
NUM	Nurse Unit Manager
PCC	Person Centred Care
PPE	Personal Protective Equipment
RN	Registered Nurse
SMMSE	Standardised Mini Mental State Examination

Abstract

PROJECT NAME: Research into practice: volunteers improving person centred dementia care in a rural hospital

KEY WORDS: Dementia; Delirium; Acute Care; Person Centred Care; Volunteers; Sitters

AIM: The study aim was to establish and train a group of volunteers in a person centred care approach to supporting people with cognitive impairment (or at risk of same) and compare outcomes with a control hospital which did not have volunteers.

METHOD: A prospective cohort study design was used. The dementia delirium hospital volunteer program intervention was established and implemented at Bega Hospital (Intervention) which is a 63 bed rural acute hospital. Patient and staff outcomes were compared simultaneously at Moruya Hospital (Control) a 59 bed rural acute hospital which did not have the volunteer program. The outcomes of (n=64) patient participants who received the volunteer intervention over six months at Bega Hospital were analysed and compared to a control group of (n=52) participants at a similar sized hospital at Moruya. Additional measures compared staff and volunteer dementia and delirium knowledge and attitudes to people with dementia and post program perception of the program by staff and volunteers at the intervention hospital.

RESULTS:

- The dementia delirium hospital volunteer intervention was successfully introduced and maintained for the six month period of the study at the intervention facility.
- There was high acceptability of the volunteer intervention by both nursing staff and volunteers, both of whom perceived positive patient outcomes especially related to hydration and nutrition and improved patient safety and emotional care. There was strong agreement by both staff and volunteers that the program was worthwhile and should continue.
- The program is now successfully being continued at the intervention facility
- The patient sample groups were matched in age, diagnosis of delirium, presence of delirium risk and SMMSE cognition scores. The Intervention facility had significantly more females and patients with a diagnosis of dementia, where as the control facility had significantly more patients who had SMMSE cognition screens and the presence of identified cognitive impairment. Patients with a diagnosis of delirium occurred in 48-50% of the patient groups.
- No significant difference was found over the six months in Length of Stay (LOS), falls, use of antipsychotic medication or death rates with some limitations to findings on patient outcomes as intervention and control were not matched on all demographic variables.
- There was no difference in pre and post staff or volunteer dementia knowledge, attitude, or their difficulty or stress in dealing with patients with dementia or delirium. However there are limitations in these results due to survey sensitivity and small sample size resulting from low pre and post matched response rates.

CONCLUSIONS:

The person centred care volunteer program model can improve the emotional security, support and quality of care for patients with cognitive impairment. This leads to better staff and patient outcomes. The model is underpinned by person centred care principles which recognise the importance of emotional security and care for the person with cognitive impairment.

Based on study findings, the model is replicable with minimal resources in other sites and is particularly suited to rural settings.

Further studies examining the impact of this model on patient outcomes related to hydration, nutrition, effect on resolution of delirium, measures for emotional wellbeing of patients and carers and a cost analysis are recommended.

Executive Summary and key recommendations

- The current and projected increase in our ageing population is associated with a concurrent and rapidly increasing incidence of dementia in the community and hospitals. This has implications for the care we provide in our current and future hospital systems
- People with dementia and/or superimposed delirium are known to be at greater risk for falls, functional decline, increased length of stay, premature nursing home placement and death.
- Staff stress and care burden in hospitals has been shown to be significantly increased in the care of confused older people, particularly those with wandering and agitated behaviours.
- The safety and care of patients with dementia and delirium in hospitals particularly those with behavioural problems has significant clinical governance implications.
- The principles of person centred dementia care, focus on the need to support the emotional and psychological wellbeing of people with dementia and are recognised as best practice in dementia and delirium care.
- Staff education in association with changes to hospital environments, better identification of cognitive impairment and operational policy and systems supporting person centred care has long been advocated as a way of improving outcomes for patients with dementia.
- This study aimed to explore the outcomes of a person centred care volunteer support program for patients, nursing staff and volunteers in a rural setting. The volunteer program was established and implemented in partnership with the Alzheimer's Australia NSW (ALZNSW) Dementia Advisor for Bega Valley and Eurobodalla. The volunteer program intervention was implemented at Bega Hospital which is a 63 acute bed rural hospital. Patient and staff outcomes were compared simultaneously over a six month period to Moruya Hospital a 59 bed rural hospital which did not have the volunteer program.
- This report presents the first stage of the study results. More extensive analysis of patient and staff outcome data will form part of the researchers Higher Degree Research (HDR).

Key results

- There was high acceptability of the program with 96% of nursing staff and 100% of volunteers perceiving the program as having a beneficial effect on patient outcomes and that it should be continued. Staff felt supported and assisted in their care and perceived there to be improved quality of care particularly related to hydration and nutrition and emotional care and safety for patients on the program. The program is now being continued at the intervention hospital
- No statistical difference was found in interim patient outcomes analysed for staff or volunteer knowledge, attitude or their difficulty or stress in dealing with patients with dementia or delirium.
- The presence of demographic variables and low response rates were identified limitations in the results.

Key recommendations

- The person centred care volunteer program model can improve the emotional security, support and quality of care for patients with cognitive impairment. This leads to better staff and patient outcomes.
- Generalisation of findings supports replication of the model, particularly to rural settings with high ageing populations and smaller Multi Purpose Service sites with aged care beds.
- A shared and supported organisational approach with Alzheimer's Australia NSW to the establishment and implementation of this model has significant benefits.
- A short term project focus (3-6 months) is required for establishment of the volunteer model. However when the model is integrated as part of ward procedures, it does not require substantial resources for maintenance. A governance structure and volunteer coordination resources are essential to maintaining volunteer programs. An allocation of 0.2 FTE in smaller sites and 0.4 FTE allocation in larger sites for volunteer coordination would be adequate. This FTE could encompass coordinator responsibilities for all of the facility volunteer programs.
- Continued introduction of routine cognition screening in hospitals to better identify and support people with cognitive impairment and undiagnosed dementia is required.
- Future studies examining nutritional and hydration changes, carer satisfaction and a patient outcome cost analysis based on this model will strengthen empirical support.

Introduction

In his address to Hammond Care's 8th Biennial International Conference this year, Glenn Rees referred to hospitals as "dangerous places" and highlighted the significant risks for the person with dementia and those with unrecognised cognitive impairment in acute care settings. Rees' address made reference to the limitations in acute care systems and staff capacity in supporting a person centred care approach. To achieve better outcomes for people with dementia and reduce the burden on hospital staff, he advocated for improved recognition of cognitive impairment, avoidance of hospital admissions and recognition of the need for people with cognitive impairments to feel secure and be emotionally supported (Rees, 2010). Thus, it is within a contemporary context that this study explores the outcomes of a person centred care hospital volunteer program. The program aimed to improve the emotional experience and acute care outcomes for patients with dementia and/or delirium and their carers in a rural setting.

Background

Prevalence and significance of dementia or cognitive impairment in acute care

As the population ages, so too does the occupation of hospital beds by older people and people with dementia and cognitive impairment (Balas et al., 2004, Cunningham and Archibald, 2006, Jones et al., 2006, Peek et al., 2007). Furthermore, there is a projected increase of 200% in the number of people with dementia in Australia over next 30 years (AIHW 2007). In the United Kingdom, people with dementia over the age of 65 occupy a quarter of hospital beds (Alzheimer's Society, 2009). In Australian hospitals it is estimated that 15-50% of all admitted patients have a level of cognitive impairment (Australian Safety & Quality Council, 2005). Projected patient services expenditure for dementia in Australia is expected to rise by 433% from 2002-03 to 2032-33. This is third retrospectively, behind diabetes and Parkinson disease (AIHW, 2007). In recognising this, recent Australian state and national health care policy initiatives have included an acute care focus in planning frameworks to better support the needs of people with dementia (NSW Health and DADHC, 2002, NSW Health and AD&HC, 2010).

Delirium

Delirium is a common and potentially life threatening condition in older adults. Delirium is characterised by an acute decline in cognition, attention, thinking and a change in level of consciousness (Inouye et al., 1990). The causes of delirium are varied and often multi factorial. Common causes are medical conditions, constipation, dehydration, drug toxicity and withdrawal, medication side effects, pain, sensory deprivation and stress or a combination of these (Australian Health Ministers' Advisory Council, 2006). If the underlying cause can be found and treated, the delirium will resolve. Delirium is an independent predictor of increased length of hospital stay, increased risk of development of hospital acquired infections, poor functional recovery, increased risk of falls, increased use of antipsychotic medications, premature nursing home admission and death (Schofield, 2008, Schofield and Dewing, 2001, Australian Health Ministers' Advisory Council, 2006). The prevalence of and risk for delirium is significantly increased in older people with dementia or pre existing cognitive impairment. A systematic review of delirium superimposed on dementia in hospitalised older adults identified prevalence rates of between 22% to 89%, with variances related to the ward setting and patients populations (Australian Health Ministers' Advisory Council, 2006, Fick et al., 2002).

The issues impacting on the person with cognitive impairment in acute care

It is well recognised in the literature that people with dementia are more vulnerable and at risk of adverse outcomes such as falls, functional decline and superimposed delirium when admitted to the acute care environment (Borbasi et al., 2006, Cunningham and Archibald, 2006, Fick et al., 2002, McCloskey, 2004). A diagnosis of dementia has been shown to increase Length of Stay (LOS) and hospital resource utilisation (King et al., 2006, Hill et al., 2007). Impaired mental status is the most commonly identified factor in patients who fall while in hospital (Australian Safety and Quality Council, 2005). Falls are a major clinical governance issue impacting on patient outcomes.

A diagnosis of dementia or delirium has been shown to have a direct correlation with rates of falls and associated resource utilisation in Australia and overseas (Hill et al., 2007, Schofield, 2008).

People with dementia are known to experience significant fear, anxiety and increased confusion when admitted to hospital. Factors such as removal from familiar people and surroundings, the unfamiliar, disorientating and noisy physical environment and the change in normal routines, impact on the behaviours and psychological experience of the person with dementia in hospital (McCloskey, 2004, Borbasi et al., 2006). A landmark study in 1989 by Carmel and Hunter, showed that disruptive behaviour in people with dementia is more likely to occur over times of peak hospital activity, in particular early morning, meal and visiting times. The authors suggest that care planning which focuses on reducing additional demands on the patients with dementia during these times could alleviate additional stress and reduce behavioural issues (Carmel and Hunter, 1989).

In Australia, carer dissatisfaction with the level and quality of care provided to people with dementia in hospitals is not uncommon (Strachen, April 2003). The key findings of a recent Alzheimer's Society UK report, found that 47% of carer respondents reported a decline in the overall physical health of the person with dementia which was not directly related to their medical condition. Additionally a significant number of carers (54%) reported that being in hospital caused worsening of symptoms with increased confusion and dependence. More concerning, 77% of nursing staff responded that antipsychotic drugs were always or sometimes used to treat dementia in hospitals (Alzheimer's Society, 2009). Use of antipsychotic medication in older people with dementia is strongly associated with increased risk of falls, confusion, and over sedation (Australian Health Ministers' Advisory Council, 2006, Banerjee, 2009).

The emotional needs of the person with dementia and person centred care

In identifying the emotional needs of the person with dementia, Kitwood (1997, pp 81-83), defined the key needs of attachment, comfort, identity, inclusion and occupation. The key principles of person centred care advocated by Kitwood incorporate respect, knowledge and value of the person's past, a focus on their abilities, supporting choice, enhancing communication, valuing attachments and maintaining a social environment. Person centred care shifts the focus from the behaviour of the person with dementia to a holistic view of what may be causing or contributing to the behaviour. It is based on the fact that cognition does not determine capacity for emotional wellbeing or ill being, rather it relates to how others interact and understand the person with dementia in respect to interpersonal relationships (Kitwood, 1997). The philosophy and principles of person centred care are well recognised and accepted in the literature as underpinning best practice models and education in both the care of older people and people with cognitive impairment in acute care (McCormack, 2003, McCormack and McCance, 2006, Peek et al., 2007, Higgins et al., 2007, Norman, 2006, Schofield, 2008, Willick and Willick, 2007). However, despite this, our contemporary hospital systems which are underpinned by a medical model, fiscal constraints and task oriented approaches to care, provides challenges and limitations for embedding person centred dementia care into practice (Strachan et al., 2003, Chang et al., 2003, Alzheimer's Society, 2009)

Challenges for staff in supporting people with dementia with behavioural issues or behavioural issues associated with delirium in acute care.

Aggression and wandering are frequently reported behaviours which challenge staff in acute care settings (Jones et al., 2006, Alzheimer's Society, 2009). Although aggression can occur purely as a result of dementia, in hospitalised older patients aggressive behaviour is most often 'triggered' and due to underlying physical, emotional and environmental factors (Borbasi et al., 2006, Jones et al., 2006). The study by Jones et al, (2006) identified environmental constraints communicated by staff in the care of people with challenging behaviour, in particular the environmental difficulties when there is wandering behaviour against a backdrop of time pressures and competing demands. This finding is supported elsewhere (Alzheimer's Society, 2009), where 89% of nursing staff found

working with patients with dementia challenging. Three of the key areas of concern identified by staff in this report included not having time to provide the necessary one-to-one care and dealing with behavioural and safety issues associated with wandering patients. Byers and France (2008) study into the lived experience of registered nurses providing care to patients with dementia in acute care, identified the effect on staff stress and job satisfaction, associated with their feelings of remorse and frustration when not able to practice as they should or would like to (Byers and France, 2008).

In addition to burden of care, the level of knowledge, attitudes and understanding of dementia using person centred care approaches also directly impacts on staff ability to deal with aggressive or challenging behaviour (Fessey, 2007, Alzheimer's Society, 2009). Whilst these issues separately impact on staff's ability to provide person centred care, it is the interrelationship of both system issues and staff knowledge and attitudes which is more influential. In recognising this, Packer (2000), discussed the important effect of system barriers and argued that it is not enough to address only knowledge of dementia to change care practices. This argument is mirrored in a number of other papers related to staff knowledge in care of people with cognitive impairment, where it is recognised that education must incorporate a person centred approach and be accompanied by organisational policies and philosophies that reflect and support system change for person centred care (Schofield, 2008, Borbasi et al., 2006).

In Australia, a Victorian project aiming to improve admission and discharge practices for people with dementia in acute and sub acute facilities developed the Evidence Based Practice Identification Tool (EBIT), (Nay and Koch, 2003). The tool was used in the study for acute and subacute facilities to self assess how well they provided evidence based dementia care under separate categories of organisational policy, environments, staffing, education and care practices. The EBIT provides a very useful framework for other hospitals to use in identifying gaps and planning for the changes required to increase evidence based dementia care. Notwithstanding the usefulness of this tool, in supporting improved practice, it also has to be acknowledged that while the restrictions posed by contemporary medical model systems remain, there is a need to think more laterally in the development of different approaches that can better meet the emotional care requirements and reduce the physical risks for people with dementia and delirium in hospitals.

The concept of volunteers

Increasingly the use of trained 'sitters' for people experiencing agitation, wandering and hallucinations has been recommended as an important adjunct to care for people with dementia and delirium – particularly where family members or nursing specials are not available (Jones et al., 2006, Balas et al., 2004, Day J., 2008, Day et al., 2008).

A successful acute care intervention model aimed at preventing delirium showed that a multi-component intervention targeting risk factors to prevent delirium in hospitalised older patients was effective in reducing the incidence of initial delirium but not recurrent episodes. (Inouye et al., 1999, Vidán et al., 2009). The intervention since named the Helping Elder Life Program (HELP) has been emulated in settings across the United States and in Australia (Caplan and Harper, 2007, Palmisano-Mills, 2007, Robertson and Robertson, 2006, Robinson et al., 2008). This model uses volunteers and although effective, the model is resource intensive. The purchase cost of the patented program is expensive and relies on the existence and support of an interdisciplinary team including a Geriatrician. This limits its transferability in smaller rural settings.

Volunteering is promoted as a way for community members to experience personal satisfaction through helping others, develop new skills, confidence and friendships as well as being part of a team. The use of volunteers is widespread and essential to the operation of many community organisations. Within the Australian health care sector, more than 330,000 volunteers over the age of age 18 provide more than 12 million hours of service, most of this is in the not for profit sector

(NH&MRC, 2003). There has been increasing interest and use of volunteers in Australian hospitals. Concurrent with this has been the recognition that the nature of responsibility and potential risks for volunteers in health environments has to be addressed by providing formal education programs and volunteer management structures (NH&MRC, 2003).

Despite this increasing interest and the use of volunteers in Australia hospitals, studies examining outcomes associated with hospital volunteer programs are limited (Prabhu et al., 2008). There have been a number of recent studies conducted in Australia and overseas in the use of volunteer sitters in falls prevention programs with mixed results regarding the benefits and cost effectiveness (Tzeng et al., 2008). However, the role of volunteers in supporting a person centred care approach to people with dementia in acute care is less well explored. In their study on dementia related aggression in acute care, Jones et al (2006) focused on the issues, difficulties and experiences for staff in managing behaviour and suggested that the use of structured programs for volunteers to provide intensive dementia support could assist in reducing this problem. Their conclusions recommended further research 'to explore the role of volunteers and carers within acute care settings and the impact they could have on reducing the incidence of dementia related aggression' (Jones et al. 2006, p.103).

This study therefore attempts to address this gap. It aims to meet a well established clinical need for the wellbeing of older people with cognitive impairment in acute care by using an intervention which has empirical support.

STUDY AIM

The primary study aim was to establish and train a group of volunteers in a person centred care approach to supporting people with cognitive impairment (or at risk of same) and compare outcomes with a control hospital which did not have volunteers.

Sub-aims

- a) To describe the structure and reach of the volunteer program
- b) To describe the impact and acceptability of the program for hospital nursing staff and volunteers
- c) To determine the resource requirements for replication of the program establishment.

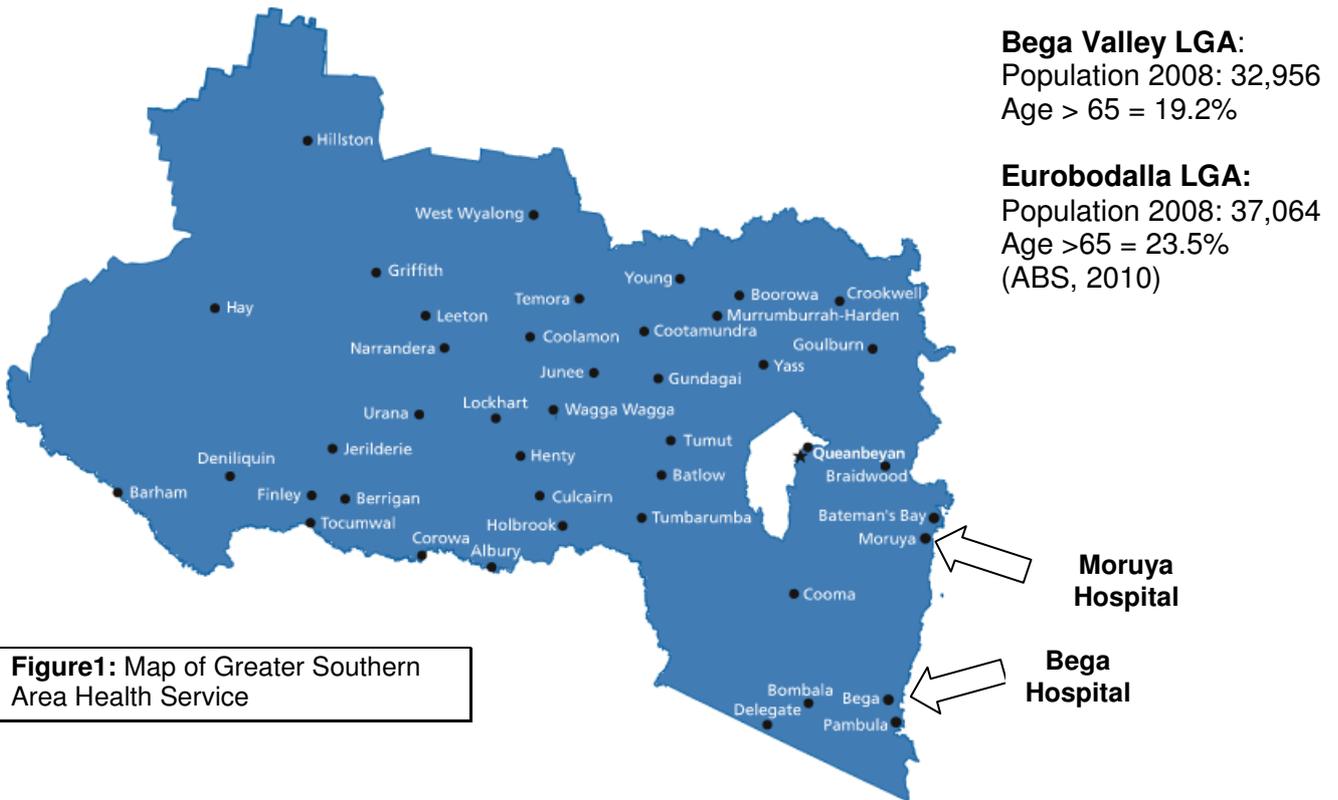
METHODS

Ethics approval

The study was approved by the GSAHS Human Research Ethics committee.

Research design

A prospective cohort study design was used. The hospital dementia delirium volunteer program intervention was established and implemented at Bega Hospital which is a 63 bed rural acute hospital. Bega Hospital is the larger of two acute bed hospitals located in the Bega Valley Shire Local Government Area (LGA). Patient and staff outcomes were compared simultaneously at Moruya Hospital which did not have the volunteer program. Moruya is a 59 bed rural acute hospital and it is the larger of two acute bed hospitals located in the Eurobodalla Shire LGA's. Both of these LGA's are situated on the Far South Coast of NSW.



Research Participants

There were three separate groups of participants as detailed in Table 1.

1. Patients	2. Nursing Staff	3. Volunteers
Intervention Hospital (Bega) Patient participants recruited over 6 months	Nursing staff participants from Bega Hospital Pre and Post (6 months)	Volunteers at first and second recruitment Pre and post education and post program (6 months)
Control Hospital (Moruya) Patient participants recruited over 6 months	Nursing staff participants from Moruya Hospital Pre and Post (6 months)	

Table 1: Research Participants

The Dementia Delirium Hospital Volunteer Program Intervention

The volunteer program intervention was developed in partnership with the Alzheimer's Australia NSW Dementia Advisor for Bega Valley and Eurobodalla. In partnership with the ALZNSW Dementia Advisor, the researcher recruited volunteer participants, developed and conducted a structured volunteer training program and implemented the volunteer program intervention at Bega Hospital. The volunteers were recruited through formal Area Health Service recruitment processes. The establishment and implementation phase occurred between November 2008 and May 2009. The volunteer training program was underpinned by Kitwood's (1997) philosophy and principles of person centred dementia care. An initial twelve volunteers underwent training over four days in April and commenced in May 2009. This program consisted of 8 sessions run over 4 days plus an additional day for mandatory hospital education. Infection Control and use of Personal Protective Equipment was covered in the training and a session on the use of hearing aids and replacing batteries was incorporated. Other presenters included a physiotherapist for gentle exercises and safe walking, a dietician for assisting with menu completion and food choices and, a speech pathologist for positioning and feeding patients with swallowing problems. The volunteers assisted patients who were on thickened fluids when assessed as safe to do so by the speech pathologist. A second recruitment and training of six volunteers occurred in August/September 2009. For the second group, the initial volunteers were able to provide a buddy support system, and their training was run over two days. The second recruitment was to increase the available pool of volunteers and allow for two volunteers per shift when needed. For identification, the volunteers were provided with a Gold Polo T- Shirt with Hospital Volunteer embroidered on the front.

The volunteers provided supportive care to patients at the intervention hospital who met specified eligibility criteria between May and November 2009. The volunteers care was provided over two shifts five days/week. Morning shift was from 8am – 12.30pm and afternoon shift from 3pm – 7pm, excluding weekends and public holidays. A personal profile collecting relevant personal and social information was completed by the volunteer with the participant if they were able to do so or by their family carer. This provided essential information to support the person centred care approach. Assisting with meals and fluids, playing patient preferred music and movies, hand and foot massage and talking one to one were the most common activities performed with patients during the intervention.

The volunteer duties were detailed in their signed duty statement as in Table 2.

Table 2: Care provided by volunteers

Duties undertaken by volunteers
<input type="checkbox"/> Sitting with the patient on a one to one basis or in group activity sessions
<input type="checkbox"/> Assisting with making patients comfortable to support their sleep and rest –including adjusting pillows or providing warm drinks or a hand massage or foot massage
<input type="checkbox"/> Making sure the patient is wearing their glasses and hearing aids and checking that these are clean and working properly
<input type="checkbox"/> Talking to the patient about current events and surroundings
<input type="checkbox"/> Assisting the patient with eating and drinking and when needed regularly offering fluids to drink
<input type="checkbox"/> Assisting patients with completion of their menus
<input type="checkbox"/> Accompanying and helping the person with walking and exercise as advised by the nurses or physiotherapist
<input type="checkbox"/> Supporting the person with activities they enjoy such as reading to them, playing cards etc
<input type="checkbox"/> Using dementia friendly communication when interacting with the person with dementia
<input type="checkbox"/> Communicating any concerns that may arise to the hospital staff or the CNC for Dementia/Delirium as per volunteer guidelines
<input type="checkbox"/> Write down any changes that are noticed in the behavior of the patient in the volunteer records

A staff and volunteer program procedure and resource manual detailing the process, scope and responsibilities for the program were written by the researcher to support the implementation process (Appendix 1). A separate volunteer documentation system was established. A maximum of four patients per volunteer were assigned per volunteer shift. Patients were prioritised according to level of need by the researcher. Volunteers provided support for patients on medical and surgical wards. Over the six month period 86 patients were assigned a volunteer. On average volunteers provided support to 3.5 patients per day with a range of 1 – 7 patients per shift.

Implementation

Extensive consultation and communication with managers and staff occurred as part of the planning and implementation process. Staff information sheets for the Intervention hospital were developed and distributed to nursing, allied health staff, medical officers and domestic staff by the researcher. Volunteer program information posters were also developed and displayed on the hospital wards at the intervention hospital. There was also media promotion through local radio and newspapers to support community awareness of the program, as well as to enhance volunteer recruitment. Regular meetings were held with Nurse Unit Managers and volunteers throughout the pilot phase to monitor the pilot program and adjust or address any program processes or issues as they occurred. The ALZNSW program partner assumed responsibility for drafting and distributing the monthly volunteer rostering over the study 6 month time period. Monthly volunteer meetings were coordinated by the researcher and the ALZNSW program partner over the six month time frame. Written and verbal feedback from the volunteers was gained as part of these meetings and was used to adjust process issues as they arose. The volunteers were also monitored and supported individually on a weekly basis during their ward shift by the researcher.

The researcher and ALZNSW partner made a commitment to ongoing coordination of the program at the intervention hospital until April 2010, with continuation after this time dependant on the commitment of hospital management. Table 3 details the time frames associated with the program implementation and data collection and analysis phase.

Table 3: Program implementation and data collection time line

Volunteer program implementation and data collection phase	Time line
Ethics approval – GSAHS Ethics committee	October 2008
Planning and consultation, development of volunteer criteria and application pack, media promotion and volunteer recruitment	November 2008 – March 2009
Development of Program Procedures	March/April 2009
First volunteer training program and distribution of volunteer consent forms and pre and post volunteer education questionnaires	April 2009
Staff information sessions and distribution of staff consent forms and pre program staff questionnaires at Bega	April 2009
Commencement of program with first group of Volunteers	5 th May 2009
Recruitment of patient participants Bega	May – November 2009
Staff information sessions and distribution of staff consent forms and pre program staff questionnaires at Control Hospital	June-July 2009
Recruitment of patient participants Moruya (Control)	June – December 2009
Second volunteer recruitment and training	Sept – October 2009
Distribution of post program staff questionnaires at Bega	November 2009
Staff post program focus groups at Bega	November 2009
Distribution of post program Volunteer Questionnaires	December 2009
Distribution of post program staff questionnaires (Control)	December 2009
Medical record auditing of all eligible patient participants	February – April 2010
Data entry and analysis	March – June 2010

RECRUITMENT OF PARTICIPANTS

PATIENTS

Potential patients were identified each week at both the intervention and Control hospital by the researcher. Identification occurred with the researcher reviewing the daily patient ward list in discussion with the Nurse Unit Manager or the Aged Service in Emergency Team/ Acute to Aged Related Care (ASET/AARC) Clinical Nurse Consultant (CNC). A patient eligibility checklist was developed and completed by the researcher for each participating patient at the Intervention and Control hospital (Appendix 2). The program was verbally explained by the researcher to the patient and/or their family/carer. Written consent was obtained from the patient and/or their carer for inclusion. The patient/carer at the Intervention hospital consented to being assigned a volunteer, for their medical record to be accessed by the researcher to obtain information about their care and treatment and that this data could be published provided that identifying information was removed (Appendix 3 and 4). Data was collected over six months between May and November 2009. At the Control hospital the patient/carer consented to their medical record to be accessed by the researcher to obtain information about their care and treatment and that that this data could be published provided that identifying information would be removed (Appendix 5 and 6). Data was collected over six months between June and December 2009. The eligibility and exclusion criteria for patient participants are in Table 4.

Table 4: Eligibility and exclusion criteria for patient participants.

Eligibility Criteria for Intervention hospital participants
<ul style="list-style-type: none"><input type="checkbox"/> Age > 65 years or for aboriginal people age > 50 years <u>and</u><input type="checkbox"/> A diagnosis of dementia OR;<input type="checkbox"/> A diagnosis of delirium OR;<input type="checkbox"/> A Standardised Mini Mental State Examination (SMMSE) score of < 25/30 OR; <p>The presence of one or more risk or precipitating factors for delirium including depression, heavy alcohol use, vision and hearing impairment, severe medical illness, a previous history of delirium or if the patient was admitted with a hip fracture.</p>
Exclusion Criteria
<ul style="list-style-type: none"><input type="checkbox"/> Non consenting patients<input type="checkbox"/> Patients whose Length of Stay was <48 hours<input type="checkbox"/> Patients requiring professional specialising<input type="checkbox"/> Patients with physically aggressive behaviours that were identified as potentially placing a volunteer at risk

PATIENT MEASURES

- Level of cognitive impairment for patient participants was measured with the Standardised Mini Mental State Examination (SMMSE) (Molloy et al., 1991). Delirium was assessed using the Confusion Assessment Method (CAM) (Inouye et al., 1990). Cognition screening with the SMMSE was either performed by the researcher, the ASET/AARC CNC or other ward staff who had undergone training in using the SMMSE as part of the admission assessment.
- A checklist for risk factors for delirium was included in the volunteer program assessment checklist and were defined by evidence-based risk and precipitating factors for delirium (Australian Health Ministers Advisory Council, 2006).
- A medical record audit tool was developed and completed post program for patient participants (Appendix 7). The auditing was completed post program by the researcher and an assistant for the intervention patients and post program by the researcher for control patients. Data collected and analysed from the medical record audit were age, gender, length of stay (LOS), diagnosis of dementia, diagnosis of delirium, number of cognition screens completed, cognition scores,

reason for volunteer assignment, number of patients who fell, number of falls, time of falls and the use of antipsychotic medication.

RECRUITMENT OF NURSING STAFF

Bega Hospital (Intervention)

Daily staff information sessions explaining the research and introducing the research program procedure and resource manual were conducted at handover time in the week prior to the program implementation. Envelopes containing the staff information sheet, consent form (Appendix 8) and the pre program questionnaire were left by the researcher with the Medical and Surgical ward Nurse Unit Manager's (NUM) for distribution to staff. (Total distributed = 50). Those returned were then collected in sealed envelopes two weeks later by the researcher and forwarded to the Greater Southern Area Health Service (GSAHS) Aged Care Evaluation Unit (ACEU) for coding and de-identification. Post- program questionnaires were given to the NUM for distribution to staff with the same process for coding and de-identification. All de-identified and coded pre and post program questionnaires were then sent back to the researcher for data entry. Pre program staff questionnaire data was collected in May 2009 and post program questionnaire data in November 2009.

Moruya Hospital (Control)

Consultation occurred with the NUM and ASET/AARC positions. Two in-service sessions were conducted explaining the research. Information posters were developed and displayed in the main office area. Envelopes containing the staff information sheet, a consent form (Appendix 9) and the pre program questionnaire were left by the researcher in individual staff mail pigeon holes (Total = 40). This was repeated post program. The same process for coding and de identification occurred as for intervention hospital. Pre program staff questionnaire data was collected in July 2009 and post program questionnaire data in December 2009 by the researcher.

NURSING STAFF MEASURES

- Pre and post program staff questionnaires were used at the intervention and control hospitals (Appendix 10 and 11). The questionnaires were developed with advice and support from researchers with the GSAHS Aged Care Evaluation Unit. The questionnaires recorded staff designations and previous aged care experience and education and incorporated the following validated measures:
 - Adapted multiple choice questions from the Dementia Knowledge Test (Dieckmann et al., 1988).
 - Delirium pre and post knowledge test (VHA, 2006) which are multiple choice measures of delirium.
 - The Carer stress scale (Bird et al., 2006) assesses degree of distress to staff caused by the characteristic behaviours manifested by a patient.
 - The Approaches to Dementia Questionnaire (Lintern, 1996) , assesses attitudes to care and perception of people with dementia.
- The post-program questionnaire for the Bega Hospital (Intervention) included additional scaled and open ended questions regarding staff perception and acceptance of the volunteer program.

RECRUITMENT OF VOLUNTEERS

Volunteers were recruited through media releases, promotion of the program through existing volunteer groups and approaching individuals who it was considered may be interested. Twelve volunteers were recruited in April 2009, with a second recruitment of a further six volunteers in August/September 2009. The volunteers were community members who come from a range of backgrounds, including past carers, retired nurses, nursing students, a physiotherapist and other community members who wanted to contribute to and become involved with a volunteer project. The research was initially explained at volunteer interview. Information was also included in volunteer application and information packs. Pre-education questionnaires and consent forms (Appendix 12), were distributed on the first day of volunteer training in April (first volunteer group)

and September (second volunteer group) and post-education questionnaires with same knowledge and attitude questions on the last day of training in May (first volunteer group) and October (second volunteer group). Post Program questionnaires were distributed to both volunteer groups in November 2009. The researcher was responsible for administering questionnaires to volunteer's pre and post education and post program. The coding and de identification of all questionnaires was the same as for staff.

VOLUNTEER MEASURES

Pre and post-education and post program volunteer questionnaires (Appendix 13, 14, 15), consisted of the same multiple choice dementia knowledge questions as for staff, adjusted multiple choice delirium knowledge questions, and The Approaches to Dementia Questionnaire. Post Program, there was scaled and open ended questions regarding volunteer perception of the program outcomes.

Data analysis methods

Statistical Package for Social Sciences (SPSS) was used for data analysis. Descriptive statistics were analysed using percentages, the Pearson Chi-Square test and independent t-test. Repeated measures ANOVA testing was used for comparing pre and post questionnaire responses. Open ended questions were coded and analysed drawing from grounded theory method (Henwood and Pidgeon, 2003).

RESULTS

Patient results from Intervention and Control hospitals

A total of 86 participant records were assessed for patients who had been referred to the volunteer program between May – November at Bega Hospital (Intervention). Twenty two records were excluded due to lack of written consent from the patient or their carer, LOS being less than 48 hours or those not meeting other program eligibility criteria. Sixty four participant records were included for Bega. Of these, six records were noted and included as second admissions to the program during the pilot six month time frame. At Moruya Hospital (Control), 58 records were assessed for control patients assessed between July and December. Six were excluded due to lack of written consent or LOS less than 48 hours. Fifty two records were included for Moruya. Of these, five records were second admissions over this period.

AGE AND GENDER

The independent *t*-test was conducted to compare patient age by facility. No statistical significance was found in the age of patients between facilities, $t(113) = -.99$ ($p=0.33$). The mean age was similar at both facilities, ($M\ AGE=83$, $SD=8$, range: 51-98) at Intervention and ($M\ AGE=84$, $SD=6$, range: 72-100) at Control. The Chi-Square test showed a significant difference in gender between facilities $\chi^2(1) = 5.08$, $p=.024$, with the Intervention having a greater number of females $n =44$ (68%) than the Control, $n=25$ (48%). So although the mean age of patients was similar at both facilities, there were significantly more females in the Intervention hospital.

DIAGNOSIS OF DEMENTIA AND DELIRIUM

Diagnosis of dementia was recorded if this had been noted in the participant's medical assessment or if it was recorded on a copy of the General Practitioner Health Summary within the patients Medical Record (MR). A diagnosis of delirium was recorded if the Confusion Assessment Method (CAM) form was completed confirming features of delirium, if the CAM features of delirium were documented in the MR, or if there was a documented diagnosis of delirium by a Medical Officer on the MR or in the discharge summary. There was a significant difference in the number of patients with a diagnosis of dementia $\chi^2(1) = 7.4$, $p=0.006$. The Intervention facility had a significantly greater number of patients with a diagnosed dementia $n=31$ (52%), compared to the Control, $n=13$ (26%), There was no significant difference between facilities in the number of patients diagnosed with delirium $\chi^2(1) = 0.42$, $p=0.837$. In addition, there was no significant difference found in the completion of CAM rates between the two facilities $\chi^2(1) = 3.38$, $p=0.66$.

COGNITION SCREENING WITH THE STANDARDISED MINI MENTAL STATE EXAMINATION (SMMSE)

There was found to be a significant difference in the number of patients who had cognition screening completed with the SMMSE, $\chi^2(1) = 17.1$, $p=0.000$, with more patients in the Control, $n=43$ (84%), compared to the Intervention, $n=30$ (46%). However, independent *t*-test analysis used to compare SMMSE scores between facilities showed there to be no significant difference for SMMSE scores between Intervention, ($M\ score=21$, $SD=5$, score range: 10-28) and Control, ($M\ score=20$, $SD=6$, score range: 13-30) $t(1.01) = -.71$, ($p =0.29$). So although there was a greater number of patients with a diagnosis of dementia at the Intervention facility, in contrast, there were significantly more patients who had cognition screening completed with the SMMSE at the Control. However no statistical difference was found in the diagnosis of delirium, the use of the CAM to support a delirium diagnosis or the SMMSE scores at either facility. Table 5 provides a breakdown of the number and percentages of dementia delirium diagnosis and completion of CAM and SMMSE rates at each facility.

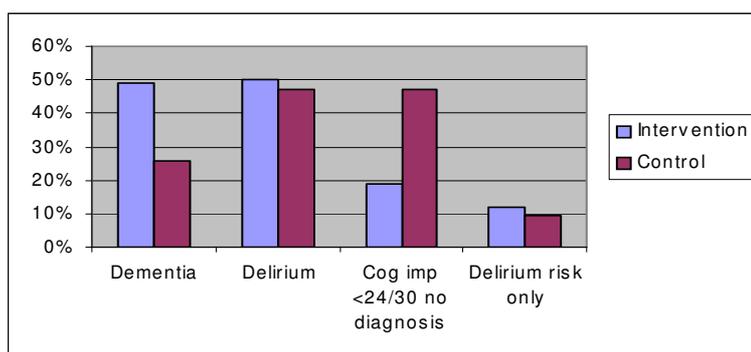
Table 5: Dementia delirium diagnosis and completion of SMMSE and CAM rates by Facility.

	Intervention n (%)		Control n (%)		Total cases	
	YES	NO	YES	NO	F 1	F 2
Diagnosis of dementia	31 (52%)	29 (48%)	13 (26%)	37 (74%)	60	50
Diagnosis of delirium	32 (50%)	32 (50%)	25 (48%)	27 (52%)	64	52
SMMSE attended	30 (46%)	34 (54%)	43 (84%)	8 (16%)	64	51
CAM attended	21 (54%)	18 (46%)	24 (75%)	8 (25%)	39	32

Reason for patient assignment to the program.

The audit tool collected data on reason for volunteer assignment at the Intervention facility and reason for inclusion as a participant at the Control facility. The Intervention facility had a greater percentage of patients assigned for dementia, while the Control had a greater percentage included with SMMSE scores <24/30. Percentage of patients for delirium was similar for both facilities as was percentage with delirium risk.

Figure 2: Reason for patient inclusion by percentage for intervention and control patients.



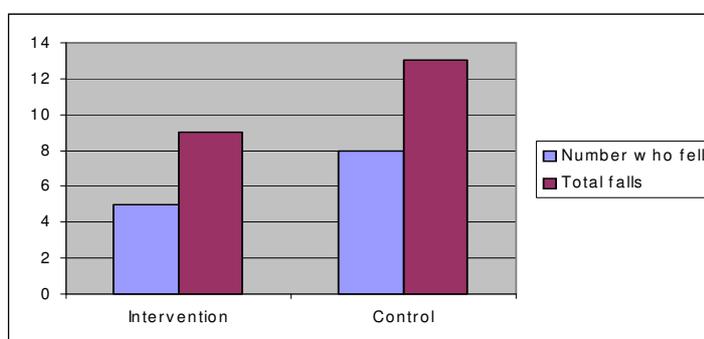
FALLS

Although the number of patients who fell was less for the Intervention facility n=5 (8%), compared to the Control n=8 (15%), this was not statistically significant $\chi^2(1) = 1.65, p=0.19$. Similarly, while the total number of falls was less for the Intervention n=9 (14%), compared to the Control, n=13 (25%), this was also not statistically significant. $\chi^2(1) = 2.23, p=0.13$. Table 6 and Figure 3 shows the number and percentages of those who fell and total falls at the Intervention and Control (Note: some patients fell more than once at each facility).

	Intervention: n (%)		Control: n (%)	
	Yes	No	Yes	No
Number who fell	5 (8%)	59 (92%)	8 (15%)	44 (85%)
Total falls rate	9(14%)	55 (86%)	13(25%)	39 (75%)
Total patients	64		52	

Table 6: Number and percentages rates of patients who fell by facility

Figure 3: Number of patients who fell and the total number of falls at each facility.



All patients who fell at both facilities were cognitively impaired with the greatest percentage being patients with dementia and superimposed delirium at the Intervention (60%) and patients with delirium (50%) at the Control. Figure 4: shows cognition status of patients who fell at the Intervention and Control.

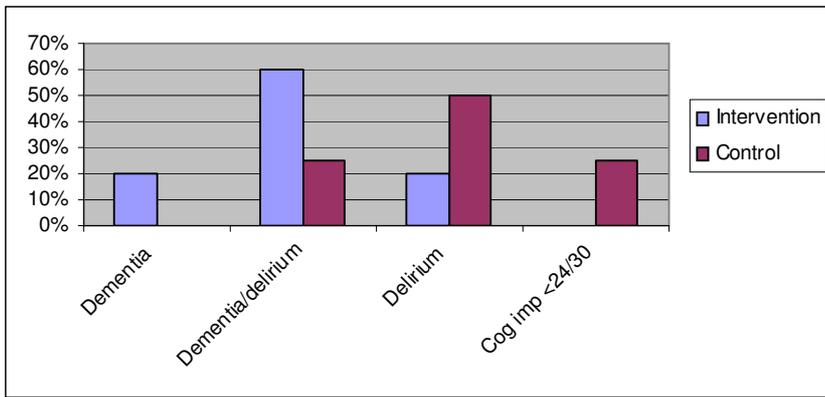


Figure 4: Cognition status by percentage of patients who fell at Intervention and Control facilities.

Time frame of patient falls

Only one fall occurred during a morning (M) volunteer shift time at the Intervention and three at the Control. All other falls occurred outside volunteer shift times either late evening (E) or over night shift (N) (Figure 5). Table 7 displays percentage of falls per shift and the time falls occurred.

Shift	M	E	N
Intervention	1(11%)	4(44.5%)	4(44.5%)
Control	3 (23%)	3(23%)	7(54%)

Intervention	Control
0920	0950 0155
1430	1230 0330
2000	1300 0345
2030	1430 0350
2100	1600 0540
2130	2130
0230	0015
0300	0120
0400	0155

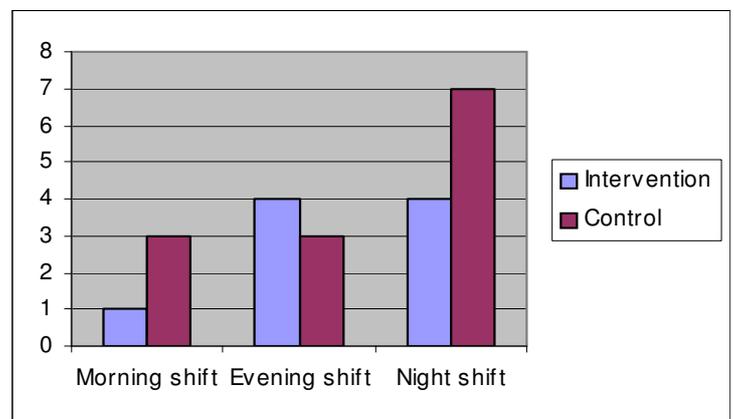


Figure 5: Shift times and numbers of falls by facility

Table 7: Time that falls occurred for the intervention and control. Note: Falls occurring during a volunteer shift time frame are in **bold**.

Falls and Antipsychotic use

A greater percentage of falls were attributed to patients prescribed an antipsychotic medication at the Control than the Intervention facility. At the Control, 46% (n=6) falls occurred in patients prescribed an antipsychotic. This compares to the Intervention, where 22% (n=2) of total falls occurred in patients prescribed an antipsychotic.

PATIENTS WHO DIED

Five patients (8%) died at the Intervention facility, and six patients (12%) at the Control. There was no statistical difference found between the facility death rates $\chi^2(1) = 0.46, p=0.49$. While this supports similarities in the participant groups, the cause of death was not analysed in this study.

LENGTH OF STAY

For LOS analysis, one record from the Intervention facility was found to be three standard deviations above the mean and was therefore removed. There was no statistical significance found between the Intervention, (M LOS=15, SD=13, LOS range:3-54) and Control, (M LOS=14, SD=9, LOS range: 3-50) in LOS $t(112) = .460, p=0.64$.

USE OF ANTIPSYCHOTIC MEDICATION

Patient records were analysed for use of antipsychotic medication. There were three types of antipsychotic medication prescribed to patients at the Intervention and Control. These were:

Haloperidol, Risperidone and Olanzapine. Records were analysed for patients prescribed a new antipsychotic medication on or after admission. Further analysis looked separately at patients who were already taking an antipsychotic medication prior to admission.

No difference was found between the Intervention and Control patients prescribed a new antipsychotic on or after admission $\chi^2(1) = 2.50, p=0.114$, or between patients already taking an antipsychotic prior to admission $\chi^2(1) = 0.79, p=0.37$. Table 8 provides a breakdown of patients at the Intervention and Control facility with a new antipsychotic prescribed, and patients taking a pre existing antipsychotic on admission.

Table 8: Antipsychotic prescribed during admission and patients with pre existing antipsychotic.

	Intervention n (%)		Control n (%)	
	YES	NO	YES	NO
Antipsychotics prescribed during admission.	13 (20%)	51 (80%)	5 (10%)	47 (90%)
Pre existing Antipsychotic	5 (8%)	59 (92%)	2 (4%)	50 (96%)

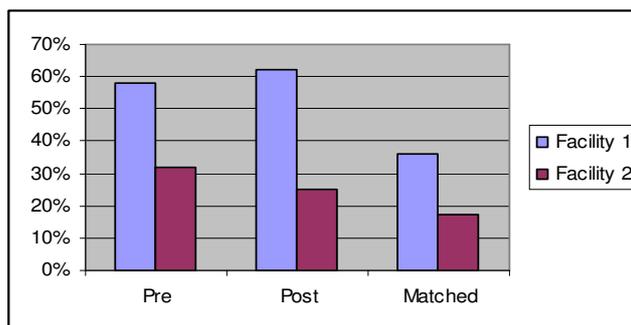
Nursing Staff Pre and Post Program Questionnaire Results

Questionnaire response rates

Of the 50 questionnaires left for staff at both pre and post program for the Intervention facility, n=29 (58%) were returned pre program and n= 31 (62%) post program. At the Control facility, of the 40 questionnaires left for staff at pre and post program, n=13 (32%) were returned pre program and n=10 (25%) post program. However the number of matched pre and post questionnaire responses at both facilities was lower n=18 (36%) at the intervention and n=7 (17.5%) at the Control.

Figure 6 shows all response percentage rates by facility.

Figure 6: Staff questionnaire response rates by facility



Staff Designations

Relationships between survey completion and staff designations, training and experience pre program were determined using the Chi-Square test. There were significantly more Registered Nurses (45%) and Enrolled Nurses (52%), completing the pre program survey at the Intervention facility compared to other designations (3%), $\chi^2(2) = 5.83, p=0.05$. This compared to Control, where (32%) Registered Nurses, (32%) Enrolled Nurses and (28%) of other designations completed the survey. Other designations included CNC, CNS and NUM designations.

Staff education and training pre and post program

There was no difference in relationships between facilities for staff who had specialist aged care training $\chi^2(1) = 2.87, p=0.09$, those with previous aged care experience $\chi^2(1) = 0.76, p=0.38$, or for staff who had attended any delirium or dementia education in the six months preceding the questionnaire completion $\chi^2(1) = 1.41, p=0.23$. At post program, there was no statistical significance between facilities in the number of staff who had undergone aged, dementia or delirium training since the program commencement $\chi^2(1) = 2.17, p=0.14$.

PRE AND POST KNOWLEDGE, CARER STRESS AND ATTITUDE

Changes over time within and between facilities for (a) Pre and post staff knowledge of dementia and delirium (b) pre and post staff stress or difficulty in caring for patients with dementia and (c) pre

and post staff attitudes to people with dementia were analysed using 2 x 2 repeated measures analysis of variance.

Over the six month period, no significant differences were found in pre and post staff dementia, delirium knowledge $f(1,23)=.08, p=.77$ at either the Intervention facility or the Control, $f(1,23)=.00, p=.98$ or between staff knowledge at either the Intervention facility and the Control, $f(1,23)=.49, p=.48$. Similarly, there was no significant difference in pre post staff stress or difficulty in caring for patients with dementia $f(1,19)=3.74, p=0.68$ at either facility, $f(1,19)=1.37, p=0.25$, or between the Intervention and Control facilities, $f(1,19)=2.55, p=0.12$. Finally, there also was no significant difference found in staff pre post attitudes to people with dementia $f(1,21)=.01, p=.92$, at either the Intervention facility or the Control $f(1,21), p=.48$, or between facilities, $f(1,21)=1.66, p=.21$. The following tables show the Number (N), Mean (M), Standard Deviation (SD) and score range for staff questionnaire results by facility. Table 9 shows dementia delirium knowledge results. Table 10 shows staff carer stress question results and Table 11 shows staff attitude question responses.

Table 9: Pre and post dementia delirium knowledge questionnaire results by facility

Facility	Questionnaire stage	N	M	SD	range
Intervention	Pre program knowledge	29	13	3	5-17
	Post program knowledge	31	13	2	8-18
Control	Pre program knowledge	15	13	2	10-18
	Post program knowledge	9	13	2	9-17

Table 10: Pre and post staff carer stress questionnaire results by facility

Facility	Questionnaire stage	N	M	SD	range
Intervention	Pre program staff carer stress	27	15	3	10-20
	Post program staff carer stress	29	15	3	9-20
Control	Pre program staff carer stress	14	15	3	10-20
	Post program staff carer stress	9	15	3	10-19

Table 11: Pre and Post staff attitude questionnaire results by facility

Facility	Questionnaire stage	N	M	SD	range
Intervention	Pre program staff attitude	27	40	7	27-53
	Post program staff attitude	31	40	6	28-55
Control	Pre program staff attitude	15	39	8	25-54
	Post program staff attitude	9	38	8	26-52

Behaviours staff found most stressful when caring for a patient with dementia/delirium

Staff were asked pre and post program at the Intervention and Control facilities to indicate what behaviour they found most stressful in dealing with patients with dementia and delirium in the preceding month. The most common stressful behaviours pre and post for both facilities shown on Table 12 and Figure 7 was wandering. Verbal aggression and trying to get out of bed were second.

Table 12: Behaviours staff found most stressful in patients with dementia/delirium

Behaviour	Intervention Pre	Intervention Post	Control Pre	Control Post
Wandering	12	9	6	7
Aggression (verbal or physical)	8	7	3	2
Repetitive questioning	8	2	1	0
Repetitive behaviours	4	1	3	0
Resisting care	1	2	3	0
confusion	2	7	1	1
disorientation	2	1	1	1
Emotional distress	2	5	1	1
Trying to get out of bed or escape	2	9	1	4
Unpredictable behaviours	2	0	2	0

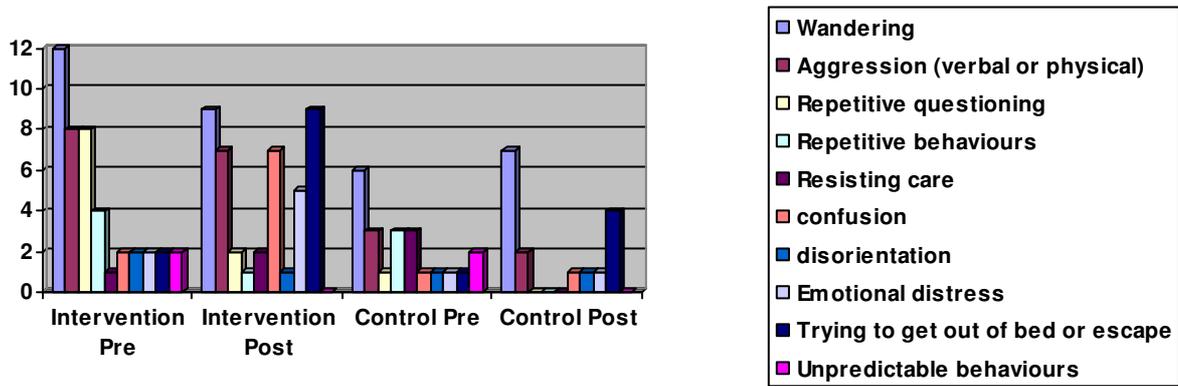


Figure 7: Behaviours staff found most stressful pre and post program at intervention and control

POST PROGRAM PERCEPTION BY NURSING STAFF OF THE VOLUNTEER PROGRAM (INTERVENTION FACILITY)

At the Intervention facility, staff were asked post program to respond Yes or No to the question “Did you enjoy being part of this project?”. Of the 31 survey returns, 25 participants responded to the question with 92% (n=23) responding ‘yes’ and 8% (n=2) ‘no’. Figure 8 displays the number of staff responses to how worthwhile they found the program and whether it should continue. Overall (96%) of responding staff either agreed or strongly agreed that the program was worthwhile and should continue.

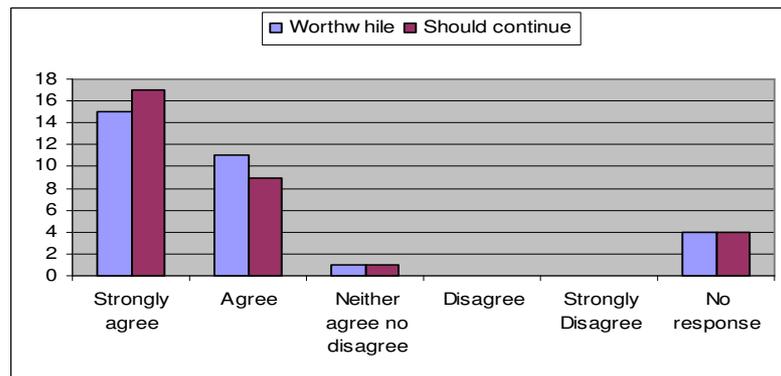


Figure 8: Number of staff responses to program worthwhile ness and continuation

Nursing staff responses to program benefits

The 23 open ended question responses when coded into positive, neither positive nor negative or negative under themes of (1) program impact on staff or (2) patients or (3) combined impact on staff and patients and (4) staff perception of volunteers (Appendix 16). N=17 (74%) of comments were positive, n=5 (22%) neither positive or negative and n=2 (9%) negative. Figure 9 displays the numbers according to coded responses and demonstrates the significance of the overall positive perception by staff in relation to the program for staff and patients.

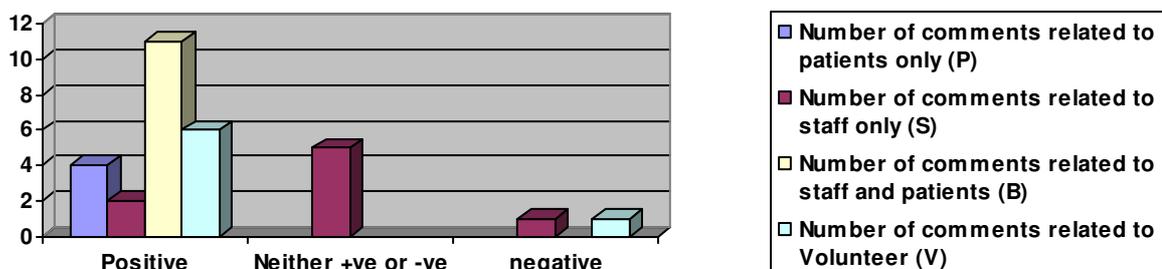


Figure 9: Coded staff responses

The most common theme related to staff perceiving benefits of the program for patients as well as themselves. Staff perceived that patients had better outcomes and were more settled with

volunteer support and as a consequence they felt supported in their care of patients. An example of statements' reflects this:

'Program took away a lot of pressure from nursing staff. The pts were more settled because they had one to one care. Also pts were accompanied in their meal times which resulted in them having a better dietary intake - nurses don't have enough time to provide this supervision time'.

In addition, there was an increase in staff satisfaction with care

'It highlighted need for increase in care - one on one. The increased care provided by the volunteers was exceptional. I believe it complimented what we did really well. The personal one on one approach was excellent and had a significant impact on pt outcomes'.

Volunteer questionnaire results

There was 100% (n=18) response rate to pre post education questionnaires and 89% (n=16) response rate to post program questionnaire. Ten (56%) of volunteers had personally cared or someone with dementia, four (22%) had previously or were currently working as a volunteer and four (22%) had previous experience in paid aged care work.

VOLUNTEER KNOWLEDGE AND ATTITUDE

Changes over time in (a) volunteer knowledge of dementia and delirium and (b) volunteer attitudes to people with dementia which was tested at pre education, post education and post program using 1 x 3 repeated measures analysis of variance. No significance difference was found in the three time variables tested for either volunteer knowledge of dementia, delirium, $f(1.6, 28.5)=2.82, p=.08$, or their attitudes to people with dementia $f(1.4, 20.4)=1.40, p=.23$. Table 13, shows the Number, Mean, Standard Deviation and score range for the volunteer pre and post education and post program questionnaire results.

Table 13: Volunteer questionnaire results for knowledge and attitude.

Area tested	Questionnaire stage	N	M	SD	range
Dementia/delirium knowledge	Pre education	18	6	1	5-9
	Post education	18	8	2	4-10
	Post Program	18	7	3	0-9
Attitudes to people with dementia	Pre education	17	62	6	50-70
	Post education	17	60	4	55-68
	Post program	17	62	5	54-71

PERCEPTION OF PROGRAM BY VOLUNTEER POST PROGRAM

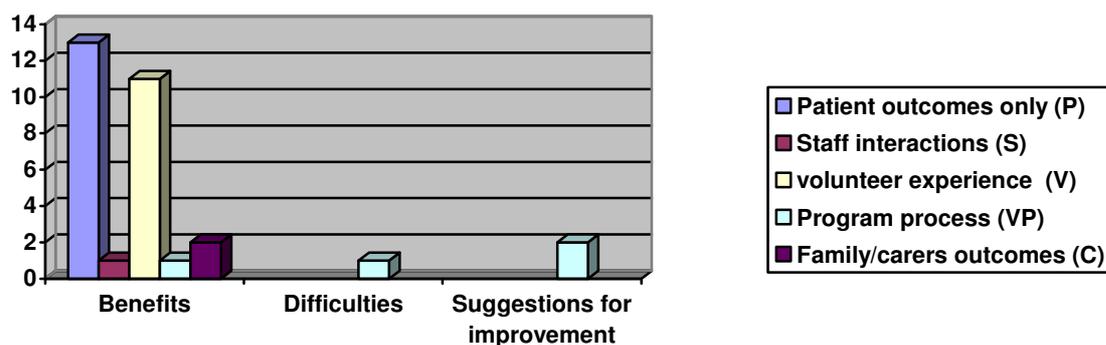
All 16 volunteers respondent's enjoyed being part of the project and either strongly agreed (n=14) or agreed (n=2) that the program was worthwhile and should continue.

The open ended question responses were coded into Benefits, Difficulties and Suggestions for Improvement under themes of patient outcomes (P), Staff interactions (S), Volunteer experience (VP), Volunteer program Process (VP) and Family/Carer outcomes (C). Figure 10 displays number of coded responses according to themes Additional detail is in Appendix 17.

Overall volunteers perceived the program to have benefits. Themes were volunteer's perception that the program resulted in better patient outcomes and the personal satisfaction they experienced as part their role. An example is presented in the following quote.

'The benefits I experienced working with the patients is to see the change they go through. Some patients on the program, when first admitted are anxious, and feel of being insecure, suspicious and lack of trust. After a period of time with them one sees the unfolding of trust, love, respect and cooperation. Very rewarding'

Figure 10: Coded responses to volunteer experience of volunteer program



Volunteer program continuation post study

In February 2010, meetings were conducted by the researcher with the Intervention facility managers to decide on the continuation of the program. The management communicated their support and commitment to the continuation of the program based on the perceived benefits.

In consultation with the Intervention facility management, volunteers and staff, the researcher reviewed the program procedures for transition of the program. Rolling staff information sessions were conducted by the researcher in association with the facility Clinical Nurse Educators to support the program changes and transition. With the continuation, ward staff have now assumed responsibility for identifying and referring eligible patients to the program using a referral procedure. Following staff and volunteer consultation, the program has now been renamed to “Bega Hospital Volunteer Program – helping patients with special care needs”, in recognition of the potential for younger people with dementia to be supported by the program. The Tathra Ladies Hospital Auxiliary have committed to ongoing sponsorship of the program with annual funding to support purchase of the volunteer uniform of gold polo shirt and patient activity resources.

The management of the Intervention facility is progressing with the establishment of a volunteer advisory group and the recruitment of a 0.2 FTE volunteer coordinator position for all of the facility volunteer programs. Membership of the advisory group will include nominated representatives of the facility volunteer programs, the coordinator and management and will be the governance structure for all volunteer programs. Until this is established, the researcher and ALZNSW partner continue to support the program by coordinating and facilitating three monthly volunteer support and feedback meetings.



Two of the program volunteers in their gold polo shifts and members of the Tathra ladies Hospital Auxiliary and staff displaying donated program resources

DISCUSSION

The Dementia Delirium Hospital Volunteer Program was established and implemented as previously outlined in this report. The outcomes of (n=64) patient participants who received the volunteer intervention over a six month period at the Intervention facility were analysed and compared to patient participants at the Control facility. Additional measures compared nursing staff outcomes related to dementia and delirium knowledge and attitudes to people with dementia pre and post program at both facilities. Volunteer measures of dementia delirium knowledge and attitudes were applied at three intervals, pre and post education and post program.

PATIENT DEMOGRAPHICS

The patient sample groups were matched in age, diagnosis of delirium, presence of delirium risk and SMMSE cognition scores. The Intervention facility had significantly more females and patients with a diagnosis of dementia, where as the Control facility had significantly more patients who had cognition screens completed and the presence of identified cognitive impairment without a diagnosis of delirium.

Diagnosis dementia

The increased proportion of patients with a diagnosis of dementia at the Intervention facility cannot at this stage be explained. A diagnosis of dementia was defined by the admission medical assessment or, if it was documented in the patient's health summary. Therefore it should not have been influenced by the researcher involvement or assessment.

Cognition screening with SMMSE

The increased number of cognition screens completed at the Control may have been influenced by the researcher in her clinical role. A more focused staff education program on cognition and delirium screening had been provided at the Control facility prior to the research commencing which had not occurred at Intervention facility. In addition, the weekly visits by the researcher to the Control facility during the study included conducting regular clinical assessments and providing supervision and advice to the ASET/AARC CNC positions. Although the researcher was conducting clinical assessments and regularly visiting the wards at Intervention facility, there was a greater focus on the establishment and coordination of the volunteer program including supervision and support of the volunteers.

PATIENT OUTCOMES FOR FALLS, LOS, DEATH RATES AND USE OF ANTIPSYCHOTIC MEDICATION

No statistical difference was found between the groups in the length of stay, death rates, incidence of falls and use of antipsychotic medications. However, when it is taken into consideration that the participant group at Bega had a significantly higher number of patients with dementia and a greater number of patients with dementia and superimposed delirium, it is reasonable to conclude, based on the evidence that there was a greater number at risk for falls, LOS and use of antipsychotic at the intervention than the control. Although the results do not show a reduction in length of stay, they do support the evidence associating a diagnosis of dementia and delirium with increased length of stay (Hill et al. 2009).

It is interesting to note that the majority of falls occurred outside the time frame of a volunteer shift either late evening or overnight. In relation to the Carmel and Hunter's (1989) study, which showed that people with dementia became more agitated at peak busy times of the day, the small number of falls occurring in the Intervention and Control patients (in whom 48 – 50% had a diagnosis of delirium), the time of falls occurred outside the volunteer shift times. Alteration of sleep wake cycle with increased confusion and agitation occurring late evening and overnight are recognised key features of delirium (Steis and Fick, 2008, Australian Health Ministers' Advisory Council, 2006). Although the numbers were small, this finding does have potential clinical governance and practice implications in relation to falls prevention and monitoring in patients with cognitive impairment during these shift times.

The finding associated with time of falls, also raises the question of the real impact of the volunteer program on falls. The small sample sizes of those who fell would affect the statistical reliability of

further analysis as both parametric and non parametric testing of small sample sizes can result in either inaccurate or higher P values (Motulsky, 1995). A larger study group would therefore be required. It would be useful however to further analyse whether the volunteer program had any impact on reducing day time falls rates by assessing falls rates for this patient group pre and post program at the Intervention facility.

NURSING STAFF QUESTIONNAIRE

The overall pre and post questionnaire response rates at the Control facility were disappointingly low. The matched pre post response even lower at 17.5% resulting in a high rate of potential non response bias. Although the overall response rate at the Intervention facility was much higher, the matched pre post response rate of 36% is still high for non response bias (Fincham, 2008). The fact that the Control hospital did not see a benefit for them in relation to the study is seen as the main reason influencing the low response rate. In addition the nature of the survey distribution at a remote site in association with the time limitations of a single researcher influenced the ability for questionnaire follow up and reminders.

Nursing staff pre and post knowledge, attitude and carer stress

The matched pre and post quantitative questionnaire results were analysed to more accurately assess knowledge change in nursing staff pre and post program. The matched responses showed no detectable effect in dementia knowledge, attitude, or their difficulty or stress in dealing with patients with dementia or delirium. The very small numbers in the matched pre post sample groups at the Intervention (n=18) and at the Control facilities (n=7) potentially affected statistical reliability. However, while the matched numbers were small, the mean, standard deviation and range of scores for all pre and post questionnaire responses were similar, indicating that the matched scores were representative of all responses. The structure of the delirium knowledge multiple choice questions which required that multiple right answers all be selected to have a correct question score may also have affected the sensitivity of the questionnaire.

There were significantly more "other designations" completing the questionnaires at the Control facility which included Clinical Nurse Consultants, Clinical Nurse Specialist and a NUM. These designations apply to staff with advanced level of practice and clinical knowledge. This may have had an influence on the level of pre and post knowledge/attitude at the Control facility. The low response rate again limits further analysis or conclusions.

VOLUNTEERS QUESTIONNAIRE

The pre and post education and post program volunteers questionnaires showed no significant difference in knowledge or attitude. This may have been influenced by the background of the volunteers, 22% of whom had previously worked in paid aged care and 56% had previously cared for someone with dementia. As was the case with staff results, the small sample size and questionnaire sensitivity may also have influenced statistical precision.

Perceptions of the program by staff and volunteers

The open ended question responses show that staff and volunteers perceived the program to have a beneficial effect on patient outcomes and improved their quality of care. There was strong agreement by both staff and volunteers that the program was worthwhile and should continue.

Numerous studies have identified the constraints staff feel are under and the concerns they have in providing supportive and safe care to complex confused older patients in acute care. (Borbasi et al., 2006, Jones et al., 2006, Fessey, 2007, Byers and France, 2008, Day et al., 2009, Day et al., 2008). The frustrations, difficulties and stress staff experience when they do not have the time, confidence or skills to provide the necessary care for these patients, has been shown to have an impact on staff stress levels, job satisfaction as well as patient outcomes (Byers and France, 2008, Borbasi et al., 2006, Jones et al., 2006). Many staff stated that the volunteers complemented and supported their role, which in turn led to them feeling better about the safety and quality of care the patients were receiving. One staff member stated that the program assisted them in feeling more confident about dealing with delirious patients which inferred that the volunteers had a role model education effect. In addition, there were references made in staff and volunteer responses about nutrition and hydration benefits for patients, something that would be an important outcome measure for any future studies based on this model. In contrast, the staff carer stress scaled

question responses did not appear to be altered by the introduction of the intervention. This could indicate that despite staff at the Intervention facility perceiving the program to be supportive and assistive in their care of patients with dementia and delirium, they still find caring for patients with dementia and delirium difficult. In particular, patients with wandering or aggressive behaviour. This supports previous study findings which identify that these are the types of behaviours that staff find most challenging when caring for patients with dementia (Jones et al., 2006, Alzheimer's Society, 2009). This finding has implications for the planning and provision of dementia education for hospital staff.

Most volunteers expressed a great sense of satisfaction and enjoyment of their role and felt they had a positive impact on patient care. Further studies using a Quality Of Life measure for patients as well as gaining family/carer perceptions would strengthen results related to psychological outcomes for patients and carer satisfaction.

THE DEMENTIA DELIRIUM HOSPITAL VOLUNTEER PROGRAM INTERVENTION

The dementia delirium hospital volunteer program was successfully implemented at the Intervention facility for the six month study period. The intervention provided person centred one to one emotional support and cognitive stimulation as well as practical assistance with meals and fluids to patients. The volunteers provided care over two shifts 5 days/week Monday – Friday. Their shifts covered peak busy times of the day, including all meal times, the more busy morning period and evening settling time. On average the volunteers provided support to 3.5 patients per shift with a range of 1 – 7 patients assigned/volunteer shift with the average LOS for patients assigned a volunteer being 15 days with a range of 3 – 54 days.

Earlier reference was made to research findings which suggest that staff education alone is not enough to provide a person centred approach to care of people with dementia in acute care (Packer, 2000). Equally important is the implementation of system and environmental changes as well as organisational policies which supports person centred care in practice (McCormack, 2003, McCormack and McCance, 2006, Peek et al., 2007, Higgins et al., 2007, Norman, 2006, Schofield, 2008, Willick and Willick, 2007).

In this context, the person centred care volunteer model used in this study has been shown to be supportive of staff in their care resulting in high acceptability and perceived improved patient outcomes. The model is underpinned by person centred care principles which recognise the importance of emotional security and care for the person with cognitive impairment. The focus on person centred care in the volunteer training and the use of the personal profile for the Intervention facility patients provided essential information for volunteers to use in understanding the person, their values and attachments and their emotional security needs. The volunteer feedback statements are indicative of the role satisfaction and enjoyment they experienced in their interactions with patients. The rural nature of the program meant that volunteers often found they had knowledge of the patient and/or their family which in turn supported connectedness and communication with patients. This makes the program particularly suited to smaller rural settings. The staff feedback communicated that patients were more settled with volunteer support and were perceived to have better outcomes with references made to improvements in hydration, nutrition and safety of patients. The volunteers are now very much seen as part of the care team.

The ongoing consultation and feedback mechanisms implemented with staff and volunteers in the establishment and implementation of the program were central to the success and subsequent program continuation. These processes are important change management practices (Robbins et al., 2003) and resulted in the early identification and addressing of any problematic program implementation issues as they arose. Future program establishment in other facilities should incorporate a consultative working group with ward staff, management representatives and other key staff. Support, supervision and effective feedback communication systems are important management principles in maintaining volunteer programs (NHMRC, 2003). From the researchers experience this has been and will continue to be a key component for maintaining continuation of the program.

The program continuation in itself has become a mechanism for staff to consider and complete cognition and delirium screening in assessing patient eligibility for the program. The financial

sponsorship of the program by the Tathra Ladies Hospital Auxiliary has allowed the purchase of large clock calendars for all wards supporting a more dementia friendly hospital environment

The implementation of this model using a partnership approach with ALZNSW is a way of combining organisational resources, fostering supportive professional collaboration and facilitating organisational change towards achieving some of the better outcomes advocated by Glenn Rees (2010) and others (McCormack, 2003, McCormack and McCance, 2006, Peek et al., 2007, Higgins et al., 2007, Norman, 2006, Schofield, 2008, Willick and Willick, 2007).

Limitations

The scope of the study particularly in relation to researcher responsibility for recruiting patients and distributing and collecting nursing staff questionnaires across two sites resulted in some limitations. These were the capacity of the researcher to ensure the consistent completion of cognition screening with the SMMSE for all patient participants, the follow up of written consents from family carers who failed to return them and the follow up of nursing staff questionnaires at the control facility. In addition, there was not the capacity to examine outcomes for family carers which would have included an extra dimension to the study findings. The relatively small sample sizes for the low matched pre and post staff questionnaire responses and the staff and volunteer questionnaire sensitivity as well as the demographic variables were also limitations.

Conclusion

The dementia delirium hospital volunteer program intervention was successfully implemented and maintained for the study period of six months. There was high acceptability of the volunteer intervention by both nursing staff and volunteers, both of whom perceived positive patient outcomes, especially relating to hydration and nutrition and improved safety and emotional care. There was strong agreement by both staff and volunteers that the program was worthwhile and should continue. As a result the Intervention facility has now assumed responsibility for the program continuation.

The patient outcome data examined for study has not produced statistically significant results. No statistical difference was found for number and frequency of falls between facilities. There were more patients with a diagnosis of dementia and a greater number of patients with superimposed delirium at the intervention facility. Both of these variables are correlated with increased risk of falls and LOS but due to the small number of fall events in both the Intervention and Control facilities could not be controlled for in this study. A larger study sample could potentially produce different results. The matched responses showed no detectable effect in dementia knowledge, attitude, or their difficulty or stress in dealing with patients with dementia or delirium. The low matched response rates at both facilities and the questionnaire sensitivity were limitations.

The volunteer model is suited to rural settings and the partnership with the Dementia Advisor from Alzheimer's Australia NSW has provided a shared and supportive approach to the establishment and implementation of this program. A project focus using change management techniques has been successful in supporting the smooth implementation and transition changes for continuation. The model is replicable at other sites with minimal resources in particular those sites with greater aged demographics and aged care beds. The procedure manual developed for the program providing a structure for this. Dedicated volunteer program coordination resources and a volunteer governance structure are essential to maintaining, monitoring and supporting volunteer programs.

Future studies examining the impact of this model on patient outcomes related to hydration and nutrition as well as the effect on resolution of delirium, measures for emotional wellbeing of patients and carers and a cost analysis are recommended. Further research analysing additional staff and patient outcome data will occur as part of the researchers HRD Thesis.

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Appendices

Dementia Delirium Hospital Volunteer Pilot Program Staff and Volunteer Procedure and Resource Manual (Manual appendices not included)	Appendix 1
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