

10th National Emerging Researchers in Ageing Conference

Abstracts and Proceedings
“Researching Ageing Transitions”
24 -25 November 2011



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Emerging Researchers in Ageing Conference

“Researching Ageing Transitions”

Welcome

I am delighted to welcome you to the 10th National Conference of Emerging Researchers in Ageing. The conference presents a unique opportunity for higher degree research students to come together to share their research. This year the conference has attracted participants from a wide range of disciplines drawn from twenty two universities across the nation.

The conference title this year is “Researching Ageing Transitions”. With this theme, it is particularly appropriate that the ARC Centre of Excellence in Population Ageing Research is hosting the event. Demographic change creates new challenges in all aspects of ageing, both individual and population-wide. Building the research capacity of the emerging generation of researchers who will witness the profound social changes this transition brings is essential. Your participation in ERA 2011 demonstrates your commitment to research in this important field and I hope today provides you with an enriched appreciation of multi-disciplinary approaches to the challenges of population ageing.

ERA 2011 provides an exceptional opportunity for emerging researchers to explore a diverse range of ageing-related topics from a variety of perspectives as well as network with other higher degree research students, academics, practitioners and policy makers. I warmly welcome you to the event and sincerely hope that your future research benefits from your participation today.

Scientia Professor John Piggott

Director

ARC Centre of Excellence in Population Ageing Research



Keynote Speaker 1

Professor Peter McDonald



Peter McDonald is Professor of Demography and Director of the Australian Demographic and Social Research Institute at the Australian National University. He is President of the International Union for the Scientific Study of Population and a Fellow of the Academy of Social Sciences in Australia. In his role as Deputy Director of the newly established ARC Centre of Excellence in Population Ageing Research, Peter has responsibility for the mentoring of Higher Degree and Early Career Researchers. His recent work has focused on theory relating to low fertility, the implications of low fertility for population futures and upon related policy

options.

Population Ageing and its Implications for the Australian Labour Force

The Australian Treasury has focused on the three Ps in its Intergenerational Reports: population, participation (in the labour force) and productivity (of labour). Related to participation, the Australian Government has advocated that older people might work longer. The paper examines trends in labour force participation in Australia at older ages and explanation of these trends including an analysis of which older Australians continue to work. This is followed by an examination of the long-term impacts of immigration on the Australian labour force (the population component of the three Ps) and, subsequently, the impacts of the combination of the three Ps on GDP per capita. The presentation ends with a discussion of policy implications.

**This session is sponsored by the National Seniors
Productive Ageing Centre (NSPAC)**



Keynote Speaker 2

Professor Henry Brodaty



Henry Brodaty is Professor of Ageing and Mental Health and Director of the Dementia Collaborative Research Centre at The University of New South Wales in Sydney; and Director, Aged Care Psychiatry and Head of the Memory Disorders Clinic at Prince of Wales Hospital. He is past president of Alzheimer's Australia and Alzheimer's Australia NSW and past Chairman of Alzheimer's Disease International. Professor Brodaty sits on several government committees concerned with ageing and with dementia and is currently leading the NSW Dementia Policy Team which has drafted the 2010-2015 Dementia Services Plan for NSW. Professor Brodaty has published over 300 scientific papers and has won several national and international awards for his academic and community work including being made an Officer of the Order of Australia in 2010. His research interests include helping carers, behavioural and psychological symptoms of dementia, drug trials for Alzheimer's disease and general practice diagnosis and management.

Dementia: The Next Big Thing is Now!

Dementia is deservedly a national health priority. Its prevalence in Australia will quadruple from 0.25 to 1 million in the next 40 years with consequences for their families, the aged care workforce (already experiencing shortages), demand for residential care and the economy as dementia costs now exceeds \$6 billion annually.

Research goals span epidemiology (why do Aboriginal people have such a high rate of dementia?), cause (what is the aetiology of Alzheimer's disease), prevention (can population targeted interventions delay dementia?), early diagnosis (biomarkers and improving general practice diagnosis), treatment (drug discovery, clinical trials), clinical care (improving outcomes for people with dementia in hospitals), management of behavioural and psychological symptoms of dementia (such as agitation and aggression), improving nursing home care, reducing carer stress, and better palliative care.

Australian researchers have identified Alzheimer's disease pathogenetic pathways, demonstrated potential of presymptomatic diagnosis using amyloid PET imaging and calculated risk factors for Alzheimer's disease. Epidemiologists have identified modifiable environmental risk factors. Alzheimer's can be diagnosed pre-symptomatically with neuroimaging using PET PiB compound. While drug trials have not yet succeeded in modifying AD there are promising

leads. Psychosocial interventions including our own randomised controlled trials have demonstrated effectiveness: reducing caregiver distress, delaying nursing home admission of people with dementia and decreasing agitation in nursing homes.

The challenges of research into the dementias are great and the canvas broad but so are the needs and the opportunities.

**This session is sponsored by the Alzheimer's
Australia Dementia Research Foundation**



2011 ERA CONFERENCE PROGRAM

Day 1 November 24

Pre-conference workshops		Venue: Scientia Building
1230 - 1330	Registration and Lunch	Foyer
1330 - 1530	Gallery 1	Gallery 2
	Funding Your Research: Applying for Grants	Writing and Reviewing for Publication
1530 - 1600	Afternoon Tea	Foyer
1600 - 1730	Gallery 1	Gallery 2
	Funding Your Research: Applying for Grants (continued)	Writing and Reviewing for Publication (continued)
1800 - 1930	Welcome Reception Sponsored by the Department of Human Services	Business Lounge, ASB BLD, Level 6, West Wing

Day 2 November 25

0815 - 0900	Registration (tea and coffee available)	Venue: Scientia Building Foyer
Opening Ceremony		Gallery 1
0900 - 0910	Welcome to ERA 2011 and Acknowledgement of Country	John Piggott
0910 - 0920	Opening and Welcome	Helen Bartlett
0920 - 1000	Keynote Presentation 1: Population Ageing and its Implications for the Australian Labour Force	Peter McDonald
1000 - 1040	Morning Tea	Foyer

10:40am - 12:00pm

Session One

Gallery 1	Gallery 2	Peter Farrell Room	Gonski Room	HK Alumni Room
Stream 1: Modelling Aspects of Ageing	Stream 2: Determinants of Wellbeing	Stream 3: Residential Care	Stream 4: Innovative Approaches to Disease Management	Stream 5: Calculating Care
Chair: Katja Hanewald	Chair: Kate O'Loughlin	Chair: Sonia Allen	Chair: Helen Bartlett	Chair: Matthew Carroll
Natalia Aranco Assessing the Evolution of the Educational-mortality Gap Among Countries	Lisa Hee The Lived Experience of the Person at Home Following Admission of Their Spouse to an Aged Care Facility. Round 1	Karen Abbey Menu Planning Standards in Residential Aged Care in Action - International Comparison	Pippa Burns The Impact of Self-efficacy on Asthma Management Amongst Older Australian Adults	Joanne Harmon A Pilot Evaluation Study of a Prototype Pain Algorithm for the Assessment and Management of Pain in the Older Person in the Acute Care Setting
Craig Blackburn Consistent Dynamic Affine Mortality Model for Longevity Risk Applications	Kristin Robertson-Gillam Choir Singing as a Psychotherapeutic Intervention for Reducing Depression in Mid to Older Age: a Controlled Trial with QEEG Testing	Janice Taylor The Influence of Protection, Palliation and Costs on Mobility and Independence of Residents in Nursing Homes: A Discourse Analysis	Uwana Evers Combining the Health Belief Model and Social Marketing to Develop a Community-level Campaign about Asthma for Older Adults	Thomas Lo Prevalence Estimates for Arthritis from Self-Reported Data: An Agreement Study Using the ALSWH Data and Administrative Data
Leigh Wilson Transitioning to Climate Change: the Effects of Increasing Daily Temperatures on Elderly NSW Residents	Pippa Burns Profiling the Silver Surfers: Which Older Australians are Using the Internet?	Karen Abbey Aged Care Facilities in Australia: Dieticians Supporting Foodservices -a Required Service	Bin Hua Evaluation of the Efficacy of a Chinese Herbal Medicine in the Treatment of Patients with Osteoarthritis of the Knee	Maryann Street Identification of Factors which Contribute to Extended Length of Stay in the Emergency Department for Patients from Residential Aged Care Versus Community Settings
Carolyn Njenga Modelling Mortality with a Bayesian Vector Autoregression			Melissa Harris Does Perceived Stress Contribute to the Burden Associated with Arthritis in Women at Midlife?	

12:00pm - 1:00pm	Lunch and poster viewing			Foyer	
1:00pm - 2:20pm		Session Two			
Gallery 1	Gallery 2	Peter Farrell Room	Gonski Room	HK Alumni Room	
Stream 1: Wealth and Health	Stream 2: Getting Around in Later Life	Stream 3: Ageing in Context	Stream 4: Dementia Interventions	Stream 5: Cost of Care	
Chair: George Kudrna	Chair: Kate O'Loughlin	Chair: Peter McDonald	Chair: Nady Braidy	Chair: Elena Capatina	
Ralph Stevens Sustainable Full Retirement Age Policies in an Ageing Society	Ides Wong The Role of Family Members in Sustaining Safe Driving among Older Australian Drivers	Safrina Thristiawati Wellbeing of Older Indonesians and Related Socio-Cultural Factors	Amit Lampit Temporal Evolution of Cognitive Training-induced Structural and Functional Brain Plasticity	Inez Farag An Economic Evaluation of A Post-hospital Exercise Program for Older People: Protocol for a cost effectiveness study	
Jun Feng Who is Voluntarily Saving for Retirement? Evidence from Australian Superannuation	Meryl Lovarini Sustainability of Community-based Falls Prevention Programs: A Systematic Review	Robyn Collins Family Members' Constructs of Collaboration and Advocacy in Rural Residential Aged Care Facilities	Chris Materne Once Weekly Spaced Retrieval Training can Lead to Learning in People with Dementia	Saradhi Motamarri Cost Models for Health Intervention in Aged Care Diabetes Management	
Yuvisthi Naidoo The Role of Income and Wealth in the Living Standards and Wellbeing of Older Australians	Kimberley Van Megen Enabling Participation for Older Australian Adults: A GIS Analysis of Accessibility in Urbanised Environments	Zoe Ellen O'Callaghan <i>He Chose RM Williams Boots Instead of Gumboots: Narratives of the Ageing 'Good' Farmer Self</i>	Fiona Millard Improving General Practitioner Dementia Services: The Evidence	Cathy Thomson What Does it Cost to Care? Implications for an Ageing Society	
Bekzod Abdullaev Demographic Change and Pension Policy Analysis: an Overlapping Generations Approach	Lynda Woodward Older Peoples' Perspectives on Exercise after a Fall-related Lower Limb Fracture: A Systematic Review	Natasha Ginnivan Self-perceptions of Ageing from a Cross-cultural Perspective: Do Collectivist Cultures Provide a Buffering Effect for the Impact of Negative Stereotypes about Age?	Gillian Stockwell-Smith Getting in Early: Support for People with Dementia and Their Caregivers		

2:20pm - 3:40pm		Session Three	
Gallery 1	Gallery 2	Peter Farrell Room	Gonski Room
Stream 1: Retaining Older Workers Chair: Matthew Carroll	Stream 2: Social Engagement Chair: Lindy Clemson	Stream 3: Viewpoints on Ageing Chair: Joelle Fong	Stream 4: The Dementia Experience Chair: Lee Fay Low
Marjorie O'Neill Understanding Older Workers Careers in Health	Pamela Coutts Understanding Low Information And Communications Technology (ICT) Use In Older People From Culturally And Linguistically Diverse (CALD) Backgrounds To Harness Its Potential To Support And Keep Them Connected Through Older Age	Clare Aitken Age Differences in the Impact of Ageing Expectations on Health Behaviours and Outcomes	Corinna Dwan Decisional Control and the Role of Advocacy for People Living Alone with Dementia
Hélène Mountford Let's Hang on to What We've Got: Human Resource Management Strategies to Retain Older Workers	Tracie Harvison Universities Going Grey	Tracey Mackie Active Ageing and Community Aged Care, Barriers, Successes and a Way Forward	David Johnson Perceptions of Older Persons Living with Memory Loss
Fleur Danielle St Amand Retention of Older Victorian Healthcare Workers: Preliminary Results and Future Directions	Jeannine Liddle Participation in Art and Craft Activities - A Not so "Simple" Pleasure for Older Women	Edmund Ramon Talob Graceful Ageing: Exploring Ageing Transitions through a Systematic Literature Review	Kirsten Moore Extended Aged Care at Home Dementia Packages and the Intersection with Residential Care
	Joan Stewart Social Networks of Older People: Older People and Shop-going		Amanda Miller Amberber Bilingualism in the Ageing Population: Consequences of Language Change and Language Loss in Bilingual Dementia & Aphasia
1540 - 1610	Afternoon Tea and Poster Viewing		Foyer
Closing Ceremony			Gallery 1
1610 - 1620	Prize Giving		Helen Bartlett
1620 - 1700	Keynote Presentation 2: Dementia: The Next Big Thing is <i>Now!</i>		Henry Brodaty
1700 - 1710	Thanks from the Conference Chair		John Piggott

Workshops

The 2011 conference will feature two postgraduate student workshops to be held concurrently on the afternoon of Thursday 24 November 2011:

1. Writing and reviewing for publication
2. Funding your research: Applying for grants

Writing and reviewing for publication
Presenters:
Professor Yvonne Wells , Head, Lincoln Centre for Research on Ageing, La Trobe University. Associate Editor (Book Reviews), <i>Australasian Journal on Ageing</i> .
A/Professor Vasi Naganathan , Centre for Education and Research on Ageing & Sydney Medical School, University of Sydney, and Consultant Geriatrician, Concord Hospital. Editorial Board, <i>Australasian Journal on Ageing</i> .
Workshop overview:
Scholarly writing is an essential academic skill, and can be useful for practitioners and others who want to share achievements in practice or debate change in policy. There are some fairly simple tips that journal editors can provide authors to improve the quality of manuscripts and increase publication chances. This half day workshop will focus on the editorial perspective. Short presentations will include: <ul style="list-style-type: none"> • writing for publication (approaches and tips) • journal manuscript requirements • the review process • becoming a journal reviewer <p>A central feature of the workshop will be brief review of manuscripts in small groups, with support from the facilitators. The workshop will be interactive and include open discussion.</p>

Funding your research: Applying for grants
Presenters:
Dr Matthew Carroll , Senior Research Fellow, Office of the Pro Vice-Chancellor, Monash University Gippsland.
Professor Helen Bartlett , Pro Vice-Chancellor & President and ERA Convenor, Monash University Gippsland.
A/Professor Laurent Rivory , Director, Research Strategy Office, University of New South Wales.
Katherine Bowditch , Alzheimer's Australia Dementia Research Foundation
A/Professor Jane Mears , School of Social Sciences, University of Western Sydney
Workshop overview:
The workshop will provide expert advice on applying for grants, including: <ul style="list-style-type: none"> • reflections from a senior researcher (Helen) • advice on submitting ARC and NHMRC applications (Laurent) • advice on applying for dementia research grants (Katherine) • advice on applying for other sources of funding (Jane) <p>The workshop will involve an interactive exercise based on completing core aspects of an ARC Linkage Grant application, providing insight into how to frame funding applications. The workshop will include plenty of time for review and discussion.</p>

Prizes

Helen Bartlett Prize for Innovation in Ageing Research

The Helen Bartlett Prize for Innovation will be awarded to the student whose research is considered by the judging panel to be the most original and creative. The prize recognises the outstanding contribution made by Professor Helen Bartlett, ProVice Chancellor Monash Gippsland campus, to the field of ageing research in Australia, particularly as the founder of the ERA initiative.

A prize to the value of \$500 and a certificate will be awarded to the winning student.

AAG Best Paper Presentation by a Research Student and Best NSW Paper

The Australian Association of Gerontology (AAG) is Australia's largest multidisciplinary professional association of people who work in, or have an interest in, ageing. The AAG play an active role in supporting the development of student and early career researchers. The AAG NSW prize will be awarded to the best NSW paper presentation by a research higher degree student in ageing as considered by the judging panel. The AAG prize will be awarded to the best overall paper presentation by a research higher degree student.

Two prizes valued at \$200 each and a certificate will be awarded to the winning students.

Best Poster Presentation by a Research Student

A prize valued at \$200 and a certificate will be awarded to the winning student. The Prize will be sponsored by the ARC Centre of Excellence in Population Ageing Research (CEPAR).

Bursaries

One of the ways in which (CEPAR) provides support for the training of a new generation of young researchers is through its sponsorship of the Emerging Researchers in Ageing (ERA) Initiative. One aspect of this sponsorship is the provision of travel bursaries to ERA 2011 participants. This year 20 bursaries valued at \$250 each were provided to higher degree students to assist with the expenses of travelling to the conference.

Session One Abstracts

Stream One:

Modelling Aspects of Ageing

ASSESSING THE EVOLUTION OF THE EDUCATIONAL-MORTALITY GAP AMONG COUNTRIES

ARANCO Natalia¹

¹University of New South Wales

Although the link between education and mortality has been widely studied from a microeconomic perspective, the subject has received less attention from a macroeconomic point of view even when the connections between these two variables at a global level work through multiple mechanisms. In this regard, as shown by (Gibbons, Limoges et al. 1997) a country that exhibits higher levels of education will generate more and better production of knowledge in all areas; in particular, in the healthcare sector. This will contribute to improve the healthcare services in the country and, through this means, to enhance the health of the entire population, reducing mortality rates. Healthier societies generally exhibit higher growth rates, which in turn allow them to invest more in both education and health. Given the synergies and complementarities generated by these mutual-reinforcing mechanisms, the returns to education in terms of mortality may differ among different countries. In fact, a country with a healthier and more educated population would be expected to better capitalise educational investments, hence amplifying mortality differences between higher and low educated countries. Based on this economic intuition, the purpose of this paper is to analyse the trends in the education-mortality relationship among countries in order to assess if the increase in the gap predicted by the abovementioned mechanisms is confirmed by the empirical evidence. The analysis is a first step in the recognition of the underlying factors behind the evolution of the mortality gap at a global level and as such a valuable input in the design of public policies, especially for those countries that are lagging behind in the international comparison. In particular, it will provide an idea of the potential improvement in mortality rates that those countries could achieve and which role an increase in education levels may play in that improvement.

REFERENCES

Gibbons, M., C. Limoges, et al. (1997). The new production of knowledge: the dynamics of science and research in contemporary societies, Sage.

CONSISTENT DYNAMIC AFFINE MORTALITY MODEL FOR LONGEVITY RISK APPLICATIONS

BLACKBURN Craig¹ SHERRIS Michael²

¹School of Actuarial Studies, University of New South Wales

²School of Actuarial Studies and CEPAR, University of New South Wales

This paper proposes and assesses consistent multi-factor dynamic affine mortality models for longevity risk applications. The dynamics of the model produce closed-form expressions for survival curves. The framework includes an arbitrage-free model specification. Importantly for pricing applications, the mortality model provides consistent future survival curves with the same parametric form as the initial curve. There are multiple risk factors allowing applications to hedging and pricing mortality and longevity bonds, mortality derivatives and more general risk management problems. A state-space representation is used to estimate parameters for the model with the Kalman filter. The state-space form provides a separate measurement and transition system of equations. A measurement error variance is included for each age to capture the effect of sample population size. The transition system dynamics capture the stochastic properties of the underlying mortality rate. Swedish mortality data is used to assess 2- and 3-factor implementations of the model. A 3-factor model specification is shown to provide a good fit to the observed survival curves especially for older ages, and performs better than the 2-factor models. Bootstrapping is used to derive model parameter estimate distributions. Residual analysis is used to confirm model fit. Consistent models are shown to improve model performance and stability.

TRANSITIONING TO CLIMATE CHANGE: THE EFFECTS OF INCREASING DAILY TEMPERATURES ON ELDERLY NSW RESIDENTS

WILSON Leigh¹ VEITCH Craig¹ BLACK Deborah¹

¹Faculty of Health Sciences, University of Sydney

Introduction:

Mean daily temperatures are increasing, a result of changes to global climate. Studies have shown the harmful effects of heatwaves on the elderly, most notably an increased rate of morbidity in those with chronic conditions, but also increased mortality. Studies by Hoshiko (2010) have described a simple method of calculating the association between heatwaves and mortality. Limited studies have investigated these effects in the Australian context.

Aim:

The aim of this study was to investigate any correlation between temperature and mortality in people aged 65+ living in metropolitan Sydney, NSW, using the Hoshiko method.

Method:

Daily mortality counts for the summer periods (1st September – 28th February) between 1997 – 2007 across the Greater Sydney Metropolitan Region (GSMR) were obtained from the Australian Bureau of Statistics. Daily temperature metrics for the same period were obtained from the Australian Bureau of Meteorology. The GSMR was divided into four sub-regions based on the work of Khalaj (2010), and heatwave periods were ascertained. Using the method described by Hoshiko correlations between mortality and temperature were calculated.

Results:

Results showed an increase in mortality during known heatwave periods. Western areas of Sydney where temperatures are hottest were more likely to experience an increase in mortality than areas where high temperatures were offset by coastal breezes.

Conclusions:

This study reflects similar findings to other studies investigating the effects of heatwaves on mortality in the elderly, but presents results in an Australian context.

MODELING MORTALITY WITH A BAYESIAN VECTOR AUTOREGRESSION

NJENGA Carolyn¹ SHERRIS Michael¹

¹University of New South Wales

Mortality risk models have been developed to capture trends and common factors driving mortality improvement. Multiple factor models take many forms and are often developed and fitted to older ages. In order to capture trends from young ages it is necessary to take into account the richer age structure of mortality improvement from young ages to middle and then into older ages. The Heligman and Pollard (1980) model is a parametric model which captures the main features of period mortality tables and has parameters that are interpreted according to age range and effect on rates. Although time series techniques have been applied to model parameters in various parametric mortality models, there has been limited analysis of parameter risk using Bayesian techniques. This paper uses a Bayesian Vector Autoregressive (BVAR) model for the parameters of the Heligman-Pollard model and fits the model to Australian data. As VAR models allow for dependence between the parameters of the Heligman-Pollard model they are flexible and better reflect trends in the data, giving better forecasts of the parameters. Forecasts can readily incorporate parameter uncertainty using the models. Bayesian Vector Autoregressive (BVAR) models are shown to significantly improve the forecast accuracy of VAR models for mortality rates based on Australian data. The Bayesian model allows for parameter uncertainty, shown to be a significant component of total risk.

Session One Abstracts

Stream 2:

Determinants of Wellbeing

THE LIVED EXPERIENCE OF THE PERSON AT HOME FOLLOWING ADMISSION OF THEIR SPOUSE TO AN AGED CARE FACILITY. ROUND 1

HEE Lisa¹

¹Queensland University of Technology.

The aim of this presentation is to inform the audience of a study that identifies the lived experience of people whose spouse has been admitted into an aged care facility for permanent care. In Australia the Australian Bureau of Statistics (2008) reveal that in 2003 there were 2.5 million carers of whom, 18 % (452,300) were aged 65 years and over. It has also been reported that 83% of these older carers are caring for a spouse. Estimates show that carers save the Australian economy \$16 billion annually. Their role in the community is vital. Carers play a substantial role in terms of physical, social and economic needs for the current and future ageing population of Australia. Despite their major contribution to society, little is known about the challenges and changes to their existence once their spouse is placed into an aged care facility. This study aims to identify what happens to the carer and their life in general after their spouse is admitted for permanent care. This study will aim to inform carers, care staff and other key stakeholders of new knowledge gained from the perspective of the carer, to better inform practices relevant to the carer. A hermeneutic phenomenological approach will be utilised, underpinned by the work of phenomenologist Martin Heidegger (1889-1976). This involves in depth interviews, transcription and analysis to identify themes or “essences” of the participants’ lived experience. It is a longitudinal approach gaining insight of the participants’ transition experience as soon as possible after the admission of their spouse from home into an aged care facility, and repeated during the first 12 months post admission This presentation will report progress of the study including results from the first round of interviews held with the carers, along with some insight from the second round.

CHOIR SINGING AS A PSYCHOTHERAPEUTIC INTERVENTION FOR REDUCING DEPRESSION IN MID TO OLDER AGE: A CONTROLLED TRIAL WITH QEEG TESTING.

ROBERTSON-GILLAM Kirstin¹

¹University of Western Sydney.

Mid to later life depression is known to be a significant precursor to functional and cognitive limitations in old age. Not being able to manage the health challenges and losses of later adulthood can lead to depressive symptoms which socially isolate older adults and can be comorbid with chronic health conditions.

The current study examined whether symptoms of depression, post traumatic stress and anxiety in mid to later life could be ameliorated through a choir program.

The study involved community dwelling volunteers (N=32) ranging from 48-73 years in the Blue Mountains, west of Sydney. Some were allocated to the choir group (N=21) and the remainder to the control group (N=11). Both groups were assessed for depression, post traumatic stress, well-being and quality of life before and after the choral singing program.

A pilot trial was carried out with subjects selected at random from the choir (N=9), using quantitative electroencephalograms (QEEG) monitoring changes in brain wave patterns before and after the singing intervention.

A mixed methods approach compared pre/post results between the choral group and control groups. The eight week choral program included meditation, singing exercises and learning new songs. The control group lived their lives as normal between the pre and post interviews and assessments.

Preliminary Beck Inventory post scores demonstrated a significant decrease in depression. An increase in wellbeing was also found using The Spirituality Index of Wellbeing following the eight week choral singing program. The preliminary QEEG data indicated that choral work could enhance a range of right hemispheric functions associated with social relatedness and mood regulation. These results demonstrate the efficacy of choral singing as a psychotherapeutic intervention for mitigating depressive symptoms and increasing wellbeing later in life. Based on these results, choir therapy could reduce the likelihood of developing functional limitations and dementia in old age.

PROFILING THE SILVER SURFERS: WHICH OLDER AUSTRALIANS ARE USING THE INTERNET?

BURNS Pippa¹ JONES Sandra C¹ IVERSON Don¹

¹Centre for Health Initiatives, University of Wollongong

As Australia's population ages more people will develop chronic diseases, increasing both the burden on the health care system and the need for ongoing self-management. The internet has great potential to provide self-management education; helping participants increase their quality of life. Internet interventions are relatively cheap, can easily be updated and can be revisited at a time and location suitable to the participant. However, little is known about the extent and nature of older Australians' use of the internet. This paper aims to describe the associations between internet use and health and other demographic variables amongst older Australians. A survey was mailed out to 9,000 adults, aged 55 years and over, across three regions NSW, randomly selected from the electoral roll (response rate = 46.8%). Just over half of the respondents reported using a computer to access the internet. The majority of internet users had been using the internet for more than five years, had high levels of comfort with use, and used the internet to obtain health information. The presence of some chronic diseases was associated with not using the internet, although having asthma, anxiety or sleep apnoea did not appear to reduce internet use. Internet users were more likely to be younger ($p=.000$); well educated ($p=.000$); have a higher household income ($p=.000$); and report good health ($p=.000$). However, there was no significant difference in internet use between male and female respondents as well as between those born in Australia and overseas. Internet interventions have the potential to reach older adults, although there is still a distinct digital divide between internet users and non-users, suggesting that such interventions should not be the sole method of self-management education for this age-group. However, it is likely that this divide will narrow as the baby boomers age.

Session One Abstracts

Stream 3:

Residential Care

MENU PLANNING STANDARDS IN RESIDENTIAL AGE CARE IN ACTION - INTERNATIONAL COMPARISON

ABBEY Karen¹ WRIGHT Olivia² CAPRA Sandra²

¹Nambucca Valley Care Limited Nambucca Heads NSW 2448

²University of Queensland Department Nutrition and Dietetics St Lucia Campus

Menu planning is essential for the appropriate nourishment of residents in aged care facilities. In Australia, this is regulated by Accreditation Standards underpinned by the Aged Care Act, 1997. In order to appraise the Australian Standards for achieving appropriate nutritional care, they were compared with those from Canadian Standards Nutrition Care and Hydration Programs. Data from the National Residential Age Care Survey for menu planning has provided an insight into how menus are planned and foodservices operates. This formed the bases for comparison and also how aged care facilities in Australia interprets the expected outcome from the standards.

The Australian standards 2.10 Nutrition & hydration 4.8 Catering specify the need for (i) a variety of food and fluid textures; (ii) expert dietary advice when necessary and (iii) maintenance and regular review of food quality and variety. The Canadian standards specify more clearly: (i) menu cycle length; (ii) therapeutic diets; (iii) the need for choice of meals and beverages; (iv) the need for approval of menu by a Registered Dietitian. Moreover, Dietitians are mandatory members of staff in residential aged care in Canada, which is not the case in Australia. Challenges resulting from the current Australian approach include: (i) inconsistent approaches to menu planning throughout the country; (ii) potential limitations to resident quality of life in relation to choice; (iii) potential for involvement of non-credentialed Nutritionists/Dietitians in the design of menus and food services. Current rates of malnutrition in residential aged care in Australia as high as 50% suggest we can improve the delivery of nourishment to this population. Since the menu is the primary control of the foodservice, this is an important area for intervention. International perspectives are valuable in informing future work in this area.

Funding source DAA Fay McDonald Scholarship 2009-2010

THE INFLUENCE OF PROTECTION, PALLIATION AND COSTS ON MOBILITY AND INDEPENDENCE OF RESIDENTS IN NURSING HOMES: A DISCOURSE ANALYSIS.

TAYLOR Janice¹ SIMS Jane¹ HAINES Terrence P¹

¹Monash University

Background: With the ageing of the population, increasing numbers of older people will transition to live in aged care facilities. Mobility and independence are important to residents. Discourse such as policies and standards also highlight the need to optimise resident mobility independence. This is expected to occur in a way that is safe for residents and staff whilst meeting the residents' needs. The influence of discourse on health care can be poorly understood, being at times hidden or taken for granted. The aim of this study was to uncover discourse relevant to resident mobility optimisation to enable the origins and reasoning behind existing and intersecting policy and practice to be critically appraised.

Design: Narrative literature review and discourse analysis were employed for this study.

Data sources: Databases (CINAHL and Ovid Medline) and websites of professional and governmental bodies were accessed.

Method: A literature search focused on retrieval of texts related to resident mobility optimization that were rich in material for discourse analysis. Database searches for texts covered the period from 1994 to 2011. Iterative thematic analysis focussed on the socio-cultural context and influence of selected texts.

Findings: Four discourses emerged that influence goals to optimise resident mobility; safe manual handling; falls prevention; palliative care; and costs and funding constraints to individualised care. These discourses may influence care in the direction of more routinised dependency support approaches rather than support for resident autonomy and independence. The theme of collaboration and communication was an important thread connecting the discourses.

Conclusion: Discourse can negatively impact on the goal to optimise the mobility of residents in nursing homes. Inter-professional approaches where staff work collaboratively and communicate well may counter such influences and ensure individualised care that more effectively focuses on resident mobility independence.

AGED CARE FACILITIES IN AUSTRALIA: DIETITIANS SUPPORTING FOODSERVICES - A REQUIRED SERVICE

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Foodservices in aged care have an important role of providing nourishment to residents at the end stage of their lives. The Aged Care Standards are designed to provide a quality framework in which aged care facilities operate. The Catering Standard and the Results and Process guide use “loose” terms to describe “specialists” who are to provide “expert dietary advice”. The role of credentialed dietitians is not clear and is open to interpretation. Foodservices from 2648 aged care facilities across Australia were invited to take part in the national menu survey in January 2010 (response rate n=274 [10.3%]). As part of the survey, information was sourced regarding the nature of Accredited Practising Dietitian (APD) involvement with the facility, i.e. (i) involvement/nil involvement; (ii) how often; (iii) APD/not APD. The results indicated that n=240 (87.6%) facilities employed a Dietitian to support foodservices and n= 33 (12.4%) of facilities had no dietetic support. Of those that did employ a Dietitian n=10 (4.1%) were full time, n= 26 (10.8%) part time and n = 195 (80.9%) indicated that they used a Dietitian when required. Of the facilities that said “as required”, this varied between monthly n= 35 (20.3%) to yearly n= 116 (67.4%). When asked to identify Accredited Practising Status, n=149 (54.8%) indicated credentials were checked and n=122 (44.4%) stated nothing. The results indicate that the majority of aged care facilities engaged a Dietitian to review and assess the menu n=224 (81.5%) with minor mention of clinical and educational support. Dietitians could be doing more to support foodservices, but until the Aged Care Standards provide clear guidelines and recognise the role of Accredited Practising Dietitians, there is a risk of infrequent engagement and non-credentialed persons providing guidance in this setting.

Session One Abstracts

Stream 4:

Innovative Approaches to Disease Management

THE IMPACT OF SELF-EFFICACY ON ASTHMA MANAGEMENT AMONGST OLDER AUSTRALIAN ADULTS

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Australian asthma rates are high by international standards with approximately 10% of people having an asthma diagnosis. While asthma is often thought of as a childhood disease, it causes greatest mortality and morbidity amongst older adults, with three-quarter of asthma deaths occurring in people aged over sixty. In Australia, the Asthma Cycle of Care is the initiative used by GPs to manage asthma. It includes regular visits to the GP, provision of an asthma action plan and asthma education, yet the effectiveness of current management approaches, amongst older adults, remains largely unknown. This paper looks at the relationships between self-efficacy, health status, asthma management practices, emergency health care use and quality of life. A 20 page survey exploring the health beliefs, behaviours and attitudes of older Australians, was mailed out to 9,000 adults (response rate = 46.8%), aged 55 years and over, across three regions of NSW. Participants were recruited through a random sample obtained from the Australian Electoral Roll Office. Initial analysis shows that people with high asthma self-efficacy were more likely to rate their health highly, have better quality of life scores and have received asthma education. They were less likely to report that asthma had interfered with their day to day activities or that they'd had an emergency health care utilisation for asthma. Regular GP reviews, owning an asthma action plan and monitoring asthma control did not appear to impact self-efficacy. The results suggest that asthma education is the most important element in the Asthma Cycle of Care for increasing older adults' confidence in managing their disease. Further, it is postulated that older adults who receive asthma education will benefit from increased self-efficacy, better health status, better quality of life and less emergency health care visits for asthma.

COMBINING THE HEALTH BELIEF MODEL AND SOCIAL MARKETING TO DEVELOP A COMMUNITY-LEVEL CAMPAIGN ABOUT ASTHMA FOR OLDER ADULTS

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This paper provides a rationale for combining health behaviour theory with a social marketing framework in order to develop a community-level asthma campaign for adults aged 55 years and older. The prevalence of asthma in older adults in Australia is approximately 10%, higher than in many other countries, and asthma mortality increases with age. In addition, older adults' perceptions of asthma causes and treatments are often inaccurate. Many older adults believe that asthma is a childhood disease and that the effects of the condition are relatively minor and would not impact on daily life. In order to address these misperceptions, it is useful to utilise the constructs of the Health Belief Model in conjunction with a framework for the development and implementation of a health promotion effort. The social marketing framework is directly aligned with the most successful methods of promoting health to older adults; tailoring health messages (promotion) to individuals and the community that they are living in, actively involving the older adults themselves to understand their health beliefs and behaviours, empowering individuals by reducing barriers to action (price), enabling individuals to take control of their health (product) through increased knowledge, and ensuring ease of access (place) to health messages and promotional activities. The segment of the population aged 55 years and over not only has a demonstrated need for asthma awareness but also has been largely ignored by past asthma promotion activities. A campaign must be developed, implemented and evaluated to extend the efforts of previous health promotion efforts concerning asthma to specifically target older adults to address their low perceived susceptibility to, and severity of, the condition. This paper presents a conceptual framework for the application of the Health Belief Model and social marketing theory to influence the asthma perceptions of older adults.

EVALUATION OF THE EFFICACY OF A CHINESE HERBAL MEDICINE IN THE TREATMENT OF PATIENTS WITH OSTEOARTHRITIS OF THE KNEE

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Osteoarthritis (OA) is the third most common cause of morbidity in Australia especially amongst the elderly population. Many OA sufferers used complementary and alternative medicine (CAM). The evidence relating to the efficacy of various forms of CAM is variable. Chinese herbal medicine (CHM) has been increasingly used for the treatment of OA, however, the majority of CHM efficacy studies have been methodologically flawed. This was the first study of a CHM formula designed according to the CONSORT (Consolidated Standards of Reporting Trials) guidelines and conducted in Australian patients with knee OA. A double blind, randomised, placebo controlled clinical trial was conducted in eligible Australian OA patients. Participants were randomised to receive either CHM or placebo over 12 weeks, with a 1 month follow-up. The Western Ontario and McMaster Universities Arthritis (WOMAC) Index was the primary outcome variable. Other outcome measurements included SF-36, Patient Global Assessment and Physician Global Assessment. Safety monitoring was conducted throughout the study. 47 patients were randomised into two groups. Within-group analyses indicated significant improvements ($p < 0.05$) in terms of change of the WOMAC indices of pain, physical activity and total score, but there was no significant difference ($p > 0.05$) between the groups. The effectiveness of the CHM formula was maintained in the follow-up period but not in the placebo group. The stiffness index decreased significantly in the CHM group only ($p < 0.05$). Safety data indicated the CHM was safe and well tolerated. Therefore, there is some limited indication of a therapeutic effect for the CHM. Larger scale studies over a longer time-period are required.

DOES PERCEIVED STRESS CONTRIBUTE TO THE BURDEN ASSOCIATED WITH ARTHRITIS IN WOMEN AT MIDLIFE?

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Background: Arthritis represents a growing public health challenge. It contributes significantly to global healthcare expenditure and remains a major cause of disability and chronic pain, and substantially impacts on health-related quality of life (HRQoL). Women have been found to have more arthritis-associated disability, primarily after age 45. Psychosocial factors, particularly stress, have been found to influence health outcomes for women. However, there is a paucity of research focused on the psychosocial burden of disease for women with arthritis.

Purpose: To examine longitudinally the relationship between perceived stress, modifiable psychosocial factors, and HRQoL in women with arthritis.

Method: This study focused on 12,205 women from the cohort born 1946-1951 who completed the Australian Longitudinal Study on Women's Health population-based mailed surveys in 2001, 2004, and 2007. Longitudinal associations (adjusted for behavioural, demographic and health-related confounders) were examined using a Generalised Estimating Equations model for the physical and social functioning, bodily pain, and mental health subscales of the Medical Outcomes Study Short Form-36.

Results: Analyses revealed that with the exception of mental health, arthritis was a significant independent predictor of HRQoL over time, with the largest effect on physical functioning and bodily pain. Perceived stress was found to be the most consistent psychosocial predictor of HRQoL longitudinally, contributing to significant reductions in physical and social functioning, bodily pain, and mental health. Interaction models highlighted that for women with arthritis, perceived stress had the greatest impact on physical function and bodily pain. For instance, those that experienced moderate/high levels of stress had clinically significant increases in bodily pain compared to women with arthritis and no stress.

Conclusion: The psychosocial burden for women with arthritis is high, with perceived stress a substantial contributor. Targeted interventions aimed at alleviating stress may assist in the reduction of arthritis-associated disability and facilitate women in ageing well.

Session One Abstracts

Stream 5:

Calculating Care

A PILOT EVALUATION STUDY OF A PROTOTYPE PAIN ALGORITHM FOR THE ASSESSMENT AND MANAGEMENT OF PAIN IN THE OLDER PERSON IN THE ACUTE CARE SETTING

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This paper discusses the strategies that registered nurses (RN's) use to assess and manage pain in older people (those aged 65+) within acute care. Older people are an increasing demographic group and are the majority of patients who are admitted into acute care. There is a paucity of research and literature located within acute care about assessment and management of pain in older people. Nurses currently have no clinical practice guideline for use in acute care, in which to base their strategies on. This paper reports the findings of a pilot study which used ethnographic techniques to map the clinical practice of 3 RN's in diverse acute care wards, against a prototype algorithm. A critical literature review of previous ethnographic studies conducted on adults within acute care will also be used to illustrate the findings of the pilot study. It was found that the strategies that RN's use, is often at variance with the prototype pain algorithm. Namely the strategies used to assess pain are typically ad hoc and rarely involved the use of an assessment tool. The management of pain was inappropriately based on provision of comfort measures by RN's, and/or a reliance on oral medication. With no determination of the efficacy of the strategies used. Recommendations are made toward the provision of an algorithm that is reflective of clinical practice within acute care. Further research is outlined as part of a PhD study. By provision of standardisation, continuity of care will be facilitated. The benefits of using of an algorithmic approach is easy access to best practice for clinical decision making by transitional nurses into acute care settings, a teaching aid for student nurses, and use as a tool for auditing, within diverse acute care wards.

PREVALENCE ESTIMATES FOR ARTHRITIS FROM SELF-REPORTED DATA: AN AGREEMENT STUDY USING THE AUSTRALIAN LONGITUDINAL STUDY ON WOMEN'S HEALTH SURVEY DATA AND ADMINISTRATIVE DATA

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As population ageing accelerates, it is becoming more important to access population-level data to estimate prevalence of chronic diseases, examine past trends and predicts emerging ones. However there is no single source of data; case definition differences affect estimation results and in turn the health care policy decisions based on these results. This study examined the agreement between case definitions (based on self-reported arthritis and administrative data for arthritis and arthritis symptoms) for NSW participants in the older cohorts of the Australian Longitudinal Study on Women's Health (ALSWH). It considers two important questions:

- 1) How well does a self-reported case of arthritis in ALSWH compare to that generated from administrative data?
- 2) What combination of self-reported symptoms etc. has best agreement with the ascertainment of arthritis in the administrative data set?

Data for women from NSW in the mid-aged and older ALSWH cohorts were included. Agreement between ALSWH survey data and the NSW Admitted Patient Data Collection was appraised. Results show that 41.0% of the mid-aged cohort reported arthritis at Surveys 3, 4, and/or 5; 64.7% of the older cohort reported arthritis at Survey 2, 3, and/or 4; and/or osteoarthritis at Survey 5. Agreement between survey and administrative data was high; positive predictive value was 0.6 or higher and negative predictive value was greater than 0.9. Logistic regression analyses revealed that agreement between survey and administrative data is influenced by region of residence and private health insurance. This study adds to the body of literature on the validity of self-reported survey data. It is concluded that survey data can validly identify the impact of a chronic disease such as arthritis. The study also found that sociodemographic characteristics can influence agreement between surveys.

IDENTIFICATION OF FACTORS WHICH CONTRIBUTE TO EXTENDED LENGTH OF STAY IN THE EMERGENCY DEPARTMENT FOR PATIENTS FROM RESIDENTIAL AGED CARE VERSUS COMMUNITY SETTINGS

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The incidence of transfer from Residential Aged Care to acute care is greater than 30 transfers per 1000 beds per year. An audit of all emergency presentation and admission data for Residential Aged Care patients in 2009 across three Australian metropolitan hospitals found patients from Residential Aged Care were more likely to present to Emergency Departments (ED) in a confused state, have higher levels of clinical urgency on ED arrival, have a longer stay in ED and have a higher rate of hospital admission (67%) than other patients. Overall, 84% of Residential Aged Care patients remained in ED for longer than four hours and 37% remained longer than eight hours. Those discharged from ED back to residential care had significantly shorter lengths of stay in ED [mean (SD) = 6.6 (3.9)] compared to those admitted to hospital [mean (SD) = 8.5 (4.6)] ($p < 0.001$).

Two services are provided with the aim of preventing inappropriate transfers to ED from Residential Aged Care and streamlining the patient's admission or discharge from ED. The proposed study aims to identify the factors which contribute to longer length of stay in ED following transfer from Residential Aged Care; and compare patient outcomes following these transfers, during provision of the Residential Care In-Reach Program and ED Care-Co-ordinators (in-hours) to when these services are not available (out-of-hours). This study comprises a retrospective case control design, where cases are patients transferred to ED from Residential Aged Care and controls are patients from the community matched by age, gender, ED discharge diagnosis and triage category. We will examine factors associated with extended length of stay in ED, and whether these factors can be used to identify strategies to either prevent the need for transfer or reduce length of stay in ED at acute care hospitals.

Session Two Abstracts

Stream 1:

Wealth and Health

SUSTAINABLE FULL RETIREMENT AGE POLICIES IN AN AGING SOCIETY

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In this paper we investigate the effect of policies to make the retirement age dependent on the evolution of the survival probabilities on the distribution of the future full retirement age and longevity risk in the discounted future payments of both individuals and a fund as whole. In addition to the constant retirement age, we use the following five policies to set the retirement age:

- a constant number of years in retirement;
- a constant fraction of years in retirement relative to working years;
- a constant cost of retirement in a PAYG scheme;
- a constant cost of retirement in a individual savings scheme; and
- a constant cost of retirement in a funded scheme.

We compare the policies in a setting where we forecast future mortality rates to set the full retirement age and a setting where we use the latest observed mortality data. We find that the latter one leads to less uncertainty in the full retirement age and longevity risk in pension liabilities, but, on average, to a higher increase in the full retirement age over time.

WHO IS VOLUNTARILY SAVING FOR RETIREMENT? EVIDENCE FROM AUSTRALIAN SUPERANNUATION

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Adequacy of retirement incomes is a global issue as ageing populations increase the fiscal burden of providing for the elderly in both the developed and developing world. Australians are better protected than most, largely due to the superannuation guarantee - a 9% compulsory employer contribution to an individual account in a superannuation fund. While this is proposed to increase to 12% over the next decade, academics and policymakers still argue this will not generate sufficient savings to fund a comfortable retirement. The focus of this paper is the incentive framework for additional voluntary contributions. I examine the characteristics of participants who make voluntary superannuation contributions and study the determinants of decisions on contribution rates through the varying tax concessions provided for salary sacrifice contributions and personal contributions more generally. Analysis using bivariate probit and OLS regressions confirms US studies that age has a significant influence on participation and contribution levels. I find that people do respond to tax incentives and retirement policy design, and that job characteristics predict voluntary contribution participation but not levels of contribution. However, choices are bounded by financial constraints. Furthermore, people make decisions without a long term planning in mind, suggesting a lack of knowledge of the design and effectiveness of the superannuation tax concessions. Future government policy should focus on improving consumer understanding and awareness through education initiatives and better information provision.

Key words: Superannuation, voluntary contributions, salary sacrifice, post-tax personal contributions

THE ROLE OF INCOME AND WEALTH IN THE LIVING STANDARDS AND WELL-BEING OF OLDER AUSTRALIANS

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The ageing of the Australian population is predicted to place enormous pressure on the nature and delivery of health, aged care, age-related pensions, and the superannuation system, and also affect the living standards and well-being of older Australians. Within the economics literature, the standard of living is predominantly assessed using income as a defining indicator and a benchmark to determine poverty status. More recent approaches have also incorporated consumption measures and financial hardship indicators. This paper discusses and illustrates some of the key conceptual and methodological limitations of the economic approach that are particularly pertinent to a study of older people by drawing on income and wealth data from Wave 6 of The Household, Income and Labour Dynamics in Australia (HILDA) Survey and non-cash data from the 2003-04 Australian Bureau of Statistics Household Expenditure Survey (HES). In this paper I argue that a comprehensive measure of the standard of living of older people needs to include both economic and non-economic dimensions. I draw on conceptual frameworks from sociological traditions that can potentially enrich our understanding of the multi-dimensional nature of the living standards of older people.

DEMOGRAPHIC CHANGE AND PENSION POLICY ANALYSIS: AN OVERLAPPING GENERATIONS APPROACH

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Australia is at the verge of major demographic change. It has an ageing population, which is mainly attributed to a falling fertility rate and longer life expectancy. There is no doubt this demographic trend will have a significant impact on the government budget and the economy as a whole. This paper studies the impact of ageing in the long run on micro and macroeconomic developments in Australia by using a dynamic general equilibrium model with overlapping generations.

The findings suggest that ageing along with population structure change will have a significant impact on the government budget in terms of pension benefits and health care costs.

The paper aims at modelling hypothetical pension reform options to ease the effects of demographic changes in Australia. Specifically, the impacts of increasing retirement age, flattening pension benefits and rise in the benefits are analysed.

The baseline simulation results reveal that living standards measured in per capita terms are projected to decline between 2030 and 2050 compared to 2007 level due to ageing population, which is expected to fully materialize during that period. The policy option of increasing pension eligibility age by two years will have positive effect on the economy and welfare of generations born after 1940 with the exception of old age generations in a low income group. The simulation of flattening pension benefits in combination with increasing the retirement age raises the welfare of middle and high income group generations, whereas all generations in the low income group marginally lose. The final policy option of increasing old-age benefits in addition to increasing the retirement age shows that dynamic path of the economy will be the same as in the baseline scenario with the welfare increase accruing to all generations.

Session Two Abstracts

Stream 2:

Getting Around in Later Life

THE ROLE OF FAMILY MEMBERS IN SUSTAINING SAFE DRIVING AMONG OLDER AUSTRALIAN DRIVERS

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Older drivers represent the largest growing cohort of the Australian driving population. Previous studies of older drivers have consistently reported a marked increase in both prevalence and severity of crash risk among older drivers. Due to their increased fragility, older drivers are significantly more likely to sustain very serious injury or death as a result of a crash. Much of the existing older driver research has focused on older drivers' driving performance. There has, however, been limited evaluation of older adults driving habits, their capacity for driving self-monitoring, or the relationship between decisions about driving cessation and the drivers' family. Our preliminary data suggests that older drivers who exhibit poor cognitive performance lack insight into their own driving ability, and are likely to be resistant to taking part in driving safety programs. Since interventions that target drivers generally rely on self-selection, new approaches may be needed to ensure the safety of such persons. Emerging research suggests that the families of older drivers may play an important role in their driving decisions. This program of research aims to improve older driver safety through:

- 1) gaining a better understanding of the driving behaviours and patterns of older drivers using both self-reported and objective measures of driving behaviours;
- 2) identifying the role of family members in older drivers' self-evaluative beliefs and their decision to drive, and;
- 3) identifying and strategies for future programs to assist family members in their discussion with older drivers, to assist them to better plan for the transition to a non-driving status.

This work may lead to new interventions that utilise family members to enhance safety of older drivers without significant limiting personal mobility.

SUSTAINABILITY OF COMMUNITY-BASED FALLS PREVENTION PROGRAMS: A SYSTEMATIC REVIEW

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For older people living in the community, a fall can have severe consequences. Research has shown that a range of interventions are effective for preventing falls. Yet the translation of these interventions into practice remains a challenge and it is unclear how interventions and programs once implemented can be sustained over time. A greater understanding of the factors influencing program sustainability is needed to ensure that the health of older people can be optimised and health resources are not wasted. To determine the nature and extent of research that has been published on the sustainability of community-based falls prevention programs, we conducted a systematic review. We aimed to identify any theories, models or frameworks applicable to program sustainability, determine which factors affect program sustainability and if any interventions are effective for achieving program sustainability. To ensure a comprehensive and rigorous review process we developed broad inclusion criteria and searched a variety of data sources using multiple search terms. Eligibility assessments were conducted independently by two reviewers. Data extraction and assessment of study quality were conducted by one reviewer and checked for accuracy by a second. Fifteen disparate and methodologically diverse publications were included in the review. We found no theories to explain how program sustainability may be achieved. Some factors may influence program sustainability, but it was unclear which factors or combination of factors exerted the most influence. Multi-strategic interventions may enhance the likelihood of program sustainability, but it was not clear which types of interventions were the most effective. In light of these findings, recommendations are provided to assist organisations in sustaining their programs. Given some of the challenges in conducting this review, recommendations for future research on this topic are made.

ENABLING PARTICIPATION FOR OLDER AUSTRALIAN ADULTS: A GIS ANALYSIS OF ACCESSIBILITY IN URBANISED ENVIRONMENTS

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It is widely accepted that Australia will face significant demographic shifts over the coming decades due to a rapidly ageing population. As the promotion of 'ageing in place' intensifies, urgent attention is needed to address the growing risk of social isolation among older adults. One key step is understanding the facilitators and barriers to participation and community engagement among this cohort. Thus, this presentation explores community liveability and active ageing, focussing on a case study of older residents living in urbanized environments. The daily life activities of 36 participants (55 years and older) living in Brisbane and Toowoomba were explored using GPS tracking (747 A+ logger, one week per person), daily diary entries and a two hour qualitative interview. Data from the diaries and GPS trackers was converted into interactive maps (Google Earth), which were used to facilitate semi-structured in-depth interviews. The participants described the importance of choice and opportunity in the services and amenities they access. The vast majority relied heavily on private automobiles (whether self-driven or as a passenger) to access their broader community, with two key facilitators to this car dependency identified; firstly, a limited choice of amenities close to home and secondly, barriers within the built environment creating difficulty in utilising other modes of transport. Consequently, participants were concerned about how they would remain active and engaged in their communities if they could no longer drive. A liveable community for older Australians must provide access to a variety of services and amenities - that meet everyday living, health and social needs - either within their own home, within adequate walking distance of their home or via easily accessible public transport. Encouraging active participation and engagement by improving accessibility will help to prevent social isolation among older Australian adults and create positive experiences of 'ageing in place'.

OLDER PEOPLES PERSPECTIVES ON EXERCISE AFTER A FALL-RELATED LOWER LIMB FRACTURE: A SYSTEMATIC REVIEW

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A systematic review of the qualitative literature investigated older peoples' thoughts and feelings on exercise and exercise programs after a fall-related lower limb fracture. Both hospital and community settings were included in this review. A comprehensive literature search of eight databases was undertaken. Search terms included older people, lower limb fracture, exercise, and qualitative research, including truncations and synonyms. This systematic review identified major gaps in the current literature concerning how older people who have fallen and fractured their lower limb feel about exercise and exercise maintenance post fracture. This finding highlights the need for continued research in this field. Further research could focus on ascertaining the personal reasons pertaining to adherence and compliance of exercise and the maintenance of exercise long term after a fall-related lower limb fracture. Additional work needs to explore the motivational factors behind performing or not performing exercise, and the perceived relevance of exercise in this population. The outcome of this review will inform a planned qualitative study with this high risk population and has implications to current practice standards including exercise compliance, adherence, and long-term continuation of exercise. Furthermore, this research could inevitably modify the way exercises are prescribed for certain sub-populations, for example gender and a more precise age group, thus resulting in the translation of exercise prescription.

Session Two Abstracts

Stream 3:

Ageing in Context

WELLBEING OF OLDER INDONESIANS AND RELATED SOCIO-CULTURAL FACTORS

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In the late 20th century, Indonesia started to experience ageing population. Life expectancy increased from 49 years in 1975 to 71 years in 2007. My research questions are:

- Are there gender and ethnic differences in the physical wellbeing of older Indonesians? If so, why?
- How do socio-cultural factors influence the physical wellbeing of the older persons?

These questions arise because since the 1970s, there has been firm consensus in the social and demographic literature that there are systemic inequalities between men and women, such as in education, employment, public programs for health, income security and national legal systems. However, in the developed world, women's improved education and increasing participation in employment as well as the provision of benefits by welfare states means that many aspects of women's and men's life patterns are becoming more comparable.

Indonesia has limited welfare benefits. Older Indonesians' childhood and young adult years during colonial occupations and wars made educational opportunities minimal. However, within the family, men were prioritized to have education. Older persons work based in agriculture did not provide adequate income, but custom allow older persons, mainly men, to own land and property, and authority through accumulated experience. My study employed an ethnographic approach, in 2009/10, questioning 651 people aged 60 plus, from two ethnicities, Lampungese (patrilineal kinship system) and Javan-migrant (bilateral kinship), in Lampung, Sumatra.

The result: there are gender and ethnic differences, men are likely to have better wellbeing than women, because men have higher education and relatively better lifestyle. Another important factor is men's cultural role as head of the household. Among women, Javan-migrants are likely to have better wellbeing than Lampungese. The bilateral kinship system, in which women and men have relatively equal status, appears to make a positive contribution to the wellbeing of Javan-migrant women.

FAMILY MEMBERS' CONSTRUCTS OF COLLABORATION AND ADVOCACY IN RURAL RESIDENTIAL AGED CARE FACILITIES

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The inquiry, 'Caring for Older Australians' is evidence of the Government's concern for providing adequate health care to a cohort that is both increasing in age and dependency. A population with a high percentage diagnosed with chronic illness at a time when nursing shortages, inadequate funding and limited resources are available. In rural areas the situation is further complicated by distance and the provision of adequate health services including Residential Aged Care Facilities (RACFs). Many families and significant others who visit residents in RACFs, regularly provide assistance supporting staff in delivering care, especially in high care facilities to ensure that resident's basic needs are met.

This qualitative study aims to explore the nature of the collaborative partnership and communicative process between families, significant others (close friends) and care staff within rural RACFs. Ethical approval will be sought from the Department of Rural Health, University of Tasmania. This study is to recruit participants through advertising in the local newspaper for persons who visit residents of a rural RACF on a regular basis (twice per month). The views of this cohort are to establish and describe the collaborative staff-family relationship; the practices and strategies which contribute to advocacy and respecting family (others) decisions and how in high care settings this can be promoted. The methodology is through a naturalistic inquiry adopting a semi-structured interview process. Data collection is proposed for 2012/13 with the data being transcribed verbatim and analysed using NVivo 9.1 computer software.

Similar studies conducted in low care RACFs in metropolitan settings have demonstrated the need for improvement in staff-family communications. The significance of this study is to explore the voices of residents through collaborative engagement and advocacy to ensure those who no longer can speak for themselves are heard.

“HE CHOSE RM WILLIAMS BOOTS INSTEAD OF GUMBOOTS”: NARRATIVES OF THE AGEING ‘GOOD’ FARMER SELF

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The role of the ‘good’ farmer is influenced by prevailing cultural scripts on farming and rurality, inclusive of symbolic images of farmers that are the ethic of hard working, stoic and resilient, tough, independent, proud and strong. The notion of good farming practice is one that encompasses looking after the land whilst increasing land production, and the continuity of the family farm. Rural Australia however is undergoing rapid change, part of which presents a rapidly ageing farmer population, with more farmers over sixty than under thirty-five, and the out-migration of young farmers. For first wave ageing baby boom farmers this is causing problems. Yet the question remains, how do these individuals manage the pressures of trying to be a ‘good’ productive farmer who is ageing successfully while trying to hold onto a self that is made meaningful? Disjuncture between the various discourses can be reconciled using Bourdieu’s concepts of habitus, field and practice, and Goffman’s ‘impression management’ as a way of interpreting farmers narratives in order to understand how these multiple discourses can be reconciled by the farmer self. This presentation reports on the early analysis of three farmers’ narratives into how farmers construct and manage their ageing male identity, yet holding on to the values of being a ‘good’ farmer amid the tensions of contemporary rural life.

SELF-PERCEPTIONS OF AGEING FROM A CROSS-CULTURAL PERSPECTIVE: DO COLLECTIVIST CULTURES PROVIDE A BUFFERING EFFECT FOR THE IMPACT OF NEGATIVE STEREOTYPES ABOUT AGE?

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Previous research has shown that older adults who are under conditions of age stereotype threat tend to underperform on memory tasks. Of interest are findings of cross-cultural differences in this effect, where older adults in a more collectivist culture have been found to perform better than older adults from an individualistic culture on a recall task. The present study aims to explore the mechanisms which contribute to cross-cultural discrepancies in perceptions of the ageing self, as well as which cognitive strategies are employed to combat stereotypes about age using a mixed-methods approach. First, we will compare young (20-35 years) versus older (60-85 years) adults' attitudes and self-perceptions of ageing in individualistic (Australian) and collectivist (Philippines) cultures using a focus group design. Second, we will adopt an experimental design to investigate cultural differences in implicit stereotypes surrounding age using the Implicit Association Test. Finally, we will conduct memory tests under stereotype conditions and use a survey based approach to examine explicit perceptions and stereotypes of ageing amongst the older and younger participants in their respective culture. We hypothesise that older participants in an individualistic culture will show more negative attitudes towards ageing than those in a collectivist culture. A further hypothesis is that, due to more social inclusion and a self-identity which has greater association with the group than just the self, older participants from a collectivist culture will perform better on the memory task under stereotype threat conditions. The knowledge that will be gained from this study will have significant implications for understanding which factors contribute to positive perceptions of the ageing self and which mechanisms contribute to the internalization of negative age stereotypes resulting in poorer performance of older adults.

Session Two Abstracts

Stream 4:

Dementia Interventions

TEMPORAL EVOLUTION OF COGNITIVE TRAINING-INDUCED STRUCTURAL AND FUNCTIONAL BRAIN PLASTICITY

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Given the relentless progression of demographic ageing and the growing prevalence of dementia, developing effective and low cost non-pharmacological interventions that can reduce the risk of dementia and combat age-related cognitive impairment are an Australian and international priority. Despite growing evidence for the effectiveness of computerised Brain Training (BT) on cognitive wellbeing in the elderly, a systematic investigation of the therapeutic and neurobiological effects of BT across different intervention periods has not yet been accomplished. Specifically, we do not understand:

- (1) The minimum duration (i.e., dosage) of BT required to produce cognitive benefits,
- (2) The time course of how different neurobiological adaptations may evolve, and
- (3) The rate by which any positive effects may wane after the cessation of training.

In order to address these questions, we are currently conducting a randomised, active-controlled, double-blind and longitudinal clinical trial in a cohort of 100 cognitively-intact older adults (>65 years of age). BT and active control sessions (45 minutes per session) are conducted 3 times a week for 12 weeks. Outcomes are collected at five timepoints (baseline, after 3 and 12 weeks of training, as well as 3 and 12 weeks after the cessation of training). Outcomes include a battery of computerised cognitive tests (memory, attention, reasoning, language, executive function, processing speed, visio-spatial perception, verbal function and motor skills), as well as different neuroimaging modalities (structural MRI, functional MRI, MR spectroscopy and diffusion tensor imaging). Over 25% of the sample has been successfully recruited and commenced training. Interim post-training results, including cognitive and neurobiological adaptations from training, will be reported. Our results are likely to be of major significance, since data from this trial will show the gradual effect of BT on cognitive and brain plasticity, thereby enabling an evidence-based design of BT programs in the elderly.

ONCE WEEKLY SPACED RETRIEVAL TRAINING CAN LEAD TO LEARNING IN PEOPLE WITH DEMENTIA

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Spaced retrieval training has demonstrable efficacy in helping people with dementia learn and/or relearn information or strategies to assist daily living when delivered intensively. In this study 13 community dwellers with probable dementia undertook one hour of spaced retrieval training, once per week, for a maximum of 6 training sessions. Twelve of the 13 participants were able to recall trained information and demonstrated use of the trained strategy at one-week post-intervention assessment. An average of 14.77 trials (SD=7.85) over an average of 1.77 sessions (SD= .927) were required to reach a recall criterion after a 20 minute inter-trial interval. The number of trials required to achieve success was negatively associated with Mini Mental State Examination (M=19.39, SD=7.38). Relationships between other assessments and spaced retrieval training will be presented. At a 3 month follow up, 54% of participants successfully recalled and used the trained information or strategy. A further 15% who were unable to verbally recall trained information were reported by their family carer to be demonstrating use of trained information or strategy in their daily activities. Six months post-intervention 39% of participants could still recall and use trained information and 15% who could not recall information on questioning were still reportedly using trained information. Retention of trained information did not appear to be related to baseline cognitive status. Spaced retrieval appears to be a successful mechanism to assist people with dementia to learn and/or relearn personally relevant information or strategies to assist with day-to-day functioning when delivered weekly. Adopting a longitudinal approach provides therapeutic effectiveness evidence which shows that spaced retrieval memory training can have long-term practical benefit and therefore could potentially be an effective mechanism of memory rehabilitation. Effective memory rehabilitation may assist people with dementia to maintain some functional capacities for longer, potentially delaying admission to residential care.

IMPROVING GENERAL PRACTITIONER DEMENTIA SERVICES: THE EVIDENCE

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General practitioners (GPs) have an important role in identifying and managing people living with dementia, but many feel poorly prepared for the task due to lack of training and poor engagement with other dementia services. This paper presents the evidence that can improve GP dementia services, obtained from recent PhD research and a thematic synthesis of papers in PubMed and Cochrane databases. The research conducted at James Cook University included a randomised controlled trial (RCT) using the interventions of education and audit feedback to improve GP dementia case finding and a GP survey enquiring into GP dementia services, focusing on Regional Queensland. Survey results for these GPs produced a wish list that included a means of confirming the diagnosis, a tool to measure driving competency and access to a treatment that works. Education on dementia guidelines and audit feedback did not improve GP dementia case finding. Twenty four papers were reviewed with a range of methodologies producing no evidence of improved patient outcomes following didactic GP education, despite some improvement in GP knowledge. Improved diagnostic processes resulted from educational interventions targeting the primary care team. Improved dementia care depended on interactive interventions targeting a range of primary health care professionals including the GP. The barriers to improvement included patient reluctance to embark on diagnostic investigations and GP perception that little could be done to help these people. Patients and their carers were more likely to engage with dementia services on their GP's recommendation, rather than the recommendation of another health professional. Effective interventions with sustained outcomes benefited from multi-faceted learning strategies that shared knowledge and tasks amongst the many health professionals involved in dementia care. The GP retained a pivotal role in diagnosis and treatment, and as an advocate for patients with dementia and their carers.

GETTING IN EARLY: SUPPORT FOR PEOPLE WITH DEMENTIA AND THEIR CAREGIVERS

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There is a perceived need to diminish the known negative effects of reduced quality of life and increasing stress for those affected by dementia. Recent psychosocial research has explored ways to include people with dementia along with their caregivers in focused interventions aimed at enabling and empowering them to respond and manage issues they may experience during the disease trajectory and/or caregiving course. The Shared Care study involves the modification, delivery and evaluation of an early-intervention in-home program for people with mild cognitive impairment (MCI) or a diagnosis of early stage dementia and their caregivers. It uses a quasi-experimental design with a non-equivalent control group to examine the effectiveness of the intervention in assisting individuals aged over 65 years with MCI/early-stage dementia and their primary caregivers to manage the consequences of the syndrome. The presentation provides an overview of the intervention model, the stages of its development and implementation and the challenges and lessons learnt during these stages.

The in-home intervention is innovative as it engages the person with MCI/dementia and their caregiver during a key transition point of recognition/diagnosis whilst the person with dementia is still able to participate in discussions regarding their care. The intervention encourages the development of relationships that are based on mutual regard and respect. Basing the intervention in a community service organisation, providing it in the home and using community service staff to deliver the intervention bring a new aspect to the intervention model. The challenges and lessons to be discussed include recruitment, staff training & support and case studies highlighting participant and delivery staff outcomes.

Session Two Abstracts

Stream 5:

Cost of Care

AN ECONOMIC EVALUATION OF A POST-HOSPITAL EXERCISE PROGRAM FOR OLDER PEOPLE: PROTOCOL FOR A COST EFFECTIVENESS STUDY.

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Abstract

Background: Hospital stays have a marked impact on the health of older people. Research indicates that disability severity in older people can be reduced with a well-designed exercise program. A randomised controlled trial to investigate the effectiveness and cost-effectiveness of home exercises in people who have recently been in hospital is being conducted.

This economic evaluation will investigate the cost-effectiveness of a home-based exercise program compared with usual care, in the prevention of falls and minimising disability, in the first year after hospital admission for people who are sixty years and over. An assessment of the cost effectiveness will be undertaken from both the health and community service provider's perspectives.

Method: The economic evaluation (n=350) will compare the one-year costs and the effects of two strategies: (1) usual care including the provision of a falls-prevention booklet; and (2) an individualised home exercise programme comprising of ten home visits conducted by a physiotherapist and prescription of a home exercise programme. Costs will be measured using cost diaries, falls calendars and questionnaires. Hospital databases will be accessed to provide additional information on use of health services. Primary outcome measures are fall rates and disability measured with questionnaires and the Short Physical Performance Battery completed 12 months after randomisation. Utility-based quality of life will be measured at 12 months using the EuroQol 5D and SF-6D. Outcomes will be expressed in terms of the incremental cost of falls prevented, incremental cost of disability reduction and per quality adjusted life year. Sensitivity analyses will be conducted to assess the robustness of the results.

Discussion: This study will estimate the cost-effectiveness of this exercise intervention for this population group. The results will have direct implications for the implementation of the program by providing essential information on whether the program offers good value for our health care dollars.

COST MODELS FOR MHEALTH INTERVENTION IN AGED CARE DIABETES MANAGEMENT

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Governments across the globe are facing the challenges posed by ageing population. Diabetes is one of the leading causes of disease burden to the economies. A proactive management of diabetes for the elderly can offer benefits to all the stakeholders. Mobile Health (mHealth) can play a vital role to tackle the complexities associated with aged people who are living independently. mHealth is termed as the practice of medical and public health, supported by mobile phones and devices using mobile communication technology as the basis for connectivity. The current study focuses on the monitoring and collection of blood glucose readings of patients through the use of mobile phones. While there have been several pilot studies of mHealth interventions in diabetes management, they have not made inroads into operational reality. The significant factors appear to be lack of comprehensive cost models and business case for mHealth interventions. The paper reviews some of the related research work and argues for the development of cost models for mHealth interventions in aged care diabetes management. It also presents the work-in-progress of creation of cost models and envisages that such a development will help the operational adoption of mHealth benefiting all the stakeholders.

Keywords

Aged Care, Diabetes, mHealth, Cost Model, Mobile Phone.

WHAT DOES IT COST TO CARE? IMPLICATIONS FOR AN AGEING SOCIETY

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The intersection of demographic changes and transitions in policy have created what could be considered a 'care crisis', whereby the demand for informal care has increased, while at the same time the supply of care has decreased. These changes include: structural ageing, increased life expectancy, declining fertility rates, the transition from institutional to community care settings, women's increasing labour force participation and employment activation policies.

Research shows that providing informal support to people with disabilities, chronic conditions or who are older is associated with costs such as physical and emotional costs, time costs and direct costs. Direct costs include the additional expenditure associated with caring, for example on transport or medication. The direct costs of care have yet to be fully investigated in Australia.

This paper reports on a mixed method study of the direct costs of informal care for people with disabilities or who are frail, aged 60 years and over. The analysis explores the complex nature of the inter-dependent relationship between disability and care within households to identify different types of direct costs and who bears them. It examines the direct costs of care as conceived of two elements: the costs of disability that are subsidised or met by the carer (a subset of the costs of disability) plus the additional direct costs related to care such as payments for respite or counselling services.

The fiscal and policy dilemmas posed by an ageing population and the negative long-term financial and health impacts of the transition into caring for increasing numbers of paid workers highlights the salience of this issue if we are to sustain the current supply of carers and to meet future care needs. The paper will consider the implication of the findings for effective mechanisms to support carers to meet the direct costs of care.

Session Three Abstracts

Stream 1:

Retaining Older Workers

UNDERSTANDING OLDER WORKERS CAREERS IN HEALTH

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BACKGROUND

Nearly all countries are challenged by health worker shortages. While retention of older and suitably qualified workers in the health sector is obviously an important and viable strategy for helping to meet the labour force needs of the health industry, little research attention has been directed to understanding the factors influencing staff retention of older health care workers including their experiences, their careers and options. This study reports the career attitudes of health professionals with emphasis on those who might soon be expected to leave the workforce. With an ageing workforce exceeding that of other industries, health needs to work to retain its older workers.

The aim of this project is to understand the career choices that older workers in the health care fields are making. While there is significant research about retirement, there is a lack of literature and research in the area of older worker careers, in particular those who are continuing to work, rather than retire. This research seeks to not only understand the choices that older workers in health are making around retirement, but also to expand and modernise theory in the area of late life careers.

The results reported in this paper are based upon more than 90 semi-structured interviews in regional and metropolitan Queensland, NSW and Victoria health and this research was approved by Macquarie University, NSW Health and Victoria Health ethics committees. The phenomenological design targeted a number of allied health professionals. Preliminary results show that career success, the motivation to work and non-linear career intentions are different between older and younger workers. In order retain older workers; organisations need to be aware of these differences.

LET'S HANG ON TO WHAT WE'VE GOT: HUMAN RESOURCE MANAGEMENT STRATEGIES TO RETAIN OLDER WORKERS

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What does an ageing, predominantly female, immigrant workforce, employed on award wages doing 'dirty work' tell us about human resource management retention strategies for older workers? This presentation reports on qualitative research into the policies and practices utilised in age care facilities which have an important role in workers remaining there for many years. They include those working conditions that earlier research said baby boomer employees want to remain in the labour market. Work conditions such as flexible work options; phased retirement; recalls; a supportive work environment; modified work methods, practices and equipment; continuing education and most of all recognition, respect and appreciation.

The ageing of the population and the workforce in developing countries has seen policymakers encourage employers to retain their older workers to both reduce national economic liabilities and avoid labour and skills shortages. Until recently there was little evidence of response to those calls and that ingrained workplace aged discrimination was the norm. Some research establishes that baby boomers (before the global financial crisis) want to stay at worker longer than the silent generation before them, but they look to a variety of working conditions to make their work-life balance easier, particularly women. These conditions have not, in the main, been taken up by employers. This research may stimulate discussion on how these Human Resource Management practices can be adapted to other industries.

RETENTION OF OLDER VICTORIAN HEALTHCARE WORKERS: PRELIMINARY RESULTS AND FUTURE DIRECTIONS.

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The rural health workforce is ageing and will continue to age over the next two decades, suggesting it is imperative to identify factors that will prolong the working lives of older, experienced healthcare workers. Global financial instability in conjunction with significant Australian health workforce deficits makes these issues important for employees, employers and public health as a whole. This paper will discuss the results of a survey distributed at various public health sites in Victoria and will outline the push and pull factors related to the retention of older skilled professionals in the healthcare sector of rural and regional Victoria. The quantitative results comprise the first stage of an explanatory sequential mixed methods design, with the data collected from public sector nursing and allied health staff aged 55 years and over. This paper outlines the expectations around retirement and perceptions of effort and reward involved in the employment of the rural healthcare workforce. It will also consider the factors that may affect early retirement or working beyond traditional retirement age, which has implications for healthcare and workforce policy. The paper will also discuss the direction of the second qualitative phase of the research that will provide more insight into the issues affecting these employees. These findings are important in the context of a predicted shortfall of healthcare professionals in rural communities.

Session Three Abstracts

Stream 2:

Social Engagement

UNDERSTANDING LOW INFORMATION AND COMMUNICATIONS TECHNOLOGY (ICT) USE IN OLDER PEOPLE FROM CULTURALLY AND LINGUISTICALLY DIVERSE (CALD) BACKGROUNDS TO HARNESS ITS POTENTIAL TO SUPPORT AND KEEP THEM CONNECTED THROUGH OLDER AGE

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The large group of post WW11 non-English speaking migrants who came to Australia as young adults from Southern and Western Europe have now reached older age. They present particular challenges for supporting an ageing population ageing in place. It is often assumed that the extended family and culturally specific communities will meet all their support and social needs. Yet older migrants (and their families) are a diverse population with differing life experiences and responses to ageing. Information and Communications Technologies (ICTs) like the Internet and mobile phones have the potential to accommodate diversity and assist the ageing transition by maintaining connectivity and enhancing both familial and formal support. Yet older Australian's from a CALD background have the lowest Internet access rates within the lowest Internet using age cohort - people age 65 and over (ABS 2006) and it is even lower among those who have little spoken English. However we know anecdotally some older migrants use the Internet and mobile phones. What can we learn from them? What barriers face older migrants who do not use the Internet or mobile phones or would like to try and how can they be overcome? Ageing is a dynamic process. How can ICT support older migrants who, for example, abandon or lose their grasp of English as they age? This presentation examines questions such as these using data from an older and diverse population in western Adelaide, drawn from the 2006 ABS census, a major random sample survey and structured interviews with 30 older CALD community members who speak little English.

UNIVERSITIES GOING GREY

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Promoting health benefits to seniors of remaining physically and mentally active is encouraging the older generation to pursue lifelong learning, physical exercise and other forms of social engagement. The retirement industry has been quick to respond, offering access to these types of engagement opportunities as an attraction of retirement village living. Urban planners, in acknowledging this trend, are also turning their attention to how and what type of opportunities for social engagement can be afforded to benefit seniors ageing-in-place.

This paper draws on research from my doctoral thesis entitled **Universities and Positive Ageing: Emerging modes of engagement for an ageing society**, which explores participation by older persons in the activities of Australian universities. In particular the role of the campus setting and its urban surroundings in encouraging or hindering participation by seniors ageing-in-place. Through understanding of this physical dimension, the research aims to make recommendations to expand participation to promote positive ageing, but also examine the potential of this engagement model within other community settings. The paper presents the findings of an Australia-wide audit of universities identifying the range of opportunities being offered to seniors to participate in the core activities of these institutions. The results point to mutual benefits being delivered, revealing why these universities are increasingly offering such opportunities but also why seniors are voluntarily participating. The opportunities uncovered range from attending classes, assisting with student practicum, volunteering for research projects through to pursuing their cultural interests and boarding students. For seniors, participation appears to be encouraging healthy ageing, but also is helping many to cope with their transition into retirement. However of most value, the findings challenge expectations about the types of activities seniors might choose to participate in if given the opportunity and demonstrates their capacity to make a valued contribution through volunteering.

PARTICIPATION IN ART AND CRAFT ACTIVITIES - A NOT SO "SIMPLE" PLEASURE FOR OLDER WOMEN

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"Use it or lose it" has become a popular catch-cry aimed at older adults to encourage participation in cognitive, physical and social activities. The underlying science suggests that remaining active protects against cognitive and physical decline. At a policy level, being active is promoted as fundamental for older adults' health and wellbeing. Art and craft activities are common activities among older women and potentially tap into cognitive, physical and social domains. However, specific theory linking art and craft activities to health in older women is lacking. This paper presents findings of a study which aimed to develop a theoretical model for explaining how participation in art and craft activities related to health in women aged in their 80s. Participants in the study were enrolled in the Australian Longitudinal Study on Women's Health birth cohort 1921-1926. Grounded Theory guided the analysis of two types of qualitative data - in-depth interviews and open text survey comments. Socio-demographic information was also considered. Participation involved "making something" and this depended on a range of thinking processes and the ability to manipulate tools and materials. The theoretical model showed that participation in art and craft activities was a cyclical process where the woman's participation shaped and was shaped by her physical and social environments and health condition. Emotions were key drivers in the process especially emotions such as enjoyment and pleasure. The woman's choice in how she continued to participate was based on her determination of whether the effort of making was worth the tangible and intangible outcomes of her participation. In considering the types of activity that may indeed promote health in older women, the "simple" pleasure of art and craft should not be overlooked. These findings have relevance to policy-makers, health care practitioners and others working in community settings with older adults.

SOCIAL NETWORKS OF OLDER PEOPLE: OLDER PEOPLE AND SHOP-GOING

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The Older People and Shop-Going Study is a classic grounded theory enquiry involving investigation of older peoples' interaction in their neighbourhood shops. Older shoppers and shop-keepers associated with a shopping strip in a south-eastern suburb of Melbourne, Australia have been interviewed and observed. Data analysis indicates that neighbourhood shops provide an arena where participants authenticate themselves with a view to consolidating their position in the neighbourhood in the present and for the future. Consolidation is achieved through 'Civic Socialising', properties of which include: Selecting; Surveilling; and Strategising. This study augments current understanding of the social life of older people, understanding that has traditionally been based largely on consideration of interaction with family, friends, and neighbours. This new knowledge suggests that current approaches used to determine the social associations of older people are based on incomplete knowledge. This will in turn affect assessment processes and instruments used to determine whether an older person is at risk of social isolation. Inaccurate assessment will have serious consequence for future service provision. The world population is ageing rapidly and it is forecast that vast numbers of older people will be residing alone. In Australia, governments advocate supporting elderly people to remain in their home for as long as possible. Support services for so many people will require considered allocation. Assessment of social circumstances will play a part in determining who requires support, and who is entitled to it. Inaccurate assessment will result in wastage that cannot be sustained. The study findings also highlight older peoples' proactive approach to socialising and should encourage governments and planners to consider the benefits of ensuring that local shops remain a feature of neighbourhoods.

Session Three Abstracts

Stream 3:

Viewpoints on Ageing

AGE DIFFERENCES IN THE IMPACT OF AGEING EXPECTATIONS ON HEALTH BEHAVIOURS AND OUTCOMES

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Expectations surrounding age and age processes are important drivers of health behaviours and outcomes. Most research on expectations of ageing and health-related issues has focused on samples of older adults; understanding how expectations of ageing influence health behaviours and outcomes in younger adults is an important aspect missing from the literature. The Stereotype Embodiment Theory hypothesises that early adulthood is an important life stage because individuals assimilate age stereotypes and important health behaviours into their self-perception. The present study aimed to investigate the role expectations of ageing play on behaviours and outcomes across the lifespan by comparing a young adult cohort (aged 17 to 39 years; $M = 20.37$, $SD = 3.83$) with an older cohort (aged 65 years and older; $M = 76.10$, $SD = 11.11$). This study used a cross-sectional survey design to collect data. In accordance with the Stereotype Embodiment theory, it was hypothesised that expectations of ageing would mediate the relationship between age and health behaviours and outcomes in older adults, but not in younger adults. Regression models showed that the mean-biased corrected bootstrap estimate of the indirect effect was .04 ($SE = .02$) with a 95% confidence interval of between .01 and .12 (based on 5000 samples) for health outcomes in older adults (final model $R^2 = .15$, $F(2,72) = 6.27$, $p = .003$). The results indicated that the relationship between age and health outcomes was fully mediated by ageing expectations for older adults, but not for younger adults. This supports our hypothesis. Implications of our findings are discussed in terms of practical application of these findings on the influence of ageing expectations on health outcomes as one moves through life.

ACTIVE AGEING AND COMMUNITY AGED CARE, BARRIERS, SUCCESSES AND A WAY FORWARD

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This presentation focuses on a current research project and key themes that are presenting on active ageing and community care delivery to assist in informing practical application at service level. Case Managers and Coordinators from across New South Wales and South East Queensland were interviewed to explore how the principle of active ageing is perceived and understood among case managers and coordinators and how service delivery in community aged care programs support active ageing.

The focus of this research is about the process of making sense of active ageing from a case managers/coordinators perspective through exploration of meaning, interpretations and experiences of the delivers of community aged care programs. Key themes explored through this research project include, how service delivery supports active ageing and the importance placed on encouragement and participation principles as a mechanism of achieving active ageing in community aged care delivery. Case managers and coordinators were able to identify perceived barriers and challenges in implementing active ageing principles.

The key issues and challenges were identified as ageism and dependency, the structure and flexibility of the programs, budget and costs. Also described are the capabilities required by case managers and coordinators and how the role is performed in terms of leadership and coordination of direct service delivery.

Solutions to the challenges in implementing active ageing principles and future suggested directions will need to look at how aged clients are perceived by service providers, universities and the broader community

GRACEFUL AGEING: REINVENTING THE EXPERIENCE OF AGEING TRANSITIONS

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Human ageing is a global phenomenon characterised by an experiential process of transitions. As such, graceful ageing is a subjective concept that may be construed and defined in many different ways. This article thoroughly evaluates current literature to broaden and deepen our understanding of this phenomenological concept. A multilevel systematic review, consisting of a Level 1 structured database and Google search and a Level 2 focused search, was undertaken. Revelations from the first-level review suggest that while graceful ageing is recognised as a search term in the AgeLine database, empirical evidence on this concept is limited and scarce with a low 0.02% coverage. The second-level review involved a centred evaluation of theoretical formulations cited in each of the ageing concepts identified from the first-level review. Findings from this systematic review tested with non-parametric statistics indicate that shared beliefs and views in many of the ageing concepts are reflected in rehabilitation theory, positive psychology, psychosocial theory, and TA theory. These theories are appraised on the basis of overlapping ideas that are related to quality of life variables including contextual domains of objective wellbeing, life satisfaction and meaning in life. In conclusion, reinventing our views of ageing and redefining graceful ageing is justifiable. Research implications to stimulate discourse and validate the plausibility of the theoretical framework of the graceful ageing concept are further discussed.

Session Three Abstracts

Stream 4:

The Dementia Experience

DECISIONAL CONTROL AND THE ROLE OF ADVOCACY FOR PEOPLE LIVING ALONE WITH DEMENTIA

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Background: Marginalised groups in society, such as people living alone with dementia, are potentially at risk of being excluded from health care and service decision-making. In recent years advocacy services have been working with people with dementia living alone, to facilitate their involvement in decisions concerning their own life. In spite of this very little information in the literature on dementia advocacy is found. The research aims to explore the various influences on agency in relation to the participation in decision making of individuals with dementia living alone in the community.

Aim: To provide an update on the current study and present some of the preliminary data on the consent process, decisional control and views from the clients of the advocacy service.

Methods: Following a consent process semi-structured interviews were conducted. The consent process will be discussed.

Results: The participants interviewed clearly wanted to be involved in research. Decisional control was very important to the majority of participants interviewed. However, their level of involvement ranged from non-involvement, to full control. The data highlighted tensions between family relations and the individuals in the decision-making process. The clients described advocacy in a positive manner.

Conclusion: Participants experienced a loss of agency in the decision-making process. This loss impacted on the participant's relationships. The involvement of advocacy demonstrated improvements in the well-being of people living alone with dementia. These participants were able to provide detailed information on their views towards memory loss, decisional control and the advocacy service.

PERCEPTIONS OF OLDER PEOPLE LIVING WITH MEMORY LOSS

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This project is an exploratory, longitudinal, qualitative study, that investigates the perceptions of older people living with memory loss and at increased risk of developing Alzheimer's Disease and Related Dementias (ADRD). The perspective of their support persons and General Practitioners (GPs) was also sought.

Traditionally, research has been conducted after a diagnosis of mild cognitive impairment (MCI) or dementia has been made. There are few studies of the lived experience of memory impairment of older people (those over 75 years) in the pre-diagnosis phase.

Of particular interest is the stigma surrounding ADRD and its impact on the discussion of memory difficulties and problems with Activities of Daily Living (ADL) with their GP.

This study seeks to understand how older peoples' perceptions of memory loss and possible dementia influence their communication of memory concerns to their GP, and the subsequent recognition and disclosure of an ADRD diagnosis by their GP. The aim is to facilitate the early diagnosis of ADRD.

EXTENDED AGED CARE AT HOME DEMENTIA PACKAGES AND THE INTERSECTION WITH RESIDENTIAL CARE

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Extended Aged Care at Home Dementia (EACHD) packages were introduced by the Australian Government in 2006 to provide a home-based, high-level care option for people with dementia with behavioural and psychological symptoms of dementia (BPSD). This paper explores how EACHD packages influence informal carers' perceptions and experience of residential aged care (RAC) placement. Interviews were conducted with 38 carers (84% female); waiting for an EACHD package (11), receiving an EACHD package (14) or receiving an EACHD package before the client died or moved into RAC (13). Findings indicated that carers were strongly committed to caring for their relative at home. This was influenced by reciprocity and wanting to maintain their relationship with the person with dementia and wanting to fulfil their relatives goal to stay home. Health professionals usually encouraged family carers to place the person with dementia in RAC. RAC respite also played an important role in influencing carer's perceptions of permanent RAC. EACHD packages enabled an increase in formal services compared with levels accessed prior to the package. 42% of participants currently accessing an EACHD package had received it for more than 18 months, including three carers who had accessed it for more than four years. This suggests that EACHD packages can provide support for long term care in the community. The demands of providing full time care, however, meant that RAC was often considered inevitable. Participants who had placed their relative in RAC described EACHD packages as having an instrumental role in the placement process, but only a third reported emotional support through this distressing event. Two carers reported being pressured to place their relative in RAC by the EACHD agency.

This study was financially supported with a one year National Ageing Research Institute studentship and an Assessment and Better Care Outcomes Dementia Collaborative Research Centre Scholarship

BILINGUALISM IN THE AGEING POPULATION: CONSEQUENCES OF LANGUAGE CHANGE AND LANGUAGE LOSS IN BILINGUAL DEMENTIA AND APHASIA

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Bilingualism is prevalent and increasing in Australia, particularly in the ageing population. Over 30% of individuals aged 65 and older speak a language other than English (ABS, 2006). Older individuals are at higher risk of language and communication impairment due to strokes and dementia. Communication and language impairment impact on the individual's independence, daily functioning and psychosocial wellbeing, and on carer stress. For bilingual adults, the extent, type and time-course of impairment often presents differently in each language (Paradis 2008). Accurate diagnosis and management is dependent on thorough assessment in each language, yet detailed cognitive and communicative assessment often continues to be conducted in English only. Given the increasing bilingual aged population, it is important that practitioners and service providers are aware of the impact of communication impairment in bilinguals, and the need for assessment in both languages. This research describes patterns of language change in bilinguals with acquired language impairment (aphasia) and dementia, and the impact on social interaction and independent functioning. Research findings from a recent empirical study show that bilingual individuals previously able to fluently speak English and a community language (Rarotongan Cook Islands Maori, Maltese, French) were impaired in each language and impaired in their ability to switch languages in conversation, a typical part of everyday interaction. Impaired communication skill in each language impacted on their ability to participate in daily community activities (e.g. shopping) and to function independently at home (e.g. use the telephone for social or emergency purposes), and impacted on quality of life and wellbeing for both the individual and carer. The implications of this study and recommendations for future care and management of bilingual aged population with communication impairments are discussed.

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Poster Presentation

Abstracts

UNDERSTANDING SLEEP DIFFICULTIES IN CARERS OF PEOPLE WITH DEMENTIA

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Many people with dementia are cared for in the community by family. The caring role may place significant burden upon those who undertake it. Previous research suggests that home carers of people with dementia often report difficulties with sleep, and that sleep complaints may be associated with poorer mental health and physical functioning in carers. The source of these sleep difficulties likely stems from a combination of factors. There has, however, been limited objective evaluation of carer sleep, and limited investigation of potential causes of sleep problems in this population. We present the rationale and proposed design for a study of objectively measured sleep in dyads of people with dementia and their carers. This research aims to investigate the relationship between the night-time sleep of the person with dementia and that of their carer. Further, it aims to assess the potential role of circadian disruption, which has been implicated in sleep problems in ageing populations, upon carer sleep. The study will involve completion of a questionnaire, as well as the use of Actigraphy to assess sleep/wake behaviour and light exposure in both dyad members. Better understanding of the mechanisms involved in sleep difficulties in this group will lead to identification, and then trial, of appropriate interventions to improve sleep in carers of people with dementia.

FAMILY MEMBERS' CONSTRUCTS OF COLLABORATION AND ADVOCACY IN RURAL RESIDENTIAL AGED CARE FACILITIES

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The inquiry, 'Caring for Older Australians' is evidence of the Government's concern for providing adequate health care to a cohort that is both increasing in age and dependency. A population with a high percentage diagnosed with chronic illness at a time when nursing shortages, inadequate funding and limited resources are available. In rural areas the situation is further complicated by distance and the provision of adequate health services including Residential Aged Care Facilities (RACFs). Many families and significant others who visit residents in RACFs, regularly provide assistance supporting staff in delivering care, especially in high care facilities to ensure that resident's basic needs are met.

This qualitative study aims to explore the nature of the collaborative partnership and communicative process between families, significant others (close friends) and care staff within rural RACFs. Ethical approval will be sought from the Department of Rural Health, University of Tasmania. This study is to recruit participants through advertising in the local newspaper for persons who visit residents of a rural RACF on a regular basis (twice per month). The views of this cohort are to establish and describe the collaborative staff-family relationship; the practices and strategies which contribute to advocacy and respecting family (others) decisions and how in high care settings this can be promoted. The methodology is through a naturalistic inquiry adopting a semi-structured interview process. Data collection is proposed for 2012/13 with the data being transcribed verbatim and analysed using NVivo 9.1 computer software.

Similar studies conducted in low care RACFs in metropolitan settings have demonstrated the need for improvement in staff-family communications. The significance of this study is to explore the voices of residents through collaborative engagement and advocacy to ensure those who no longer can speak for themselves are heard.

ACCREDITATION OF AUSTRALIAN RESIDENTIAL AGED CARE: AN INSTITUTIONAL THEORY AND QUALITY PERSPECTIVE

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The aim of this research is to determine the reasons why Residential Aged Care Homes (RACHs) undertake the accreditation process, and to evaluate the influence that the accreditation system has on the quality of RACHs. This research uses institutional theory to evaluate the influences of accreditation on RACHs, in terms of achieving legitimacy and/or improving levels of quality; it also determines the importance that RACHs assign to the standards of the accreditation process. This paper is exploratory in nature, using a descriptive research design with multiple case studies from New South Wales, Australia. Data collection using in-depth interviews and surveys is applied in this research; this will facilitate an examination of the data from two different perspectives: 1) from managerial staff directly involved with the accreditation process; and 2) from other RACH staff. The pilot study of this research has been completed, resulting in amendments to the interview guides and survey instruments; data collection is still in progress. The implications of this research are that, it has the potential to identify the reasons why RACHs adopt the accreditation standards, and to address paucity in the current literature. In relation to its practical and social implications, this research has the potential to determine the influence that the adoption of accreditation standards has on the quality of aged care services and facilities provided by RACHs, how RACHs view accreditation, and to provide valuable insights and direction to the Australian Government regarding aged care policies. The originality of this research lies in the fact that it explores the relationship between accreditation and the importance that RACHs devote to the accreditation system from an institutional theory perspective.

QUALITY OF HEALTH LITERACY AND ROLE OF SOCIAL NETWORKS IN ARTHRITIS PATIENTS' HEALTH INFORMATION SEEKING BEHAVIOUR

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This paper discusses the influence an individual's health literacy can have on the quality of information that the individual accesses through his/her social network. Health Information Seeking Behaviour (HISB) is a key component of patient behaviour which assists in the management of chronic disease through medication, such as arthritis; however, studies looking at HISB behaviour in arthritis patients are limited. Many HISB studies and current chronic disease management models assume that the patient has a level of health literacy sufficient to understand the factors that may aggravate symptoms and the types of treatments that are effective in managing these symptoms. Patients with low health literacy have little understanding of the medications prescribed to them, with the potential for increased risk of poor medication management related outcomes.. This paper reports the findings of a study which examined how arthritis patients' health literacy affected their engagement in arthritis-focused HISB and what sources of health information are available to them, including their informal social network. These findings have implications for patient health education programs aimed at improving quality use of medicines in the management of chronic diseases such as arthritis.

FINISHED @ 50? CAREER MANAGEMENT FOR ACADEMICS AGED IN THEIR 50s

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Australian universities are on the cusp of an unprecedented human resource crisis with 40% of academics aged 50 and over. This comes at a time when students numbers and ongoing demand for higher education are high but competitive funding from national governments coupled with managerialist governance have kept the academic workforce lean. Moreover, universities contribute significantly to Australia's economic growth with education ranking as Australia's third largest export industry directly behind coal and iron ore (Universities of Australia, 2009). Therefore, sustaining universities is about sustaining Australia's economy. This study explores the perceptions of both academics and university management on how universities support the careers for academics aged in their 50s. It has broad international relevance, given the unparalleled academic staffing crisis predictions within OECD countries. This study is qualitative, with documents and interviews as key data sources. Documentary analysis reveals only one third of the universities examined had retirement preparation programs but no universities had policies for the continuing employment of academics beyond the traditional retirement age. Interviews with academics provide insights about several issues ranging from performance management to retirement. Differences exist by gender, university type and discipline groupings. Interviews with university management revealed issues ranging from ageist and discriminatory attitudes about older academics to a disconnect that exists between senior and middle management levels. This study offers several recommendations for university management and their HRM policy-makers, including the need to re-think a 'one-size fits all' approach to career management and to replace these with innovative and flexible policies and practices that reflect the complexities of academic work and respond to individual needs.

BILINGUALISM IN APHASIA: IMPAIRED LANGUAGE SWITCHING BUT INTACT LANGUAGE SELECTION

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BACKGROUND: Bilingualism is prevalent and increasing in Australia, particularly in the older population. Older bilingual adults who are proficient in two or more languages can speak a single language (language-selection) e.g. with monolinguals, or alternate between languages (language-switching) e.g. with bilinguals in appropriate contexts. Language-switching is a typical mode of conversation for many bilinguals, and follows consistent grammatical and discourse patterns. The ability to use and switch between both languages is important in maintaining social and community participation, and for independent functioning. Previous research has shown that language-selection can be impaired in bilingual adults with aphasia and dementia e.g. speaking the non-target language to monolinguals (Fabbro, 2001). There has been little investigation into grammatical impairment of language-switching, despite the significant impact on communication in bilingual contexts. This study examined whether aphasia resulted in grammatical impairment of language-switching for previously proficient bilinguals.

METHODS: Bilingual participants with aphasia (n=5) and matched bilingual controls (n=5) were tested on dual-language and single-language sentences on two experimental tasks: spoken sentence production and lexical selection, on narrative recounts and conversation. Participants spoke English and either Rarotongan Cook Islands Maori, Maltese or French.

RESULTS: The aphasic bilinguals performed significantly worse than controls on grammatical aspects of language-switching. However, the aphasic bilinguals, like the controls, accurately selected the target language across all tasks in bilingual and monolingual contexts. Thus grammatically-impaired language-switching but intact language-selection was demonstrated. These results were robust across 3 diverse language pairs.

CONCLUSIONS: This is the first experimental study showing grammatical impairment of language-switching in bilinguals with aphasia. Further, this study showed a dissociation between impaired language-switching and intact language-selection in aphasic bilinguals. The importance of assessment in both languages and careful analysis of language patterns in older bilinguals with aphasia and dementia is indicated.

MAKING THE MOST OF WHAT YOU'VE GOT - THE ROLE OF TRAINING AND SUPPORT IN ACHIEVING SUSTAINABILITY AND KNOWLEDGE TRANSFER

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This poster reports on the staff recruitment and training component in a study which involves the modification, delivery and evaluation of an innovative early-intervention support model for people with early-stage dementia and their caregivers within a community service organisation. One of the main strategies used to establish if an intervention is in fact physically and fiscally feasible in its proposed setting is to trial it in the setting and use the existing workforce in implementing the intervention. We developed a training module with a multi-disciplinary team of a nurse trainer, psychologist and counsellor and delivered the training to mature staff with limited post-secondary school education and no previous experience of research. There were significant challenges in recruiting and training staff within a high demand and limited resource sector with a predominantly transient and unregulated workforce. The attitudes and assumptions of the staff participants often needed to be contested. For example, entrenched views on risk management/choice, respect for caregiver and care-recipient decisions and the capacity of a person in the early stages of dementia to express their preferences and contribute meaningfully during the intervention sessions, were explored with the staff participants during training. Achieving sustainability and knowledge transfer during intervention research projects are key factors in establishing a life for an intervention beyond the research project. We propose to establish that effective training and support strategies increase staff acceptability thereby enabling the intervention, if it proves to be effective, to move into routine practice and become 'evidence-based practice'.

Full Paper Submissions

MODELING MORTALITY WITH A BAYESIAN VECTOR AUTOREGRESSION

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Abstract

Mortality risk models have been developed to capture trends and common factors driving mortality improvement. Multiple factor models take many forms and are often developed and fitted to older ages. In order to capture trends from young ages it is necessary to take into account the richer age structure of mortality improvement from young ages to middle and then into older ages. The Heligman and Pollard (1980) model is a parametric model which captures the main features of period mortality tables and has parameters that are interpreted according to age range and effect on rates. Although time series techniques have been applied to model parameters in various parametric mortality models, there has been limited analysis of parameter risk using Bayesian techniques. This paper uses a Bayesian Vector Autoregressive (BVAR) model for the parameters of the Heligman-Pollard model and fits the model to Australian data from 1946-1995 and projects mortality from 1996-2007. VAR models allow for dependence between the parameters of the Heligman-Pollard model and are flexible and better reflect trends in the data, giving better forecasts of the parameters. Forecasts can readily incorporate parameter uncertainty using the models. Bayesian Vector Autoregressive (BVAR) models are shown to significantly improve the forecast accuracy of VAR models for mortality rates based on Australian data. The Heligman-Pollard-BVAR model results in realistic probabilistic forecasts of mortality rates that are feasible.

Rationale

This paper presents a method of extending existing parametric mortality models to capture the effects of common trends in a given population using econometric methods. It incorporates the uncertainty from parameter risk. The aim of this paper is to develop a parsimonious dynamic parametric mortality model that captures systematic longevity risk. Modelling all the parameters of a parametric mortality model simultaneously captures parameter interdependencies. Uncertainty in longevity risk from parameter estimation (parameter risk) is usually ignored yet parameter risk arises due to limited availability of data. Realistic probabilistic projections are important when public policies are implemented or capital allocations are being considered. For example, as prudential capital is becoming more risk based, regulatory authorities require insurers to hold enough capital to meet their liabilities with 99.5% probability. This means that an insurer

that ignores parameter risk is highly likely to underestimate capital requirements and puts shareholders at risk.

Method

This paper uses Australian population data obtained from the Human Mortality Database. The entire age pattern of mortality rates over a lifespan is given by a parametric mortality model. Parametric mortality models reduce a large body of data into a few parameters that are easy to interpret and easy to manipulate for analysis (Rogers, 1986). Parametric models provide comparisons of mortality rates over time and by region and produce smooth estimates of probability of death. Static parametric mortality models are made dynamic by fitting a series of time dependent parameters and then using time series or econometric techniques to quantify and project the parameters. The parametric mortality model used in this paper is the first law of mortality from Heligman and Pollard (1980) that describes mortality as a function of probability of death given a set of parameters, $\theta = (A, B, C, D, E, F, G, H)$, as follows:

$$q_x(\theta_t) = A_t^{(x+B_t)^{C_t}} + D_t \exp \left[-E_t \left(\ln \left\{ \frac{x}{F_t} \right\} \right)^2 \right] + \frac{G_t H_t^x}{1+G_t H_t^x} \quad (1)$$

Suppressing the subscript t for generality, the parameters A, B, C, D, G are all in $[0,1]$, E, F and H in $[0, \infty)$ and H . Each of the terms has a demographic interpretation. The first term, $A_t^{(x+B_t)^{C_t}}$, is a rapidly declining exponential reflecting the fall in mortality during the early childhood years. The middle term reflects accident (and maternal) mortality for males (and females). The third term is a Gompertz exponential, $G_t H_t^x$, reflecting the rise in mortality in adults due to the aging of the body. Heligman-Pollard model parameters were estimated from q_x , $x = 0,1, \dots, 85$ by minimizing the weighted sum of squared errors, S^2 :

$$S^2 = \sum_{x=0}^{85} \frac{1}{q_x^2} (q_x - \hat{q}_x)^2 \quad (2)$$

The weights in eqn. (2) as used in Heligman and Pollard (1980) are based on the assumption that the coefficient of variation is constant across age. The model defined in eqn. (1) has the disadvantage that the parameters are often highly correlated especially for males (Hartmann 1987) and therefore it is necessary to model all parameters simultaneously.

Previous models of the evolution of parameters, θ , include those in Forfar and Smith (1987) and McNown and Rogers (1989). In these two cases parameters of the Heligman-Pollard model are not modelled simultaneously and parameter interdependencies are not captured. McNown and Rogers (1989) used the techniques of Box and Jenkins. The presence of a unit root in some of the time series of the parameters required differencing the time series to achieve stationarity (McNown & Rogers, 1989) which consequently eliminated the trend. The parameters estimated using the ARIMA models were extrapolated to obtain a series of Heligman-Pollard curves with time varying parameters. The assumption of independence of Heligman-Pollard parameters and the use of univariate methods led to forecasts that were not accurate and were inconsistent (Lee,

1992). The use of econometric models such as Vector Autoregressive models (described below) is shown to be an improvement.

Sims (1980) developed and defined a Vector Autoregression (VAR(p)) model with p lags as:

$$\theta_t = c + \sum_{l=1}^p \Omega_l \theta_{t-l} + \epsilon_t \quad (3)$$

$\theta_t, t = 1, 2, \dots, T$ is a column vector of n variables. $c = (c_1, \dots, c_n)$ is an $n \times 1$ vector of unknown constants. Ω_l is an unknown $n \times n$ matrix of coefficient of θ_{t-l} at lag l . $\epsilon_t, t = 1, 2, \dots, T$ are independent identically distributed errors. ϵ_t measures the degree to which the contemporaneous vector θ_t is determined by the VAR(p). ϵ_t is a variable that is influenced by the number of lags, p in the VAR(p) and the choice of coefficients, $v = (c, \Omega_1, \dots, \Omega_p)$, that give weights in the linear combination that forms the VAR(p). The vector autoregressive (VAR) model extends univariate autoregressive models to dynamic multivariate and provides better forecasts than univariate time series models (Zivot & Wang, 2006).

Cointegration relations (stationary linear combination of the non-stationary terms) are not directly apparent from a VAR(p) in levels such as eqn. (3). Therefore, for non-stationary time series a VAR(p) is transformed into a Vector Error Correction Model (VECM) by taking the first difference of θ_t so that:

$$\Delta \theta_t = c + \Pi \theta_{t-1} + \sum_{k=1}^{p-1} \Gamma_k \Delta \theta_{t-k} + \epsilon_t \quad (4)$$

VAR models are often over-parameterized since they impose no theoretical restrictions to guide the specification of the model (Litterman, 1986; Sims & Zha, 1998; Robertson & Tallman, 1999). The estimates of the coefficients of the VAR(p) model, v , are considered to be fixed quantities and are not an accurate reflection of the underlying relationship because some elements of v are non-zero purely by chance when estimated by OLS.

Bayesian inference is based on the premise that the data is fixed but the population parameters are random and requires some knowledge of the distribution of these random parameters. In the case of the Bayesian VAR the uncertainty regarding the distribution of the coefficient matrices is reflected in the prior and resulting posterior distribution of the coefficients. Litterman (1986) develops a Bayesian method that views the coefficients v as random variables rather than viewing them as fixed quantities like in the unrestricted VAR(p). Litterman (1986) specified the form of the prior distributions by giving them specific mean values and measuring the variation (the “tightness” of the distributions) around these given prior mean values using a set of hyperparameters (for details refer to Sims & Zha, 1998). This method was extended by Sims & Zha (1998) who incorporate prior information into the VAR model by considering the entire system to give the prior that is used in the HP-BVAR model described in this paper. The Sims-Zha prior is selected because studies such as Robertson & Tallman (1999b) show its provisions for unit roots

and cointegration improve the performance of forecasts in systems based on non-stationary variables.

All the analysis was performed using R, S+ and S+Finmetrics. In R, specialized packages for econometric methods include vars (Pfaff, 2008) and MSBVAR (Brandt, 2011). The software is well developed with detailed manuals.

The parameters of the Heligman-Pollard model, θ_t , are estimated at a series of points in time, t , and the evolution of the parameters is obtained. The method is summarised as follows:

1. Estimate parameters of Heligman-Pollard Model, θ_t .
2. Determine optimal lag length for VAR(p).
3. Test for unit-roots/stationarity. If there are unit roots test for cointegration.
4. HP-VAR model: Use VAR(p) to project θ_t and substitute into eqn. (1) to estimate \hat{q}_x .
5. HP-BVAR model: Use B-VAR(p) to obtain posterior density of θ_t i.e. $f(\theta | \text{past data})$ and substitute into eq. (1) to estimate \hat{q}_x .

Results to date

The HP-VAR and HP-BVAR models were estimated using data from 1946-1995 and projections from 1996-2007 were made and compared to the observed data from the corresponding years. The presence of significant correlation between the parameters forms a basis for modelling the parameters as a stochastic VAR(p).¹ Logarithms of the parameters are modelled to improve the model fit and to ensure the parameters are positive. A VAR(2) is found to minimise the selection criterion. Unit root tests indicate the parameters are at most I(1) with a constant and a trend. Testing for difference stationarity confirms that time series of the Heligman-Pollard Parameters are I(1) except for the female B parameter. Cointegration tests on the corresponding VECM find that cointegration exists between the parameters of the Heligman-Pollard model. The tests show that at 99% confidence a VECM with one cointegration relation is required for both males and females.

For the HP-BVAR model with Sims-Zha prior, one set of hyperparameters that yields a small RMSE over the training period is ($\lambda_0 = 0.9, \lambda_1 = 0.4, \lambda_3 = 0.5, \lambda_4 = 0.2, \lambda_5 = 6, \lambda_6 = 5$).

A significant advantage of using the BVAR over the VAR is projected mortality forecasts from HP-BVAR produce wider confidence intervals (see figures 1 and 2) than HP-VAR since the BVAR incorporates more uncertainty regarding projected

¹ Parameters are correlated with 15 and 10 significant pair-wise correlations for males and females respectively out of 28 pair-wise correlations. Correlations between the female parameters are small.

mortality. The Bayesian-VAR is based on an “adequate” number of parameters as it is a compromise between over-parameterised VAR(p) and under-parameterised univariate techniques.

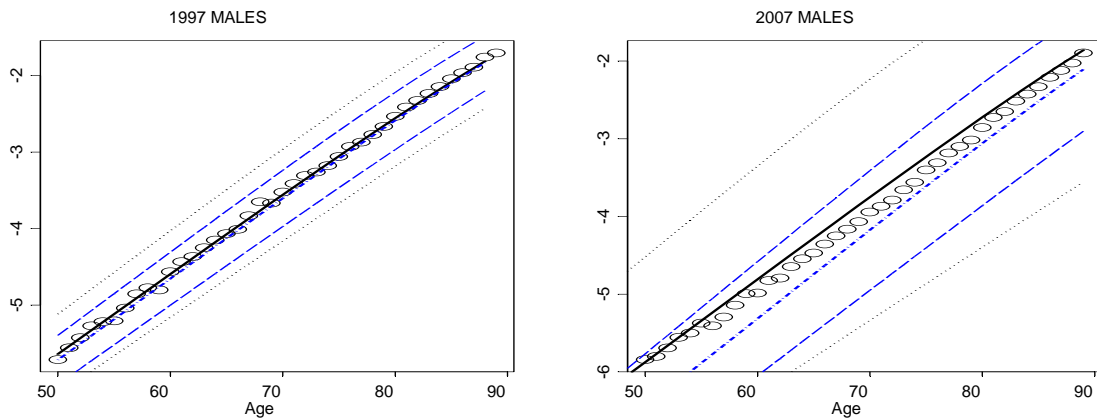


Figure 1: Predictions of Male $\ln q_x$ and 99.5% confidence intervals from HP-VAR (Blue lines), HP-BVAR (Black lines) and observed $\ln q_x$ (circles). HP-BVAR model has wider confidence intervals.

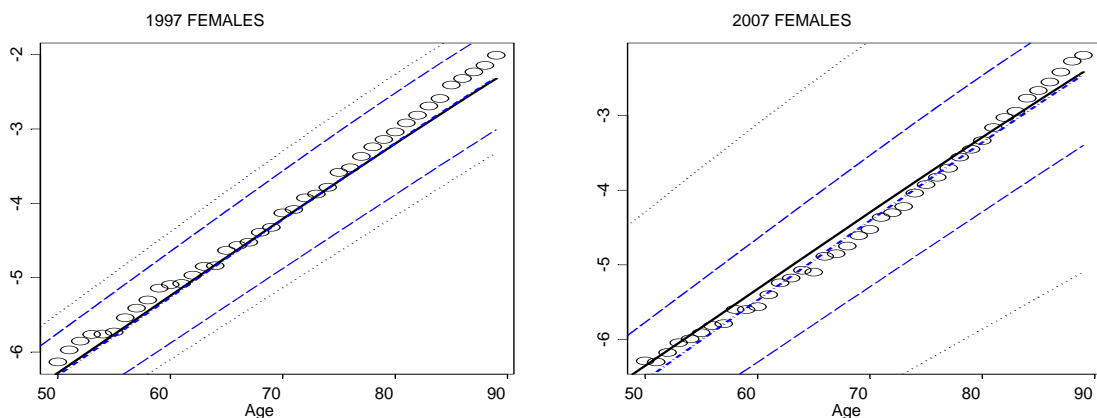


Figure 2: Predictions of Female $\ln q_x$ and 99.5% confidence intervals from HP-VAR (Blue lines), HP-BVAR (Black lines) and observed $\ln q_x$ (circles). HP-BVAR model has wider confidence intervals.

	Males				Females			
	MR	BVAR	VAR	LC	MR	BVAR	VAR	LC
1996	27.03	23.09	23.23	9.15	24.93	23.39	23.33	9.77
1997	28.48	22.79	23.7	9.51	22.36	24.95	25.42	10.24
1998	25.79	20.74	22.57	9.04	24.97	29.18	30.29	10.5
1999	26.76	20.99	24.55	12.58	24.91	29.55	29.36	16.65
2000	26.52	21.19	25.37	13.34	23.9	28.64	28.99	14.02
2001	30.68	22.89	24.75	15.35	23.28	29.85	30.09	14.39
2002	33.19	24.63	23.97	14.59	25.88	29.1	28.83	16.67
2003	30.5	22.86	24.45	15.83	27.31	30.2	30.7	13.28
2004	32.87	25.95	27.55	18.99	27.83	30.21	29.1	16.71
2005	32.09	25.74	25.81	21.02	29.55	31.57	30.91	15.62
2006	34.4	28.62	28.45	24.19	36.47	34.48	32.92	19.42
2007	42.91	36.02	30.06	25.95	32.87	31.83	31.76	16.19

Table 1: MAPE of predicted mortality for males (left) and females (right) given different mortality models for ages 0-89. The models are arranged in order of increasing number of parameters with the model with the largest number of parameters on the right.

Models that capture parameter interdependencies perform better than the univariate model for Australian males. The MR (McNown and Rogers) univariate, BVAR (HP-BVAR), and VAR (HP-VAR) model were compared to the LC (Lee-Carter) and table 1 shows that when significant parameter correlation is present the accuracy of the forecasts is improved by capturing the relationship between the parameters. For males, the HP-BVAR model performs mostly better than the VAR model which is over parameterized and both models capturing parameter interdependencies model outperform the univariate MR model. The Lee-Carter model gives better estimates than all the other models but it has the largest number of parameters. The HP-VAR and HP-BVAR models for Australian females show no gain in accuracy and the univariate MR model outperforms the BVAR and VAR models.

Implications for policy and practice

The models presented in this paper provide a better understanding of mortality risk with parameter risk. Insurers, regulators and government must effectively measure mortality risk to nurture the Australian annuity market by providing fairly priced annuities, setting adequate capital requirements and implementing policy regarding retirement income provision. This paper draws on actuarial and econometric techniques to solve the problems of incorporating parameter interdependencies and parameter risk to obtain probabilistic mortality projections.

Summary

This paper innovatively applies econometric techniques to an actuarial model create a powerful parametric mortality model. The resulting model generates superior mortality forecasts for Australian males by overcoming parameter correlation which has been a limitation in previous studies.

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THE LIVED EXPERIENCE OF THE PERSON AT HOME FOLLOWING ADMISSION OF THEIR SPOUSE TO AN AGED CARE FACILITY: WORK IN PROGRESS. ROUND 1.

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Abstract

The Australian Bureau of Statistics (2008) reported that in 2003 there were 2.5 million Australian carers of whom 18 % (452,300) were aged 65 years and over. The Australian Institute of Welfare (AIHW, 2007) identified that 83% of older carers are caring for a spouse and that estimates show that overall, carers save the Australian economy \$16 billion annually . Their role in the community is vital. Carers play a substantial role in terms of physical, social and economic needs for the current and future ageing population of Australia. Despite their major contribution to society, little is known about the challenges and changes to carers' lives once their spouse is placed into an aged care facility. This study aims to identify what happens to the carer and their life in general after their spouse is admitted for permanent care. This information will help to inform future carers, care staff and other key stakeholders about caring experiences, to better inform health care services for carers. A hermeneutic phenomenological approach was used, underpinned by the work of phenomenologist Martin Heidegger (1889-1976). This involves in depth interviews, transcription and analysis to identify meaning in the participants' lived experiences. It has a longitudinal approach gaining insight of the participant's transition experiences as soon as possible after the admission of their spouse from home into an aged care facility, which is repeated within the first 12 months post admission. This paper presents presented emerging meaning from data collected from the first round of interviews held with participating carers. It appears there are a range of reactions to the admission of their spouse into the aged care facility. This information will potentially be helpful for all key stakeholders, particularly in providing awareness of issues associated with aged care placement for others facing a similar situation.

Rationale

As previously reported by the United Nations (2005) the spouse plays the most significant role in providing care for vulnerable, older people. These primary carers are the least likely of all carers to seek help in the role (Hales, 2007). Carers of spouses work very hard in providing care for their loved one at home and yet there appears to be no consideration of what happens to that dedicated carer after their loved one has been placed into an aged care facility for permanent care. The population of Australia and indeed the world is ageing, and continues to do so in large numbers. An initial literature review identified that whilst there is some interest in the spouse of people who has been admitted to an aged care facility there is little specific focus on their own experience of the admission.

Some phenomenological research (Kellett, 2006) has examined the carer's experiences when visiting their relative in an aged care facility, however there is little known about their issues and life experiences away from the facility.

The main goals of the project are to:

- Provide awareness to partners regarding possible reactions to the admission of their spouse to an aged care facility.
- Provide awareness to aged care staff regarding the issues spouses in the community face following admission of their partner into an aged care facility.
- Inform key stakeholders about the issues informal carers
- Identify areas that require further follow up for spouses remaining in the community after their partner has been admitted to an aged care facility

Methodology and Methods.

Phenomenology is a philosophy that revolves around the thought that unlike matter, humans have a consciousness and as such interpret the world in terms of meanings. As part of this, people "actively construct an individual social reality" (Bowling, 2009, 467). Others cannot assume another person's perspective (Mapp, 2008) as every person has their own unique experiences and the consequences of these experiences shape who they are and how they create meaning to both past and new experiences.

As explained by Cohen, Kahn and Steeves (2000) what makes hermeneutic phenomenology different from other hermeneutical approaches is that it looks at a particular phenomenon, or single kind of human experience, rather than as a social process, or a culture, or group. The Heideggerian approach to hermeneutics is relevant for this research as its interpretive approach obtains an understanding of lived experience. Cohen, Kahn, and Steeves, (2000) highlight that understanding a person's experience may guide nurses (or anyone else) to interact and assist more appropriately to that person's needs. Bassett (2006), however, agrees with Benner (1995) that although there may be deep and rich data collected from participants the conversations may reveal meanings that are only relevant at the time of interview. As a result a longitudinal approach will be taken in this study to obtain potentially richer data as opposed to gathering information at only one point in time.

Following approval by the relevant ethics committees participants were recruited using a purposeful sampling process. To be included in the study the participants had to be married, or in a defacto relationship, prior to admission of their partner into an aged care facility. Exclusion criteria were respite admissions and any known cognitive, or language, barriers of the potential participant. Participants were recruited through various aged care facilities within the Australian State of Queensland as well as a Respite transition centre. Staff provided potential participants with information sheets about the project and asked permission for

their contact details to be released to the researcher. The researcher then contacted them to make a time convenient to them for a first meeting, which is when informed consent was then obtained and assurance of the research is being completed guided by accepted ethical principles, including the right to withdraw and anonymity. An in-depth interview was carried out with participants located in either the participant's home or a place more comfortable for them to meet. As the focus sought was the lived experience of life in general for the spouse in the community, the facility was not used as an interview place as this could have the potential to bias or place the focus on the person living in the aged care facility and/or care given. The interviewer did not go with a list of predetermined questions as the aim of obtaining an individual's lived experience means that the researcher is to reduce bias as much as possible, allowing the participant to speak about their day in general, and what it is that is important to them at the time. After 12 months of recruitment, 10 participants were included in the initial round of interviews. Interviews were audio recorded and transcribed verbatim using a data protected system, thereby maintaining full confidentiality.

Emerging meaning

At this point in time explanation of lived experience cannot be explained as we are only an early stage of analysis, and part way through the longitudinal design and data collection, but there are three initial meanings that are emerging and clearly identifiable in the data.

Confusion regarding finances and paperwork.

" they inundate you with paperwork, paperwork, paperwork and in the end I just said to them I don't won't paperwork, I just cannot cope with more paperwork"

The above quite comes from a woman who feels that the paperwork caused her more stress and confusion. The majority of participants commented on the large amount of paperwork that was involved with the admission process and many were unsure if they would be able to finance their spouses stay long term. Some were also concerned about having enough money for themselves at home as indicated by another participant who stated

"your bills don't suddenly get cut in half...just because you're now one person...you can't go out as much now because of the cost."

Doubt.

"I see the others in the unit and I'm not sure she fits in. I'm not sure I've done the right thing".

The participant who provided the above quote repeated this or similar words to the same effect during the entire interview. Many participants during their first interview voiced concerns over having 'done the right thing' regarding the

decision to allow the spouse to be admitted into care. Feelings of doubt were evident in most participants.

Separation.

“I spend the time up there instead of it here...we’re not apart that much...we couldn’t live apart. We’ve just got to live together”.

The above participant, who lives in a self-contained villa on the same site as the facility his wife, has been admitted to doesn’t see himself as separate from his wife. He goes on to mention that he often brings his wife back to his villa from the facility and will cook her a meal even though he knows she gets all meals provided at the facility.

Other participants who are not in such a close proximity to their spouse talk about their separation. They make comments such as

“the thing at the moment...I’ve never lived on my own...we’ve been married for 52 years...We’ve never lived apart”.

Implications

It is evident that there are significant effects on a person’s lived experience to the admission of their spouse into an aged care facility. These first interviews have captured a snapshot of what it at the focus of the participants’ attention at the time. Initial review indicates some themes that may be relevant to many of them; however, it is too early to comment on the meaning of these. There are stresses felt by the person who has their spouse admitted to an aged care facility. Further interviews and further detailed analysis of the themes aimed to identify particular meanings for the participants can inform others going through a similar experience. Explanation of lived experience will assist understanding of this important group of people. It may also provide evidence to inform policies such as the current process of admission itself.

Summary

This study will follow a group of 10 participants for 12 months after admission of their spouse into an aged care facility. Already, after an initial first round of interviews it can be seen that carers react after placing a relative into aged care. It will be interesting to follow the participants through the 12-month period to obtain what is important to them at various stages during this transition. Data analysis has only just begun but already there are so many perspectives to interpret with rich data coming from the study to inform key stakeholders as identified in the study goals.

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CHOIR SINGING AS A PSYCHOTHERAPEUTIC INTERVENTION FOR REDUCING DEPRESSION IN MID TO OLDER AGE: A CONTROLLED TRIAL WITH QEEG TESTING.

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Abstract

Mid to later life depression is known to be a significant precursor to functional and cognitive limitations in old age. The current study examined whether symptoms of depression, post traumatic stress and anxiety in mid to later life could be ameliorated through a choir program. The project involved community dwelling volunteers (N=32) ranging from 48-73 years in the Blue Mountains, west of Sydney. All participants were assessed for depression, post traumatic stress, well-being and quality of life. Subsequently, the participants were allocated to groups in a quasi-random method, i.e. choir group N=21 and control group N=11. All but four participants displayed depressive symptoms at baseline. A mixed methods experimental approach compared pre/post results between the choral and control groups. The eight week choral program included meditation, singing exercises and learning new songs. The control group lived their lives as normal between the pre and post interviews and assessments. Additionally, a pilot trial was carried out with subjects selected at random from the choir (N=9), using quantitative electroencephalograms (QEEG), monitoring changes in brain wave patterns before and after the singing intervention. A significant decrease in depression was observed in the choir group using the Beck Depression Inventory (BDI-II). An increase in wellbeing using the Spirituality Index of Wellbeing (SIWB) was found after eight weeks of two-hourly choral sessions. The preliminary QEEG data showed reduced right hemispheric lateralization following the choral singing intervention. All post observations from psychometric tests and QEEGs indicated that depressive symptoms had significantly reduced and wellness factors had increased. Even though findings were promising, further research is recommended in order to compare these results with other psychosocial programs such as meditation or art therapy. A later study with the same group would indicate that present gains have been maintained.

Rationale

In a previous study, the first author examined the efficacy of choral singing among a population of people with dementia living in residential care. Results showed a number of benefits, including significant decreases in depressive symptoms (Robertson-Gillam, 2011). The present study built on this by examining the effects of a choral program with a different population: mid to later aged people living in the community with depressive symptoms.

Method

A mixed methods experimental approach compared a choir group with a control group. A convergent parallel design was used in which the data was collected and analysed with a view to discerning relationships (Creswell & Plano Clark, 2011). The choral program is a specifically designed psychotherapeutic intervention that has been applied to three other choirs in aged care before this current research project (Robertson-Gillam, 2008, 2011).

Recruitment

Participants were volunteers from the Blue Mountains, west of Sydney, who answered a series of advertisements placed in the local paper. Respondents were recruited according to their age and state of health. A final sample of 32 participated in the study. There were 29 females and 3 males. All participants were White Caucasians, mostly of Australian or European descent.

Variables

The dependent variables were symptoms of depression, states of wellbeing and altered brain wave states. These were measured and compared to the pre-tests after the eight week choral intervention. Independent variables were choral singing and social interactions.

Quantitative Data

Quantitative tools were used to assess depressive symptoms (Beck Depression Inventory: BDI-11: Beck, 1996), post traumatic stress (Leahy & Holland, 2000), quality of life (WHO-QOL-BREF, 2004) and wellness (Spirituality Index of Wellbeing: SIWB: Daaleman & Frey, 2004). All of these instruments are validated and reliable. They consisted of rated answers on a Likert scale with comments added.

QEEG Data

The MITSAR portable QEEG program was used for the brain wave testing. Dr Leon Petchkovsky conducted all the QEEG tests. This study introduced the use of QEEGs to support the effects of choral singing by measuring brain wave patterns. These tests were conducted on a group of choir participants (N=9) before and after the eight-week intervention period.

Qualitative Data

Qualitative data used semi-structured pre/post interviews for demographic details and personal life perceptions which might impact on mood states and general health. These were audio recorded for comparative thematic analysis. Demographic details included age, gender, partnering, education, employment status and musical history.

Observational responses were taken from video recordings of each choir session. All choir participants completed surveys after every session and rated their responses on a Likert scale. Questions involved how they felt being in a choir including the social and singing activities. After the final session, choir participants were asked to rate their responses to any changes in self esteem/confidence, motivation, social interaction, expression of feelings, relaxation response, coping strategies, moods, physical and emotional pain, sleeping patterns, and general health. Personal comments were invited with both surveys.

Issues and Challenges

The study was originally planned as a randomized controlled trial. However, due to the small sample size and the unique nature of choir singing, it was decided to give control group members the option of joining the choir. Four participants took this option. The study then became a controlled trial due to the quasi allocation of participants and this could have affected the final results.

The QEEG scans were only carried out on a small sample of choir participants due to limited funding. Without a comparison treatment, the conclusions about changes in brain activations from choral singing remain speculative but promising. Each subject was their own control at the pre/post testings. Further research with QEEGs should include subjects from both experimental and control groups. This research should be extended to other psychosocial activities in order to ascertain whether choral singing is unique in its ability to create positive brain activations.

Another challenge included the intense preparation required to establish the choir. Participants were given an audio CD of physical and singing exercises, a meditation dialogue and the piano accompaniments to a compiled songbook. This required time and careful choosing of songs to fit this age group and culture. Copyright laws were taken into account and six songs were selected to be learnt properly within the eight week period. Further replications of this study would need to take such challenges into account.

The choir leader was also the primary researcher and this could also be a confounding variable. Further research should include a separate choir leader and researcher rather than one person in both roles to avoid any possible conflict of purposes.

Results

Demographics

T-tests were carried out to ascertain any significant demographic differences between the two groups. The choir and control groups showed no statistically significant differences on all the main indicators except education. For education,

when analysed, the cell sizes were too small for a valid chi-square analysis, so the Fisher's Exact p value was reported. There was a statistically significant difference between the choir and control groups in terms of education. For example, the choir group had a significantly higher proportion of tertiary education than the control group as outlined in Table 1.

Table 1: Demographics of study participants by category

Category	Total (N=32)	Control (N=11)	Choir (N=21)	P value
Age, mean (SD)	59.8 (6.0)	60.6 (6.1)	59.5 (6.0)	0.64
Female, % (n)	90.6 (29)	90.9 (10)	90.5 (19)	1.00
Education, % (n)				
• Secondary	21.9 (7)	45.5 (5)	9.5 (2)	
• TAFE/technical	6.3 (2)	18.2 (2)	0.0 (0)	
• Tertiary	71.9 (23)	36.4 (4)	90.5 (19)	0.003
• Music history	59.4 (19)	63.6 (7)	57.1 (12)	1.00
Partnered, % (n)	40.6 (13)	36.4 (4)	42.9 (9)	1.00
Employed, % (n)	46.9 (15)	36.4 (4)	52.4 (11)	0.39

Quantitative data

1. Beck Depression Inventory Scores

A statistically significant decrease in depression scores from pre-to-post intervention was found in the Choir group (paired samples $t=5.68$, $df=20$, $p<0.001$) but not in the Control group (paired samples t -test= 1.82 , $df=10$, $p=0.098$).

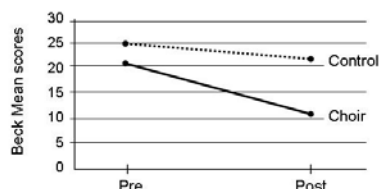


Figure 1: Quantitative Results: Beck Depression Inventory II (BDI-II)

Neither the Quality of Life nor the Post Traumatic Stress Disorder Scores were found to be statistically significant at this preliminary stage and are therefore not reported.

2. Spirituality Index of Wellbeing (SIWB) Scores

Paired sample t-tests were used for the SIWB. Preliminary results indicated that there was a significant increase in wellbeing scores at the post test stage in the choir group ($p=0.013$, at $p= 0.05$) but not in the control group.

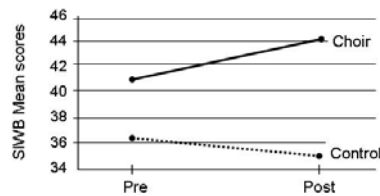


Figure 2: Spirituality Index of Well-being Scores

3. QEEG scans

Preliminary QEEG results found that the original interhemispheric imbalance in all subjects at the pre-test stage seemed to be redressed to some degree following the eight week singing program. This re-balancing of brain frequencies is consistent with improvements in depressive symptoms.

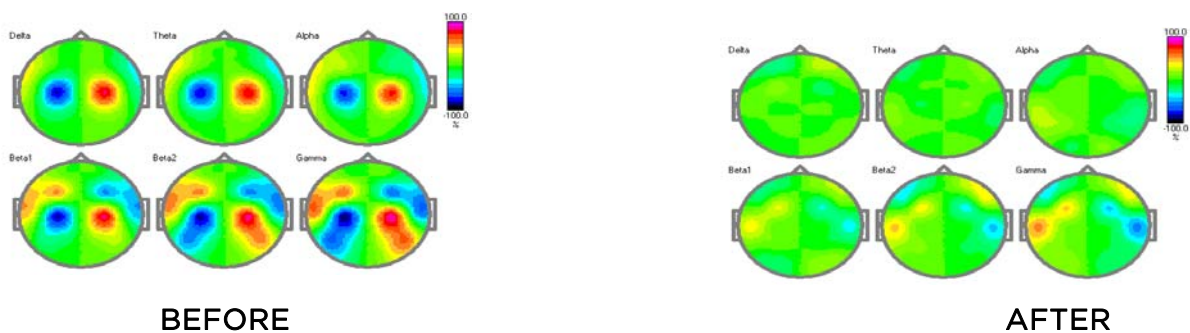


Figure 3: QEEG scans of Subject 2 in the pilot trial before and after the eight-week choir intervention.

The *before* QEEG in Figure 3 is very polarised. The differences between the hemispheres (asymmetry of activity) is extreme with hyperactivity across every frequency in the Right Parietal region, and relative hypoactivity in the Left Parietal region. The *after* QEEG shows much less interhemispheric contrast, and, in the higher frequencies, the previous dominance of Right hemispheric activity is actually reversed with stronger Left Parietal signals. This indicates that the subject's interhemispheric brain wave patterns became more balanced by the end of the choral program.

Implications for policy and practice

The preliminary results indicated that depressive symptoms were mitigated significantly through the choral singing program. Previous research revealed that choral singing can effectively reduce depressive symptoms in residential elderly patients with and without dementia over a 3-6 month period (Robertson-Gillam, 2008, 2011). An implication for policy and practice would appear to be the establishment of choral programs for health and wellbeing. However, as we cannot be sure that the observed changes were due to the act of choral singing *per se* and not to the social aspects of being involved in a focused group intervention, further research is needed. Ideally such research would also include other psychosocial activities such as meditation, music instrumental groups or dancing to improve quality of life and feelings of wellness. Further research into the efficacy of such interventions is clearly needed to support this assertion.

In the study of different types of interventions, Forsman et al (2011) found that psychosocial activities were the most promising for treating depression in older people. The choral program has psychosocial features for addressing depression. Self efficacy and control have also increased within the choir therapy program. Building self efficacy in community dwelling older adults was found to be associated with less disability and depression (Turner, Ersek & Kemp, 2005). Accordingly, these studies indicate that psychosocial interventions are becoming increasingly recognised and recommended for their effectiveness in reducing symptoms of depression and increasing quality of life in adults from mid to later life.

Summary

These preliminary results indicate that choral therapy has more than entertainment value. It meets much deeper needs for those involving themselves in it and is significant in developing resources to face life's challenges. Choir membership generates a feeling of belonging to a group; a need all of us carry into old age. Moreover, it dispels feelings of isolation, hopelessness and lack of purpose which can mortify one's sense of self identity and sink vulnerable individuals into misery and despair as they approach old age. The potential impact of this choral research is promising for increased health and wellbeing in later life with social isolation as one of the major factors. Further research is needed for exploring the potential of group singing as an intervention for reducing social isolation and depression in later life. Furthermore, other types of psychosocial interventions such as meditation, dancing or art therapy could be compared with choir therapy to further support this research.

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NURSING HOME RESIDENTS' PERSPECTIVE OF INTRINSIC FACTORS IMPACTING ON THEIR MOBILITY, INDEPENDENCE AND TRANSFERS ON AND OFF FURNITURE

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Abstract

Background: Older people consider mobility important to their quality of life as it enhances their independence and autonomy. They also value security. There is a paucity of research, however, into nursing home residents' experiences of their mobility, transfer and dependence levels and assistance provided. Residents' perspectives of their care are important. The aim of this study was to explore residents perspectives of intrinsic factors influencing mobility dependence and how they cope with mobility loss.

Design: The study used an exploratory qualitative design.

Method: Semi-structured interviews were conducted with 15 residents receiving a high level of care within 3 long-term care facilities in Australia.

Results: Residents identified physical and psychosocial factors that impact on their mobility. Resident goals of mobility independence, along with subsequent efforts to achieve such goals, are determined by residents' values, perceptions, attitudes and motivation. Some residents apply effort to achieve their mobility goals. Many use coping strategies to deal with mobility loss, with acceptance of loss and the need for assistance being common. Notions of independence and dependence can be ambiguous and complex to unravel.

Conclusion: Residents may consciously accept mobility dependence. This can increase their feeling of safety and security and is a strategy consistent with selection, optimization and compensation theory. According to this theory, residents manage their intrinsic resources to adapt to their living environment. Staff need to understand residents' use of coping strategies as well as how to motivate residents to use their full mobility capacity. Staff support for resident mobility remains important.

Rationale

Listening to the voices of older people living in residential care may assist in better understanding the needs of older people who receive care. Research has examined residents' perspectives of their mobility and found they hold strong values and goals that support the ideas of independence and autonomy (Edwards, Courtney, & O'Reilly, 2003; Kane & Kane, 2001; Wahl, 1991). They

consider their mobility important as it provides them with freedom, choice and independence (Bourret, Bernick, Cott, & Kontos, 2002; Edwards, et al., 2003; Rush & Ouellet, 1998). Residents make great efforts to maintain their mobility (Bourret, et al., 2002), however, it has also been found that frail older adults value support and a sense of security (Edwards, et al., 2003; Kane & Kane, 2001; Wahl, 1991).

Given many residents require staff assistance to be able to move, it was considered important to explore residents' perspectives of transfers on and off furniture and the assistance they receive. There is a paucity of such research. The aim of this study was therefore to explore how residents in long-term care perceive their mobility, transfers, dependence levels, and other factors that impact on their mobility. This paper focuses on factors intrinsic to, that arise from within, the resident and how residents perceive those factors to have an influence on their mobility. Residents' perceived impact of environmental or external factors (factors extrinsic to the resident) is explored in a later paper.

Method

Sample

Purposive sampling was used to recruit participants. Inclusion criteria were that residents receive nursing home level care, live in a long-term care facility and communicate sufficiently well to participate in a meaningful and logical conversation. Residents receiving a variety of assistance levels were included to allow more generalization of the findings. Residents were recruited from three long-term care facilities in Melbourne, Australia.

Ethical considerations

Formal ethics approval was obtained from the Monash University Human Research Ethics Committee for the study. Facilities received explanatory statements and provided written consent for access to residents and their data. Residents were invited to participate, provided with written and verbal explanations about the research and were assured of confidentiality. Participants provided written consent to be interviewed, audiotaped and for relevant data to be collected from their medical history.

Procedure

Semi-structured interviews were employed in this study as institutionalised older people have been found to provide short responses to open-ended questions (Atwal & Caldwell, 2005; Chen, 2010). Time was taken to ensure residents were comfortable with being interviewed and recorded. The interviews were conducted in a private place of the resident's choice. A prepared question schedule, informed by questions used in similar studies (Bourret, et al., 2002; Rush & Ouellet, 1998), was developed by the first author. Questions focussed on eliciting information about the resident's level of independence, mobility, assistance received, equipment used during transfers and experiences with physiotherapy. The interviews lasted from 7 to 48 minutes, averaging 16 minutes.

Data Analysis

The interviews were transcribed verbatim and analysed using qualitative thematic analysis. They were read as a whole and then phrases were coded. Both inductive and deductive analyses were used. Deductive analysis was implicit in content categories being suggested in questions. Inductive analyses were used when analysing data. Units of content were assigned to categories during open coding. Emerging patterns and themes were identified. Analysis continued using conceptual maps to assist with integration and verification of existing and developing theories. Credibility of the coding, categories and analysis was established by peer review.

Results

Participants

A total of 15 residents were interviewed. The mean age was 86 years with ages ranging from 61 to 96. Females comprised 73% of the sample. Residents were assessed as having mild to moderate cognitive impairment according to the Psychological Assessment Scale. Two residents were unable to weight bear and required the assistance of a sling hoist and two staff to transfer. One resident was able to weight bear but required a standing machine and two staff. Eight residents required staff assistance during transfers. Four residents were able to transfer without staff. Amongst those who walked, a variety of gait aids were used. Many residents had had falls at some stage.

Findings regarding residents' perceptions of intrinsic factors that impact on their mobility were categorized as physical and psychosocial. Physical factors were: age, health and falls history; and movement capacity and function. Psychosocial factors were grouped as: independence and dependence; coping strategies; motivation; and contentedness.

Physical factors

Age, health and falls history

Many residents saw age as a limiting factor to their function and described the impact of pain and health issues on their mobility. Residents suffered a variety of disabilities that could impact on their mobility. Co-morbidities were common and could increase the impact of residents' health on their mobility. Residents understood the importance of safety issues such as gaining their balance before moving. Many had experienced falls and understood that significant physical consequences such as fractures could occur with falls.

Movement capacity and function

Residents understood their mobility capacity, functional abilities and limitations and believed they were moving as best they could. In the main, dependence levels described by residents matched the designation of their mobility and dependence levels provided by staff. References by residents to mobility were mostly to do

with their function within the environment. Some saw the importance of more conventional exercise and its relevance to their functional needs.

Psychosocial factors

Independence and dependence

Residents valued mobility and often had independence as a goal that motivated them to move. However, residents also valued the safety and security provided by staff assistance. In some cases, residents were prepared to forgo control of their functional independence and deferred “proxy control” of their mobility to staff. Consistent with selection, optimization and compensation theory, other goals were taking a higher priority and greater mobility dependence than necessary was being accepted.

Independence and dependence are difficult notions to define. Residents’ responses at times, indicated a degree of ambiguity as to their perceived level of dependence or independence demonstrating the possibility of residents having a sense of independence despite the provision of external support.

Well I can do most things as I am at the moment but I can’t look after myself. (C1)

Coping strategies

A display of acceptance by residents for their mobility losses and increased dependence was prevalent. Residents used available resources, including assistance when needed, to cope with losses. The differentiation between acceptance and resignation was often hard to determine with the word “accept” used but the sense being more one of resignation.

Have to accept it. There’s nothing else to do. (C2)

Some residents seemed to be more actively coping with their mobility losses whilst others appeared more passively resigned. Resistance to assistance or aspects of care was also evident, shown as residents’ determination to maintain control or as frustration with a loss of control.

Motivation

Some residents referred to the effort they needed to apply to maintain their mobility, though the degree of motivation and effort applied varied. Some demonstrated ingenuity and determination, finding ways to achieve their mobility goals. Others were passive, relying on external cues and prompts to motivate

them to move. Safety concerns appeared to contribute to this dependence for some residents.

Contentedness

Some residents expressed considerable satisfaction with their care whilst others expressed contentment and an awareness that they couldn't have continued to cope at home. Residents considered they were well looked after by caring staff and often expressed gratitude for assistance. Close relationships with staff were in evidence. There were, however, instances of frustration and relationship tensions with staff such as when residents had to wait for assistance or care was perceived as not meeting their needs.

Implications for policy and practice

Staff may find residents actively making efforts to be mobile, passively or purposely disinterested regarding their mobility or, readily accepting of staff assistance. Consistent with the theory of selection, optimization and compensation, resident acceptance of dependence assists them adapt to mobility losses and restructure goals away from mobility towards goals such as safety (Jopp & Smith, 2006).

Learned dependency occurs when residents passively accept dependence despite having the capacity to be more independent. Staff who provide assistance in such cases are contributing to resident mobility loss, deconditioning and possible loss of quality of life. Staff need to understand residents' use of coping strategies but also staff's role in enhancing resident mobility. This highlights the importance of staff skills in individualized and person-centred care. Interacting attentively with residents, staff may better assist residents adapt to mobility losses whilst still optimizing their mobility. The role of staff and the environment in resident transfers needs to be further examined.

Summary

Residents' values, perceptions, beliefs and attitudes influence how they cope with mobility loss and whether they are motivated to move. Staff need to be attuned to how these intrinsic factors influence residents' acceptance of dependence, especially when it is physically unwarranted. Goals for staff are to help residents make informed choices, to respect their choices, and to encourage and optimize resident mobility through the use of mobility enhancing strategies.

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THE IMPACT OF SELF-EFFICACY ON ASTHMA MANAGEMENT AMONGST OLDER AUSTRALIAN ADULTS

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Abstract

Rationale: Australian asthma rates are high by international standards causing greatest mortality amongst older adults.

This paper looks at the relationships between perceived self-efficacy (belief in oneself) to manage the physical discomfort or pain caused by asthma and also the emotional distress caused by asthma and: reported health status; asthma quality of life for both mood and breathlessness; asthma management practices; and emergency health care use for asthma in adults aged 55 years and over.

Methods: A 20 page survey exploring the health beliefs, behaviours and attitudes of older Australians, was mailed to 9,000 people, (response rate = 46.8%). Participants were recruited through a random sample obtained from the Australian Electoral Roll Office.

Results: Correlations show that people who reported high physical or emotional self-efficacy were more likely to report better health and quality of life. They were less likely to report that asthma had interfered with their day-to-day activities or that they had utilised emergency health care for asthma. Regular asthma reviews with their general practitioner, owning an asthma action plan, having received asthma education and regularly monitoring asthma control did not appear to be related to self-efficacy.

Summary: These results indicate that neither physical nor emotional self-efficacy are significantly correlated with popular asthma self-management strategies. However, both physical and emotional self-efficacy were significantly correlated with health rating, quality of life for breathlessness and mood and the impact of asthma on their day-to-day activities. Factors that increase older adults' asthma self-efficacy need to be further investigated.

Rationale

Asthma is a disease of the airways characterised by wheezing, breathlessness, chest tightness and persistent cough (Australian Institute of Health and Welfare, 2006). It is caused by chronic inflammation of the airways which can be triggered by allergens and irritants. Australian asthma rates are high by international standards, surpassed only by those in New Zealand and the UK (Masoli, Fabian, Holt, & Beasley, 2004). Approximately 10% of people in Australia (over two million people) having an asthma diagnosis (Australian Institute of Health and Welfare, 2010).

While asthma is often thought of as a childhood disease, it can develop during the adult years and causes greatest mortality amongst older adults (Comino, 2010). While the number of asthma related deaths has decreased by over one-third in the last decade, over three-quarter of asthma deaths still occur in people aged over sixty (Comino, 2010). The management and diagnosis of asthma in older adults is complicated by the ageing process which is frequently accompanied by cognitive and physical decline (Jones et al., 2011). Primarily, breathlessness is often seen as a normal sign of ageing and its effects are not perceived as severely as in younger populations (Barnard, Pond, & Usherwood, 2005). Secondly, the development of co-morbidities complicates both the diagnosis and management of asthma with disease symptoms often being similar to those of other chronic diseases, particularly chronic obstructive pulmonary disease (COPD), and the potential complication of adverse drug interactions (King & Hanania, 2010).

Currently there is no cure for asthma, however, symptoms can be effectively managed to reduce morbidity and increase quality of life (Baptist, Deol, Reddy, Nelson, & Clark, 2010). In Australia, asthma management is generally achieved through a combination of medication and patient education. The Asthma Cycle of Care is promoted as the optimal management approach for people, with moderate to severe asthma, to manage their disease in collaboration with their GP. It includes regular visits to the GP, provision of an asthma action plan and asthma education. The effectiveness of asthma self-management is dependent upon: the person's physical and cognitive ability; their desire to manage their disease; and their attitudes and beliefs around asthma and their medications (Goeman & Douglass, 2007).

Little is known about the effectiveness of current management approaches amongst older adults, as this population is routinely excluded from large scale asthma studies and clinical trials (Stupka & deShazo, 2009).

This paper looks at the relationships between perceived asthma self-efficacy and reported health status; asthma quality of life for both mood and breathlessness; asthma management practices; and emergency health care use for asthma in adults aged 55 years and over. This age bracket was chosen as the 55-69 years age range often represents the years where daily routine changes, due to retirement, but a person's health has not yet started to deteriorate dramatically (Australian Institute of Health and Welfare, 2010). Intervening at this point is essential in terms of the preventative healthcare approach in order to ensure that people are provided with the necessary education, skills and resources to manage their condition before it causes deterioration in their health and wellbeing.

Methods

A 20 page survey exploring the health beliefs, behaviours and attitudes of older Australians was developed based on the literature around older adults, asthma and asthma self-management. The tool was initially reviewed by asthma experts

for content validity. Cognitive interviews, in the form of think-alouds, were conducted with 13 people obtained through convenience sampling. As a result of this process changes to the order of the questions, response scales and survey binding were made. The survey was subsequently piloted with a convenience sample ($n=118$) obtained through community groups and on public transport. Initial analysis resulted in further question refinement and the final survey totalled 79 questions over 20 pages. The survey utilised the breathlessness and mood sub-scales from the Sydney Asthma Quality of Life Scale (Marks, Dunn, & Woolcock, 1992) and two questions taken from the Self-Efficacy for Managing Chronic Disease 6-Item Scale (Lorig, 2001).

The survey was mailed out to 9,000 adults aged 55 years and over, across three regions of NSW; Cunningham and Throsby (the Illawarra), Hunter and Newcastle (Newcastle), and Farrer and Riverina (Wagga-Wagga and Broken Hill). Participants were recruited through a random sample obtained from the Australian Electoral Roll Office, based on their age, gender and area of residence. An amended version of Dillman's tailored design method was used in order to maximise response rates (Dillman, 2000). The initial survey package included a letter of invite, a survey and a reply paid envelope. The surveys were coded and a research assistant kept track of the surveys that were returned. A reminder postcard was sent to non-responders once the initial influx of completed surveys subsided. Approximately four weeks later another survey package was sent to people that had not responded.

Results to date

A response rate of nearly 46.8% was achieved, with women being slightly over represented (54.8%). Nearly one in five respondents (17.6%) had been told by a health professional that they had asthma. People from culturally and linguistically diverse backgrounds (CALD) comprised 6.3% of the sample and 1.1% of respondents identified as Aboriginal or Torres Strait Islander.

From the surveys received, 466 (11%) people had been told by a health professional that they had asthma AND reported symptoms of, or treatment for, asthma in the last 12 months. Subsequent data analysis focussed on this subset of respondents with "current asthma".

Analysis using Pearson's Correlations show that people reporting high asthma self-efficacy for either managing the physical discomfort and pain of asthma or for managing the emotional distress caused by asthma were more likely to: rate their health highly (variable reverse coded) and report that asthma had minimum impact on their day-to-day activities (variable reverse coded). The quality of life sub-scales for breathlessness and mood were both significantly positively correlated with the two self-efficacy indicators, signifying that high self-efficacy was more likely to occur with high quality of life (table 1).

Point-biserial correlations were conducted on the data looking at health service use and asthma management as these data were categorical. The asthma management questions were all scored one for “yes” and two for “no”. Responses coded as “don’t know” or “other” were discarded for these analyses.

People reporting high self-efficacy were significantly less likely to have accessed emergency primary health care, presented at the Emergency Department or been hospitalised for asthma in the previous 12 months (table 1). However, asthma education, regular GP reviews of asthma, owning an asthma action plan and monitoring asthma control (behaviours promoted by the Asthma Cycle of Care) did not appear to be significantly correlated with self-efficacy (table 1).

Table 1: Correlations between self-efficacy and the impact and management of asthma

	Self efficacy - physical discomfort or pain	Self efficacy - emotional distress
Self efficacy - physical discomfort or pain		.792**
Self efficacy - emotional distress	.792**	
Asthma Impact		
Health rating	.365 ^{1**}	.406 ^{1**}
QoL - Breathlessness	-.391**	-.390**
QoL - Mood	-.372**	-.408**
Interfered with day-to-day activities	.405 ^{1**}	.418 ^{1**}
Health Service Use in Previous 12 months		
Urgent GP visit about asthma	.245**	.269**
ED visit about asthma	.151**	.119**
Hospital admission for asthma	.161**	.158**
Asthma Management		
Regular asthma review with GP	.016	.033
Asthma education	-.056	-.050
Asthma action plan	-.041	-.022
Monitor asthma control	.036	.043

Note: n ranged between 415 - 461 due to missing data

* p < .05 (1-tailed); ** p < .01 (1-tailed)

¹Scales reverse coded

Implications for policy and practice

Discovering the factors that are associated with increased self-efficacy has the potential to improve health outcomes for people with asthma. In real terms this is likely to result in health care cost savings.

Summary

The results indicate that neither physical nor emotional self-efficacy are significantly correlated with standard asthma self-management strategies.

However, significant correlations were found between both physical and emotional self-efficacy and the outcome factors measured: health rating, quality of life for both breathlessness and mood and the impact of asthma on their day-to-day activities. Therefore, factors that increase older adults' asthma self-efficacy, potentially improving their perceived health and quality of life, need to be further investigated. The discovery of such factors has the potential to improve the quality of life experienced by older adults with asthma and could be leveraged by primary health care practitioners and asthma self-management education channels.

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COMBINING THE HEALTH BELIEF MODEL AND SOCIAL MARKETING TO DEVELOP A COMMUNITY-LEVEL CAMPAIGN ABOUT ASTHMA FOR OLDER ADULTS

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Abstract

This conceptual paper provides a rationale for combining health behaviour theory with a social marketing framework in order to develop a community-level asthma campaign for adults aged 55 years and older. The prevalence of asthma in older adults in Australia is approximately 10%, higher than in many other countries, and asthma mortality increases with age. In addition, older adults' perceptions of asthma causes and treatments are often inaccurate. Many older adults believe that asthma is a childhood disease and that the effects of the condition are relatively minor and would not impact on daily life. In order to address these misperceptions, it is useful to utilise the constructs of the Health Belief Model in conjunction with a framework for the development and implementation of a health promotion effort. The social marketing framework is directly aligned with the most successful methods of promoting health to older adults; tailoring health messages (promotion) to individuals and the community that they are living in, actively involving the older adults themselves to understand their health beliefs and behaviours, empowering individuals by reducing barriers to action (price), enabling individuals to take control of their health (product) through increased knowledge, and ensuring ease of access (place) to health messages and promotional activities. The segment of the population aged 55 years and over not only has a demonstrated need for asthma awareness but also has been largely ignored by past asthma awareness activities. To extend the efforts of previous health promotion efforts, a campaign must be developed, implemented and evaluated to specifically target older adults about asthma to address their low perceived susceptibility to, and severity of, the condition. This paper presents a conceptual framework for the application of the Health Belief Model and social marketing theory to influence the asthma perceptions of older adults.

Introduction

Asthma is a chronic disease characterised by the inflammation of the airways; it affects over 2 million Australians (Australian Centre for Asthma Monitoring, 2008). The inflammation associated with asthma causes recurring episodes of breathlessness, coughing, chest tightness, and wheezing, predominantly at night or in the early morning (National Asthma Council Australia, 2006). These episodes

are typically coupled with airflow obstruction, the narrowing of airways, which can be alleviated either spontaneously or with treatment.

Compared to international levels, the prevalence of asthma in individuals aged 55 years and over in Australia is very high, with approximately 10% of Australian older adults affected (Australian Centre for Asthma Monitoring, 2008). While the prevalence of asthma has steadily decreased in children and young adults over the past decade, prevalence in older adults has remained unchanged (Australian Institute of Health and Welfare, 2010). Contrary to perceptions held in the community, asthma can develop in older adults (Adams & Ruffin, 2005). The overall asthma mortality rate due to asthma has decreased by almost 70% since 1989, which might be attributed to health promotion efforts directed largely at children and their parents and caregivers (Australian Centre for Asthma Monitoring, 2008). In 2006, 402 deaths were attributed to asthma, and 92% of those people were aged over 45 years (Australian Institute of Health and Welfare, 2010). Despite this large decline in mortality, the current mortality rate for older adults in Australia of around 8 deaths in 100,000 people is higher than international rates; and the risk of dying from asthma increases with age.

The literature demonstrates that asthma is under-diagnosed, often misdiagnosed, and undertreated in the older adult population both in Australia (Gibson, McDonald, & Marks, 2010; Marks & Poulos, 2005; Wilson, Appleton, Adams, & Ruffin, 2001) and abroad (Braman & Hanania, 2007; Isoaho, Puolijoki, Huhti, Kivelä, & Tala, 1994; Quadrelli & Roncoroni, 2001; Stupka & deShazo, 2009). In the past, asthma-related health promotion has been primarily aimed at children and their caregivers. However, there is a genuine need for community-focused asthma awareness campaigns targeting older adults (Barnard, Pond, & Usherwood, 2005).

Social Marketing Strategies for Health Promotion

Social marketing is “the systematic application of marketing, alongside other concepts and techniques, to achieve specific behavioural goals, for a social good” (French & Blair-Stevens, 2007). Governments and health organisations regularly utilise aspects of social marketing strategies to convey health messages to mass audiences. The National Social Marketing Centre has produced a set of best-practice, benchmark criteria for social marketing (French & Blair-Stevens, 2007). These criteria are customer orientation, behaviour, theory, insight, exchange, competition, segmentation, and methods mix and each must be present and properly addressed in a social marketing effort for maximum impact and effectiveness. Table 1 presents a brief description of these eight criteria.

Table 1. The eight benchmark criteria of social marketing (French & Blair-Stevens, 2007)

Criteria	Description
Consumer Orientation	Entire process from planning to formative research and implementation to evaluation must be consumer-focused. Every aspect must relate to the evidence-based needs and wants of the target audience; consumers must be involved in each step of the process to ensure a satisfying exchange.
Insight	Necessary to understand the beliefs and motivations of consumers; this insight is gained through planned, regular interactions with the target audience.
Theory	Intervention should be informed by behavioural theory; especially theory that takes account of physical, psychological, social, and environmental factors.
Behaviour	Clear focus on a specified behaviour change target within any social marketing intervention, with specific and measurable behavioural goals.
Exchange	Costs and benefits of behaviour change in the target audience must be well understood from the consumers' perspective to ensure the greatest personal benefits can be gained from the least personal cost.
Competition	Behaviours and services that compete with the specified behaviours for the target audiences' time and attention must be understood and addressed.
Methods Mix	Range of methods should be adopted, avoiding reliance on a single approach; operationally, the marketing mix (or "4Ps"; product, price, place & promotion) is utilised to form an integrated marketing strategy.
Segmentation	Important to avoid "blanket" approaches; rather, segmentation should group audiences on relevant personal characteristics, past behaviours, and/or benefits sought in order to identify a viable target audience. Psycho-graphic data are often used to define and understand target groups.

Social marketing techniques have been used effectively in public health interventions (Lefebvre & Flora, 1988). Further, social marketing can and should be positioned as a planning process for health education (Neiger, Thackeray, Barnes, & McKenzie, 2003). Systematic reviews of general social marketing effectiveness have found that social marketing interventions can be effective specifically in improving health across a variety of health behaviours and target

groups (Gordon, McDermott, Stead, & Angus, 2006; Stead, Gordon, Angus, & McDermott, 2006).

Promoting Health to Older Adults

As people are living longer and the population is ageing, it is imperative to direct more preventative and health promotion messages to older adults. A recent overview of evaluated health promotion programs for older adults emphasised that the aging population has increased the demand for health promotion, particularly about chronic disease, and stressed that program effectiveness must be assessed for the benefit of future efforts (Bryant, Altpeter, & Whitelaw, 2006).

The factors that influence the success of health behaviour change among older Australians were highlighted in a recent review (National Ageing Research Institute, 2004). The report concluded that health behaviours can be changed by empowering older individuals through the provision of appropriate information and communication. Similar conclusions have come from abroad. A report commissioned by the government of Wales found that the literature had recurring themes surrounding age and heterogeneity; older people should be able to benefit from health promotion activities regardless of their age, and that interventions are most effective when they are tailored to specific needs (Windle et al., 2003). Further, initiatives should empower and enable older persons through raised awareness and knowledge of a health issue. Finally, the review found that health information can be effectively communicated to older people through health professionals. In the European Union, researchers developed guidelines by appraising over 30 relevant health promotion projects aimed at older adults (Lis, Reichert, Cosack, Billings, & Brown, 2008). The proposed recommendations are consistent with key elements of the social marketing framework including involving all important stakeholders in planning and implementation, reaching target groups through the use of “key persons”, actively involving the target group, and ensuring ease of access to promotional activities. In addition, the report encouraged the empowerment of older people to motivate them to take responsibility for their own health and well-being.

Various studies have examined community-based health awareness programs for older adults in relation to different health conditions including diabetes (Gallivan, Lising, Ammary, & Greenberg, 2007), heart disease (Wayman, Long, Ruoff, Temple, & Taubenheim, 2008), breast cancer (McCormack Brown et al., 2000), cardiovascular health (Chambers et al., 2005) and hypertension (Petrella, Speechley, Kleinstiver, & Ruddy, 2005). However, there has been little effort directed towards promoting asthma awareness to older adults, even though individuals can develop asthma in older age. This lack of asthma awareness efforts targeting older people may be due to a community perception that asthma is a childhood disease (Andrews & Jones, 2009). In order to produce and maintain significant health behaviour change within communities, health promotion efforts must have some theoretical foundation (Glanz, Rimer, & Lewis, 2002). The

combination of the social marketing framework and the Health Belief Model (Rosenstock, 1974) would provide a solid foundation for an asthma awareness campaign targeting adults aged 55 years and over.

The Health Belief Model (HBM)

The HBM is a value expectancy theory designed to predict health behaviours (Rosenstock, 1974). The model consists of five key constructs: individual perceptions of susceptibility, severity, barriers to action, benefits of action, and self-efficacy (Rosenstock, Strecher, & Becker, 1994). In addition, the model addresses cues to action, and notes the impact of demographic and socio-psychological factors. The expectations of an individual can be determined from the combined perceptions of barriers to, benefits of, and self-efficacy in undertaking the recommended health behaviours. The perceived threat experienced by an individual is established by their perceived susceptibility to and severity of a particular condition. These factors all contribute to the likelihood of an individual engaging in behaviour to reduce the threat of an illness based on their expectations (Rosenstock, et al., 1994).

The constructs of the HBM have been rigorously and repeatedly tested over the past five decades (Janz, Champion, & Strecher, 2002). The common sense constructs are easy to apply to a wide-range of health conditions and behaviours, and can predict the likelihood of behaviour to a certain extent (Taylor et al., 2006). However, as the constructs are common sense and broadly defined, the HBM could be seen as an over-simplified representation of health behaviour. The model is one of the most widely researched in the health behaviour field, and has established utility in making testable predictions about specific health behaviours (Taylor, et al., 2006).

Integrating social marketing and the HBM

The combination of psychological theory and social marketing techniques can lead to innovative and effective campaigns (Gallivan, et al., 2007). Specifically, a recent study argued that the components of the HBM can be integrated into a social marketing campaign to better understand the beliefs and behaviours of the target audience (Andrews & Jones, 2009). This key qualitative study analysed the asthma perceptions of older adults in terms of HBM constructs and the social marketing mix of product, price, place and promotion, providing a foundation for the current research. Older adults perceived that asthma was not very serious and that it would not impact their daily activities. Their perceived susceptibility was low; they believed that asthma was a childhood disease and that any respiratory difficulties they may have would be a normal sign of ageing. Barriers to action centred on their lack of understanding about asthma. There were no clear benefits expressed by the sample regarding seeking diagnosis and treatment. Cues to action for the older adults were media campaigns, and advice from GPs, pharmacists and credible health organisations. In addition, a marketing mix summary highlighted the key role of GPs and pharmacists in terms of place, price, and promoting the product of asthma knowledge.

Figure 1 depicts a conceptual framework illustrating the influence of social marketing on the constructs of the HBM in relation to health promotion to older adults.

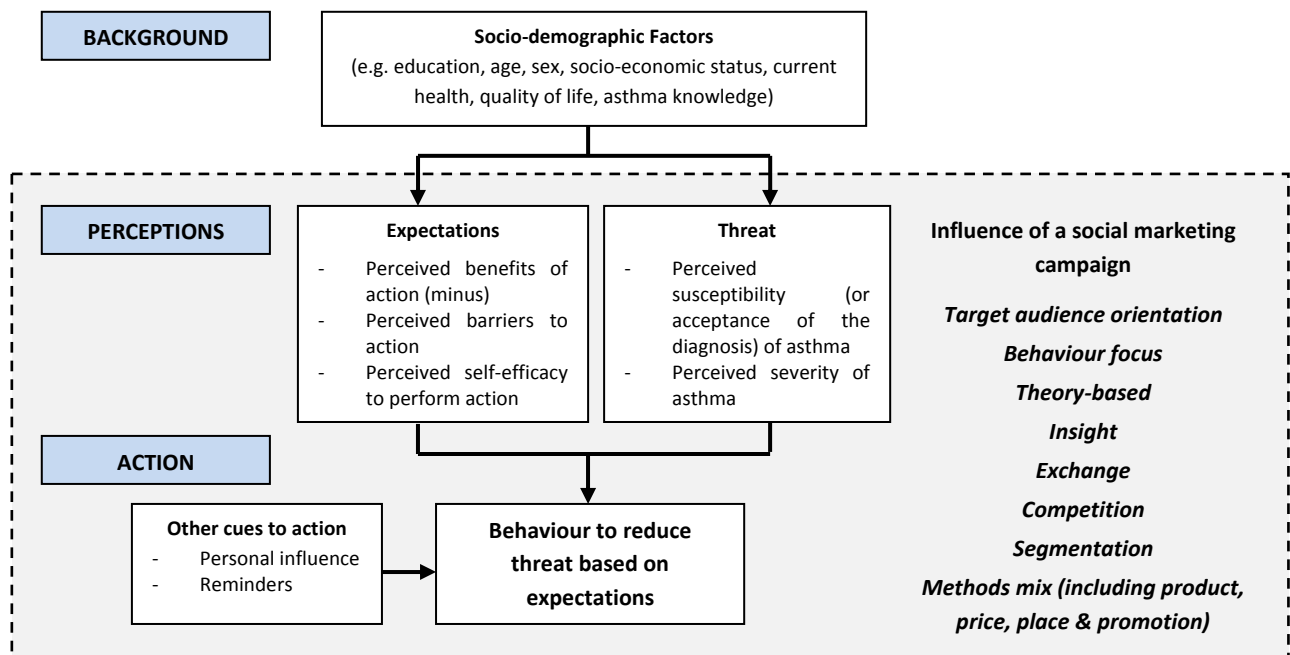


Figure 1. A conceptual framework for the application of the HBM constructs (Rosenstock, et al., 1994) and social marketing (French & Blair-Stevens, 2007) to asthma and older adults.

The individual asthma perceptions of older adults in relation to their perceived susceptibility to developing asthma and perceived severity of the disease need to be understood and quantified. These perceptions, together with the socio-demographic factors of current health, respiratory symptoms, health-related quality of life, and asthma knowledge, develop into a perceived threat and expectations about the recommended action. Social marketing influences both individual and community perceptions, and subsequent behaviour. The likelihood of older adults in the target group following recommended health behaviours is affected by this perceived threat, and their expectations about the outcomes of following the health advice promoted by the campaign. This conceptual framework will be developed into a model which may be used to understand the likelihood of older adults carrying out the proposed asthma-related action.

Conclusion

Community-level health promotion interventions can benefit from utilising the social marketing framework in conjunction with the constructs of the HBM. This combination allows health promoters to gain a deep understanding of their target audience's perceptions and beliefs, enabling real behaviour change to occur. Future research should extend the efforts of previous social marketing campaigns

about asthma (Bauman et al., 1993; Comino et al., 1995) to specifically target older adults, a segment of the population that has relatively high levels of mortality, but has received few education interventions. This paper builds upon previous qualitative research that combined psychological theory with a social marketing framework (Andrews & Jones, 2009) to examine the asthma beliefs of older adults. The refinement of the conceptual framework about older adults' asthma perceptions, the effects of a targeted social marketing intervention, and subsequent asthma beliefs and health behaviours will make the real contribution to this field of research.

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ASSESSMENT AND MANAGEMENT OF PAIN IN OLDER PEOPLE WITHIN ACUTE CARE BY REGISTERED NURSES, HOW CLOSE TO PRACTICE IS AN ALGORITHMIC APPROACH: RESULTS OF A PILOT STUDY

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Abstract

The aim of this pilot study is to map a prototype algorithm with the real time clinical practice of registered nurses (RN's) in acute care whilst assessing and managing pain in older people. The research question being 'How close to practice is a prototype algorithm for the assessment and management of pain in older people in acute care?' The methods used are a qualitative descriptive approach using ethnographic techniques of semi participant observation, semi structured interview and use of the prototype algorithm as a checklist template. A critical review of the literature was also undertaken to place the results gained in a wider context. Although no conclusions may be draw from the study due to the small sample size, the findings of the pilot study and the critical literature review are suggestive that a RNs assessment of pain in older people is conducted in an unsystematic manner and is not a priority. The ability of the RNs to successfully implement adequate pain management based on pharmacological interventions was lacking. The significance of the pilot study is that a method has been devised in order to expand insight into the culture and environment within acute care about how nurses assess and manage pain in older people.

Rationale

To date there is no specific evidence based (EB) clinical guideline available for the assessment and management of pain in older people within the acute care setting (Harmon, Higgins, Summons, & Bellchambers, 2010). As part of the development of EB practice interventions, the clinical context requires inclusion for formation of evidence, in particular determination is required of the extent and existence of any problems (Galsziou, Ogrinc, & Goodman, 2011; Poolman, Verheyen, Kerkhoffs, Bhandari, & Schanemann, 2009). Current consensus based guidelines for pain assessment and management do not take into account the reality of the environment, context and culture within acute care and this pilot study is the starting point for gaining the best available evidence.(Hadjistavropoulos, et al., 2007; Herr, Bjoro, Steffensmeier, & Rakel, 2006; Poolman, et al., 2009) Before the prototype algorithm can be audited or implemented, this pilot study was devised to determine whether it is congruent with clinical nursing practice.

An algorithm provides a logical sequence, which can be followed in a stepwise manner to supplement and avoid decision making based on a cognitive bias of a personal interpretation of how a patient looks or acts in regards to pain (Coker, et

al., 2010; Idvall, Berg, Unosson, & Brudin, 2005; Jablonski, DuPen, & Ersek, 2011). An algorithmic approach can be used to supplement teaching to novice or transitional clinical nurses as different levels of clinical competence have predictive biases of cognitive error (Baumann, Lewis, & Gutterman, 2007; Benner, 1984; Croskerry, 2003 a, 2003 b). The prototype pain assessment and management algorithm was derived from a draft consensus practice guideline produced by the Hunter New England Area Health (HNEAH), Integrated Pain Service (IPS) (Higgins, et al., 2009; Phelan, Hodson, & Douglas, 2009).

Literature review

A systematic search of literature in CINAHL was conducted in March 2011. Searches were conducted by 'free text searching', 'MESH' terms (where supported) and 'subject headings using boolean operators of 'pain, assessment, management, acute care, and older people'. The search strategy was extended to include adults due to a paucity of ethnographic research, specific for older people, within acute care. The date range for the search strategy was 2011 to 1996. A total of 559 articles were initially perceived as being relevant see figure 1. After a manual selection the number of articles were reduced to 95 that were fully evaluated, of which 82 were excluded as the methods used were not ethnographic. Opportunistic searching within the references resulted in an addition of two more studies for inclusion; the total number of articles reviewed was 15 (Albarran, Clarke, & Crawford, 2007; Bowman, 1997; Brown & McCormack, 2006; Closs & Briggs, 2002; Dihle, Bjälseth, & Helseth, 2006; Esson, 2007; Idvall, Bergqvist, Silverhjelms, & Unosson, 2008; Joelsson, Olsson, & Jakobsson, 2010; Kim, Schwartz-Barcott, Tracy, Forthine, & Sjoström, 2005; Manfredi, Breuer, Meier, & Libow, 2003; Manias, Botti, & Bucknall, 2006; Manias, Bucknall, & Botti, 2005; Manias & Williams, 2007; Rejeh & Vaismoradi, 2010; Rustoen, Gaardsrud, Leegaard, & Wahl, 2009; Spilsbury, et al., 2007). The method used for appraisal was a thematic descriptive textual analysis (Grbich, 2004; Russell, 2004; Speziale, 2007; Walby, 2008; Wolf, 2007). This data analysis was based on the use of matrices in order to facilitate thematic analysis (Georgiou & Carspecken, 2002; King & Horrocks, 2010; Liehr & LoBiondo-Wood, 2006).

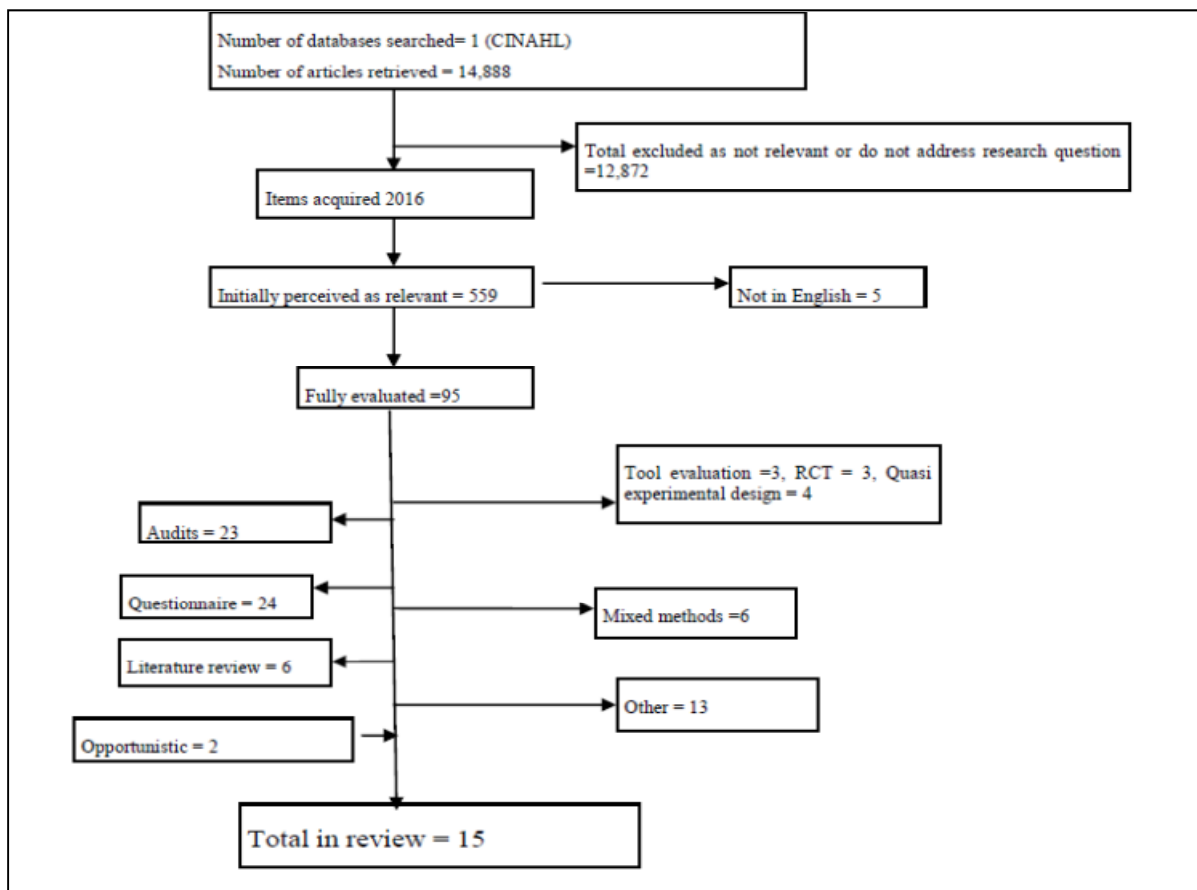
A thematic presentation of the content of the articles outlined the main themes for patients as being: a fear of moving due to the level of pain being experienced; not viewing nurses as providers of pain management; and that nurses are inflexible and authoritarian (Albarran, et al., 2007; Bowman, 1997; Closs & Briggs, 2002; Idvall, et al., 2008; Joelsson, et al., 2010; Rustoen, et al., 2009; Spilsbury, et al., 2007). Whereas the main themes for nurses are that: pain assessment is not a priority; a lack of implementation of theoretical pharmacological knowledge; and prioritisation of functional task completion, which they are accountable for (Brown & McCormack, 2006; Dihle, et al., 2006; Kim, et al., 2005; Manias, et al., 2006; Manias, et al., 2005; Manias & Williams, 2007). The acute care environment did not provide the patients with the sense of being treated as an individual and they felt that they lacked empathetic interactions with the nurses (Closs & Briggs,

2002; Rejeh & Vaismoradi, 2010). In acute care, nurses are viewed as sources of information, felt they lacked time and have no guidelines to base their pain assessment and management practices on (Dihle, et al., 2006; Idvall, et al., 2008; Rustoen, et al., 2009). The point of the literature review is to allow placement of the findings from the pilot study within the current available evidence.

Method and design

The design of the research study is qualitative descriptive. The methods used were semi-participant observation, semi-structured interviews, and use of the prototype algorithm as a checklist template. The descriptive data gained was thematically mapped against the prototype algorithm by convergence coding. The study is located in a large tertiary referral hospital in NSW, Australia - each participant is an RN who has more than two years current clinical experience. The sampling strategy used to gain participants was a combination of purposive and opportunistic. Ethical approval was gained for inclusion of patients who are cognitively intact and consent from the older person was gained by the ward nursing unit manager (NUM). In total three participants and their interactions with 15 patients located in separate medical or surgical wards were observed.

Figure 1 Outline of search strategy used for literature review.



Results

Pain assessment as a social transaction

None of the older patients initiated a pain assessment by a verbal complaint of pain to the nurses. Although the participants enquired about the patients pain status and a constant verbal exchange would ensue, which was rarely uninterrupted. The participants stated that they believed what the patients told them,

“. . . that's really the only thing that they can really tell you...”. Participant C

Only one participant was observed to use a numerical assessment tool to determine a patients' pain level. All of the participants used a type of functional task to find out what the patients' pain level was on movement, the most common used in both medical and surgical wards was an ad hoc 'get up and go test'. This is when the patient is assessed on their ability to get up and walk to the bathroom. When asked why they did not use a pain score one nurse replied:

“I could have, yep I suppose, no reason . . . it's just not the first thing that pops into my mind to score somebody's pain; for me its body language.” Participant A

When asked directly about documenting pain a reason given was the culture of the ward. They provided a differentiation between medical and surgical wards;

“So like with the surgical patients if they have had surgery- every shift you have to pain score all the time, . . . but with the medical patient, as long as they are not coming in with a lot of pain it doesn't apply as much . . .” Participant C

The use of an EBP functional task specifically designed to determine the patients' pain was used only on surgical wards. This was the ability of the patient to demonstrate a deep breath and cough. The rationale given for use of this type of functional task was that;

“That's an intrinsic part; if they can do exercises to prevent any other complications and it's an indication of how bad their pain is . . .” Participant B

Reliance on visual/verbal cues to initiate a pain assessment

All of the participants were observed to initiate a pain assessment based on a visual cue of obvious discomfort, or a verbal cue such as a moan or groan. This would serve as a prompt for the beginning of a social transaction about the origin of the cue. The participants would rely on visual/verbal cues particularly at the start of a pain assessment. With participants commenting that;

“At the start, when they first come in, it can be really hard; but when you are doing the daily activities...when you are rolling them or doing things, you can assess the pain that way.” Participant C

The participants administered pharmacological pain relief for the patients at their own convenience. In particular participants would dispense per oral scheduled drugs (a class of drug that is restricted) after visual inspection of their allocated patients at the beginning of a shift, but before any vital signs taken or any other regular medications given.

“I gave Oxycontin first as I didn’t have the pill trolley yet, so I may as well do that first . . . So that is the only reason why I gave it to him” Participant A

Participants rarely checked for efficacy of drugs given for pain relief; when checked the time varied from 15minutes to 30 or the next day.

Discussion

The results of the study and literature review are suggestive that the assessment of pain by nurses is not a priority and based on a personalised interpretation of how a patient looks or reacts. The administration of medication for management of pain was dispensed at the participants’ convenience, and this may explain the view that nurses are authoritarian and inflexible. There was no determination within the pilot study that the provision of the oral medication for pain relief had any efficacy for the patient, other than the fact that it was given. This was also identified in the literature review; the theoretical knowledge exists but is not implemented. Use of an algorithmic approach provides a cue for timely evidence based systematic assessment, and serves as a prompt for the reassessment of pain.

The use of an ad hoc functional assessment is an example of an inappropriate clinical reasoning strategy; confirmed in the literature review-, patients fear movement because of the pain experienced. The use of algorithmic approach facilitates the use of an evidence based tool for assessment of pain and removes the subjective strategy that is based on a personalised interpretation of the level of pain a person experiences after movement.

Limitations of the study

The sample size of the study is small, in total 3 participants were followed. As a result a further larger study is proposed of more wards and different locations. An ethical requirement was older people who had a cognitive impairment, delirium or inability to communicate were not to be included in the study. As part of a larger PhD study the aim will be more inclusive. The critical review of the literature only covered one database and included adults, owing in part to the paucity of studies found that focused exclusively on older patients.

Conclusion

This pilot study has developed a method for describing current clinical practice in acute care and is the basis for a larger PhD study. Although no conclusions can be drawn from such a small study, it is suggestive that using an algorithmic approach can facilitate appropriate clinical decision making for RN's within acute care about pain assessment and management in older people. A further study as part of a PhD is proposed that includes more participants and other hospital locations is proposed.

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WHO IS VOLUNTARILY SAVING FOR RETIREMENT? EVIDENCE FROM AUSTRALIAN SUPER²

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Abstract

In this paper, I study the incentive framework for additional voluntary superannuation contributions. I find that age is the single most important factor influencing voluntary contributions and that people do respond to tax incentives and retirement policy design. As well, job characteristics predict voluntary contribution participation but not levels of contribution. However, choices are bounded by financial constraints. Furthermore, results suggest that people make voluntary contribution decisions without long term planning in mind, suggesting a lack of knowledge of the design and effectiveness of the superannuation tax concessions. Future government policy should focus on improving consumer understanding and awareness through education initiatives and better information provision.

Rationale

Adequacy of retirement income is a global issue as ageing populations increase the fiscal burden of providing for the elderly in both the developed and developing world. In the wake of recent government debt crises, systems that can provide self protection in retirement financing are being placed in an even more important position.

Although Australians are better protected than most, largely due to the superannuation guarantee - a 9% compulsory employer contribution to an individual superannuation account, there is still discussion in Australia that people are not saving enough for their retirement. Current government policy includes an increase in the compulsory employer contribution rate from 9% to 12%. Even at 12%, an individual with average weekly earnings will generate 60-70% of their pre-retirement income from superannuation and the Age Pension combined only if they work continuously for 40 years (AFTS, 2009). Academics and policymakers argue that many will not save enough to fund a comfortable retirement.

Another way of increasing retirement savings is through incentives for voluntary contributions to superannuation. In Australia, these include tax concessions

² This paper is a summary of results and discussions from a longer paper and a chapter of my thesis. For details, contact the author for the full paper.

associated with salary sacrifice contributions, the government co-contribution, spouse contributions and personal contributions generally. However, only 30% make voluntary contributions, and only those employees making both salary sacrifice and post-tax contributions have contributed substantially more than 12% of their gross income (Australian Bureau of Statistics, 2007).

Unfortunately, issues associated with voluntary superannuation have been largely ignored by Australian researchers, except a survey study on government co-contribution (AIST, 2008). Little is known about who are making voluntary contributions (both salary sacrifice and after-tax personal contributions), how much they are contributing and why they are contributing. Understanding individual behaviour in voluntary contributions is critical for the design of effective policies that will encourage more voluntary savings, therefore improving the adequacy of retirement incomes.

Studies that have looked at participation and contribution decisions in similar programs in the US and UK find that personal attributes such as age, level of education, income and job tenure are the main predictors of participation and contribution (e.g. Guariglia & Markose, 2000; Springstead & Wilson, 2000), and that tax incentives and payroll deduction are important determinants of saving decisions (Poterba, Venti, & Wise, 1995). While these results can help to better understand the motivation for voluntary savings, they are hard to apply directly to the Australian context because of international differences in tax schemes and the unique compulsory savings arrangement in Australia.

This paper fills in this gap by examining the participation and savings decisions of employees through voluntary superannuation contributions. The characteristics of employees who are making either or both salary sacrifice and after-tax contributions as well as the incentives to make voluntary contributions are examined. The results can assist the government to better design the superannuation system to facilitate greater savings for old age.

Method and Results

The salary sacrifice and after-tax personal contributions are examined in terms of whether an employee makes either or both types of contributions (participation) and the level of contribution (contribution). The level of contribution and the number of people contributing are equally important since a rise in the number of people contributing to the system could substantially increase aggregate contributions. The study utilizes employee data from 2007 Survey of Employment Arrangements, Retirement and Superannuation (Australian Bureau of Statistics, 2007). Participation is modelled using a bivariate probit while the contribution level is modelled separately for salary sacrifice and after-tax personal contributions by OLS.

Four sets of characteristics are examined to assess their impact on the likelihood of participation (i.e. making voluntary employee contributions) and the level of contributions made by employees. The estimation results for participation and contribution decisions are presented in Table 1 and Table 2.

The first set of characteristics is personal attributes. Following US research, age, education and other personal characteristics are examined. Both the participation and contribution level regressions found age of employee to be significant, irrespective of the type of voluntary contributions made. This is consistent with findings of similar studies in other countries. Education is found to influence the level of contribution but is not an important factor in participation decisions. This suggests that when people do care about their retirement savings, their level of education could help to make better contribution decisions as saving through superannuation attracts better tax concession than other saving mechanisms.

The second set of features is job characteristics, which have been little studied in other countries. The results show that having a stable and secure job, reflected by working in a large firm, having a permanent job etc. can increase the likelihood of making both salary sacrifice and after-tax personal contributions. However, these job characteristics are found to encourage more after-tax personal contributions, but not more contribution through salary sacrifice. Generosity in employer contributions also lifts the probability and level of employee contributions. This may represent better employee benefits or a requirement of the superannuation plan for an increase in salary sacrifice contributions to ensure a greater employer contribution.

Next considered is individual's financial status proxied by extent of home ownership. Being a renter or having outstanding home loans was found to reduce both the probability and level of contributions for both salary sacrifice and after-tax voluntary contributions. While renters need to save for deposit for a home loan and are less likely to make voluntary contributions, those with mortgages have an ongoing and long term liability and are found to salary sacrifice 20% less compared to renters though the differences are not statistically significant.

As well as the three sets of personal characteristics discussed above, impact of income and government incentives such as tax concessions and the government co-contribution on participation and contribution levels are also assessed. Consistent with the findings in other studies, income is found to be an important factor that promotes voluntary superannuation contributions. Higher income not only increases the participation in salary sacrifice but also

Table 1 Estimation results for Participation in Voluntary Contributions

Participation in	Salary Sacrifice		Personal Contribution		
	Coef.	Std. Err.	Coef.	Std. Err.	
Participation in Salary Sacrifice			-0.6411	***	0.243
Personal Attributes					
Age	0.0670	***	0.019	0.0492	***
Age ²	-0.0005	**	0.000	-0.0002	0.000
Age>55 (dummy)	0.1943	**	0.080	-0.0543	0.078
Female	0.0048		0.176	-0.1602	0.150
Has high education qualification	0.0269		0.040	-0.0347	0.036
Married	-0.0119		0.064	-0.0285	0.058
Has dependent child	-0.0494		0.047	-0.0990	**
Job Characteristics					
Work full time	0.0597		0.064	0.0047	0.055
Has multiple jobs	-0.0128		0.080	0.0165	0.073
Work in Public sector	-0.0252		0.043	0.6340	***
Work in large firms (>100 employees)	0.1286	***	0.039	0.0710	**
Is a union member	0.0386		0.040	0.1843	***
Enjoy leave entitlement	0.1213	***	0.044	0.1621	***
Employed in permanent job	0.3442	***	0.086	0.0621	0.067
Employer contributing more than 9%	0.0988	**	0.042	0.1352	***
Reached concessional limit	0.1370		0.207	0.2699	*
Has a DB or hybrid account	0.1122	***	0.039	0.2875	***
Housing Finance					
Has an outstanding home loan	-0.1638	***	0.050	-0.1456	***
Renter	-0.2168	***	0.059	-0.2128	***
Has an investment property	0.2142	***	0.072	0.0197	0.072
Has an outstanding home loan and has an investment property	-0.1924	*	0.101	0.0102	0.096
Income and Tax incentives					
Income	3.0E-04	***	7.0E-05	3.7E-05	6.6E-05
Income ²	-1.1E-08	***	3.6E-09	-4.9E-10	3.7E-09
Highest marginal tax rate faced by individual					
-30%	0.2043	*	0.109	0.0063	0.089
-42%	0.2440	*	0.134	0.0865	0.118
-47%	0.1131		0.165	0.0855	0.147
Eligibility for govt. co-contribution ^a					
-fully eligible	-0.0635		0.089	-0.0263	0.076
-ineligible	0.2582	***	0.076	0.0373	0.072
Constant	-3.9806	***	0.430	-2.5742	***
Sample	7407		χ^2 (df)	1687.53 (63)	
rho	0.2069			0.150	

Log pseudolikelihood

-7182.63

Estimation results of the probability of an employee making salary sacrifice contribution and/or personal contributions. * p<0.1, ** p<0.05, *** p<0.01.

Note: a. Refer to ATO website for eligibility income threshold for government co-contribution.

b. Income, marginal tax rate and eligibility to government co-contributions are calculated by wage and salary in Salary Sacrifice equation and total income in Personal Contributions equation.

Table 2 Estimation results for Levels of Contributions in Voluntary Contributions

Logged level of contribution	Salary Sacrifice		Personal Contribution	
	Coef.	Std. Err.	Coef.	Std. Err.
Participation in Salary Sacrifice			0.0926	0.069
Personal Attributes				
Age between 35 and 50 (dummy)	0.3658	** 0.157		
Age between 50 and 75 (dummy)	0.6343	* 0.366		
Age			0.0572	** 0.023
Age ²			-	* 0.000
Age>55 (dummy)	0.2394	*** 0.088	0.2300	** 0.100
Female	-0.1461	0.185	-0.1096	0.212
Has high education qualification	0.1245	* 0.067	0.1464	*** 0.048
Married	-0.1005	0.099	-0.1193	0.081
Has dependent child	0.0378	0.078	-0.1246	** 0.055
Job Characteristics				
Work full time	-0.3173	*** 0.122	0.0477	0.075
Has multiple jobs	-0.0983	0.146	-0.1375	0.105
Work in Public sector	0.0952	0.064	0.2948	*** 0.055
Work in large firms (>100 employees)	0.0979	* 0.058	0.1005	** 0.049
Is a union member	0.0042	0.060	-0.0839	* 0.047
Enjoy leave entitlement	-0.0145	0.069	0.1187	** 0.058
Employed in permanent job	-0.2714	0.181	-0.1188	0.092
% of empl contributions exceeding 9%	0.9932	*** 0.332	0.5832	*** 0.219
Additional concessional contribution that can be made to reach concession limit	6.4E-05	2.1E-04	-1.3E-05	7.4E-05
Has a DB or hybrid account	-0.0186	0.064	0.1330	** 0.054
Housing Finance				
Has an outstanding home loan	-0.2969	*** 0.078	-0.1998	*** 0.060
Renter	-0.2484	*** 0.094	-0.1801	** 0.070
Has an investment property	0.1530	0.107	0.0235	0.090
Has an outstanding home loan and has an investment property	0.1577	0.149	0.0517	0.118
Income and Tax incentives				

Log income	1.0290	***	0.147	0.4444	***	0.090
Income level excessive of current marginal tax rate & marginal tax at 30%	1.9E-04		1.6E-04	1.9E-04		1.6E-04
& marginal tax at 42%	-4.3E-04		2.7E-04	2.6E-05		2.7E-04
& marginal tax at 47%	-7.7E-04	**	3.8E-04	-7.8E-04	**	3.2E-04
Income level excessive of current govt. co-contribution eligibility threshold & partially eligible for co-contribution	-3.0E-04		2.1E-04	2.1E-04		1.9E-04
& ineligible for co-contribution	8.0E-04	**	3.2E-04	4.0E-04		2.7E-04
Intention to get co-contribution						
Not applicable	-0.0512		0.083			
Yes	-0.3047		0.305	0.0534		0.101
Yes & partially eligible	0.0612		0.322	-0.3580	***	0.096
Yes but ineligible	0.8073	**	0.350	-0.0717		0.144
Constant	-2.9134	***	0.945	-0.9463		0.749
Sample	1359			1936		
R ²	0.3639			0.2587		
Root MSE	1.0458			0.9552		
				9		

Estimation results of the logged levels of salary sacrifice contributions and/or personal contributions an employee made. * p<0.1, ** p<0.05, *** p<0.01

Note: a. individuals were asked whether they intended to get government co-contributions if they made after-tax personal contributions.

increases contribution levels for both salary sacrifice and after-tax personal contributions. A 1% increase in income can lift salary sacrifice and after-tax personal contribution levels by 1% and 0.44% respectively.

Tax concessions are working effectively to promote participation in salary sacrifice, however, have little impact on after-tax personal contributions. While the benefits from salary sacrificing is straight forward (that is, contributions and fund earnings are taxed at 15% rather than marginal tax rates), the tax benefit of after-tax personal contributions is not as explicit. The tax rate coefficients are all insignificant for personal contributions, suggesting that the relative tax preference for after-tax personal contributions is little understood, which needs to be addressed.

In terms of the government co-contribution, there is little evidence that it is effective. While there is some indication that people are participating more in salary sacrifice and effectively reduce taxable income to be eligible for government co-contribution, there is no tendency for those eligible to be more likely to participate in personal contribution. Among those who made personal contributions who intend to get the government co-contribution, it is not

observed that those fully eligible individuals are making more contributions, possibly because of affordability (AIST, 2008). However, for those only partially eligible, the contribution level is substantially less. Such individuals may have been lured by the co-contribution scheme.

Implications for policy and practice

The estimation results and further simulations for representative individuals (not shown here) provide a picture on the current status on voluntary contributions. A number of the key results are reported here and could prove useful for the government and policymakers to better design the superannuation system to improve personal savings for retirement.

Age is found to be an important factor that increases both participation and contribution level. Simulation on representative individuals suggests that the probability of making any type of voluntary contributions are almost twice as high for those in their 50s and 60s (around 80%) compared with those in their 20s (little above 40%). Moreover, even at young age, individuals are contributing a substantial amount if they participate (around \$30/week in 20s, little more than \$60/week in 50s). This suggests that programs targeting participation of young cohorts could greatly increase superannuation balances at retirement.

Education initiatives for the general population could also make a difference. Firstly, the lack of response to tax incentives for personal contributions suggests that superannuation fund members do not understand the tax arrangements very well. Secondly, results discussed above suggest that when people do make contributions, their level of education reflects the consciousness of the need to save for future. Thirdly, the government co-contribution scheme encourages some individuals to make personal contributions who otherwise would not. With more education (specifically targeted to improve scheme and policy knowledge), these people could be more aware of the co-contribution scheme and thus more likely to contribute.

The results provide strong evidence that people generally do respond to the current government policies designed to increase voluntary savings for retirement. People save first through their house, then through superannuation. And in doing so, they utilize all means of tax concessions, including negative gearing and salary sacrifice. When income increases, people tend to increase the amount of salary sacrifice. However, the decisions made focus more on individual's current financial position (i.e. current period tax minimisation, but not making more after-tax personal contributions) rather than a long term strategy to increase savings for retirement. Such behaviour sets an alarming signal that people have little knowledge about the purpose of the system of tax incentives. This observation also partly reflects Bassett's (1998) conclusion that many people do not use such mechanisms to save for retirement. To this end, appropriate

education is urgently needed to help people become more aware of the critical value of such savings and at the same time the superannuation system needs to ensure that tax preferred contributions are made for retirement savings purpose only.

The simulations also show the worrying results that the system seems to benefit high income earners more. Although the equity of the superannuation system is enhanced by the government co-contribution, this study uncovers little evidence that the government co-contribution scheme is working effectively. On one hand, it does show strategic savings through salary sacrifice. On the other, planned personal contributions are poorly executed due to competing plans for fund or budget constraints when contributions need to be made (Duflo, Gale, Liebman, Orszag, & Saez, 2007). Further research on this area could help identify the problem and improve the performance of such policies.

Summary

This paper looks at participation and contribution levels for voluntary superannuation contributions by employees. It attempts to identify the personal attributes that promote voluntary savings and assess the effectiveness of current policy to encourage voluntary contributions. Age, job attributes, financial constraints, income and tax incentives are the main predictors of voluntary contributions.

Overall, current superannuation tax arrangements do provide incentives for people to save for retirement, and people respond to these incentives in a positive way. However, there is still room for improvement in encouraging voluntary savings for retirement. Two measures could be taken. First and foremost, government initiatives to educate people about the importance of saving for retirement is crucial to the success of the system, with particular emphasis on programs directed at young people to improve participation among young adults. Another focus is to educate all people of working age to plan for retirement and have a long term focus.

Another initiative could be to improve the superannuation tax system by bringing retirement policies into a coherent framework to strengthen the adequacy of retirement and provide more equality between high and low income earners. Policies are also needed to ensure a stable job environment. However, to design policies that meet these goals will require further investigation of the mechanisms behind individual saving behaviour.

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OLDER PEOPLES PERSPECTIVES ON EXERCISE AFTER A FALL-RELATED LOWER LIMB FRACTURE: A SYSTEMATIC REVIEW

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Abstract

Fall-related lower limb fractures are a growing global health problem. Exercise has the potential to enhance outcomes after fracture. An understanding of people's perspectives on exercise could assist in the development and implementation of exercise interventions, as well as increasing adherence with an overall aim of improving outcome after fall-related lower limb fractures. This review aimed to systematically identify and summarise qualitative studies investigating older people's thoughts and feelings on exercise and exercise programs after a fall-related lower limb fracture in order to find out what is already known in this field. This systematic review identified major gaps in the current literature relating to how older people who have fallen and fractured their lower limb feel about exercise and exercise maintenance post fracture. Two articles resulted from the literature search. Multidisciplinary approaches as well as personal insight was found to affect attendance and adherence to falls prevention interventions. This finding highlighted the need for continued research in this field. Additional work needs to explore the motivational factors behind performing or not performing exercise, and the perceived relevance of exercise in this population.

Rationale

Hip fracture in older people remains a major health issue globally and will continue to be so whilst the incidence of hip fracture continues to increase with age (Marks 2010). In 1990, 1.66 million people globally were estimated to have had a hip fracture (Cooper, Campion & Melton, 1992), with this number estimated to dramatically increase under current management strategies (Gullberg, Johnell & Kanis, 1997; Marks, 2010; Parker & Johansen, 2006). There are many causes of hip fractures, including osteoporosis, falls, physical inactivity, and muscle weakness (Marks, 2010; Sleet, Moffett & Stevens, 2008), however, studies show a high incidence of hip fractures can be attributed to falling, with this incidence increasing as age increases (Sleet, Moffett & Stevens, 2008). Following a hip fracture, morbidity and mortality rates increase to the point where the rate of mortality within the first six months post fracture is doubled (Abrahamsen et al., 2009). There is also an increased burden on health systems, with increased length of stays, institutionalisation, and need for assistance in the home (Braithwaite, Col

& Wong 2003; Keene, Parker & Pryor, 1993). Care after fall-related lower limb fracture often involves exercise programs. These can range from individualised exercise, to specialised programs such as “Stepping On” (Clemson & Swann, 2008). Qualitative research continues to provide valuable information in relation to identification of personal issues, individual processing, social change and determinants, and human semantics (Willms et al., 1990).

The need to understand why older people do or do not do these exercises/programs is vital in improving the outcome after fall-related lower limb fractures. Our aim was to source current qualitative literature that investigated older people’s thoughts and feelings on exercise, and exercise programs, after a fall-related lower limb fracture, in order to summarise current findings in this area and to ascertain if there is need to further investigate this field.

Methods

Studies of interest were those which focused on the experience of older people who have had a fall-related lower limb fracture, and participated in exercise or an exercise program as treatment. Studies conducted in both hospital and community settings were included. A comprehensive literature search was completed utilising eight databases - Medline, CINAHL, PEDro, AMED, SPORTDiscus, Scopus, Web of Science, and PsycINFO. Search terms used were: “aged or older people or older adult or older men or older women” and “hip fracture or femoral fracture or lower limb fracture” and “accidental fall or fall” and “exercise or exercise therapy or exercise movement techniques or falls prevention program or physical education and training or exercise program” and “qualitative research or attitude to health or health behaviour or group processes or focus groups or attitude”. Each term was inclusive of truncations and was searched within text, title and keywords. Searches were completed in August 2011. All citations were exported to Endnote database, duplicates were removed, titles and abstracts were screened for eligibility and then full texts of remaining articles were obtained. Inclusion criteria were: English language (including translation from another language if available), qualitative study design, participants aged 65 years and over, and participants that had completed some form of exercise or exercise program targeting recovery from a fall-related lower limb fracture.

Results

From the searches performed, 38 articles resulted, with 2 duplicates removed. Other articles were removed as follows: 1 paper was removed as it was written in French with no available translation and 1 was a magazine article. Therefore, full texts of 34 articles were obtained. Implementing the remaining inclusion criteria, only 2 articles were within the study of interest. Twenty seven articles were not qualitative studies; 2 articles involving different population cohorts, namely medical professionals treating patients at risk of falling or those that have fallen; 1 article excluded participants if they had a hip fracture prior to the study; and 2

articles did not focus on any type of fracture, the first focused on various psychosocial factors related to older people engaging in falls prevention and the second was a systematic review that included one article that look at hip fracture however, did not relate this to exercise or an exercise program.

The two articles included were by Chardon et al. (2007) and Hallrup et al. (2009). Each considered the perceptions of older people in adhering to a particular falls prevention program. Chardon et al. (2007) explored older people's compliance, likes and dislikes in regards to a patient resource kit given to them on discharge from hospital. They concluded that in order for this older population to comply with a falls prevention program, the program must consist of a multidisciplinary approach and not solely on one modality of treatment. Hallrup et al. (2009) conducted in-depth interviews with 13 older women who had a fall-related fracture, had participated in voluntary hip fracture prevention programs, and remained at risk of falling. They found that four major categories prevailed in order to maintain falls prevention program attendance. These included issues of self perception/fragility, isolation, vulnerability, and changes in one's body awareness. Hallrup et al. (2009) concluded that without these major categories being met, that this cohort would be less likely to participate in an active lifestyle. In both studies the fracture type was not discussed in detail, other than that the participants had experienced a fracture from a fall in the past.

Implications for policy and practice

The main implication of this paper was that further research is required into older people's perceptions of exercise after a fall-related lower limb fracture. This can be supported by the results of this current review showing that only two papers were located from the literature search. As stated, falls are a major cause of lower limb fractures, especially hip fractures, and with this, both mortality and morbidity rates increase impacting both the individual and community (Abrahamsen et al., 2009; Sleet, Moffett & Stevens, 2008). There has been some research into the perceptions of older people in regards to falls prevention programs, indicating that the barriers to participation outnumber facilitators to participation (Bunn et al., 2008; Nyman 2011), however, they tend not to focus on whether or not the severity of injury, in this instance lower limb fracture, has an impact on these perceptions and ultimately on these named barriers and facilitators. Due to the occurrence of falling within the older aged population, additional work needs to be conducted to explore older people's motivation, or lack thereof, to perform exercises or to attend exercise programs and to determine their perceived relevance in compliance. Further research could focus on ascertaining the personal reasons pertaining to adherence and compliance of exercise and the maintenance of exercise long term after a fall-related lower limb fracture. The impact that further research will have on practice may include: changes to the way exercises are prescribed to this population, including whether or not the location/severity of fracture needs to be considered; adherence, compliance, and

long-term self-management in order to prevent future falls; and overall improvement in outcome after a fall-related lower limb fracture.

Summary

The rate of hip fracture in older people, predominantly caused by falling, is increasing. It is standard practice for people in this situation to be given exercises or to attend an exercise program. What are still largely un-researched is the perceptions, beliefs, and actions of these older people to the exercises prescribed, and it is these key areas, which inevitably will assist to determine adherence and level of performance. This study highlights deficits in this field of research and paves the way for future studies in this field. The outcomes of this review have informed a planned qualitative study with this high risk population.

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PHYSICAL WELLBEING OF OLDER INDONESIANS AND RELATED SOCIO-CULTURAL FACTORS

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Abstract

In the late 20th century, Indonesia started to experience ageing population. Life expectancy increased from 49 years in 1975 to 71 years in 2007.

Indonesia has limited welfare benefits. Older Indonesians' childhood and young adult years during colonial occupations and wars made educational opportunities minimal. However, within the family, men were prioritized to have education. Older persons work based in agriculture did not provide adequate income, but custom allowed older persons, mainly men, to own land and property, and have authority through accumulated experience.

I studied wellbeing of two ethnic groups of older persons, using an ethnographic approach in Lampung, Sumatra, by interviewing 651 persons aged 60 and over in six villages. My research aim was to fill a gap in research on the broader topic of ageing population in developing regions, where welfare benefit is essentially negligent. To achieve this aim I examined the physical wellbeing of older Indonesians, whether or not there are gender and ethnic differences, and related socio-cultural factors that may influence the wellbeing.

The result: there were gender and ethnic differences in wellbeing of older persons. Men were likely to have better wellbeing than women, because men had higher education and relatively better lifestyle. Another important factor was men's cultural role as head of the household. Among women, Javan-migrants were likely to have better wellbeing than Lampungese. The bilateral kinship system, in which women and men have relatively equal status, appeared to make a positive contribution to the wellbeing of Javan-migrant women.

Research questions

1. What is the physical well-being of older Indonesians?
2. Are there gender and ethnic differences in the physical well-being of older Indonesians?
3. If so, which socio-cultural factors influence the physical wellbeing of older women and men in Indonesia?
4. How do the socio-cultural factors, gender issues in particular, influence the physical wellbeing of older Indonesians?

Rationale

At the beginning of this century, population ageing, the process in which the proportion of older individuals has significantly increased, started to emerge in developing regions, including Indonesia.

The research questions arise because social scientists working in the fields of life-course and old age, mainly in developed countries, have shown that an older population was not a clearly defined single group. The older population was different according to, among others, gender, cultural background/race, class, civil status and state of health (Arber and Ginn, 1995; Sokolovsky, 2009; Stavenuiter, 1995).

Indonesia is a society in transition. Since the mid 20th century, Indonesia has undergone considerable politic and socio-economic change. However, many traditional features remain. As a country with 1,072 ethnic and sub-ethnic groups (*Badan Pusat Statistik*, 2000), examination of socio-cultural factors could shed light on how older Indonesians live. Variations in paid and unpaid work, comparison of lifestyle, differences in supportive family and social organization as well as attitude towards old age, elucidate some of the cultural influences on wellbeing of older men and women in Indonesia.

There are differences in Indonesian society's expectation of what men's and women's roles should be (Oey-Gardiner and Bianpoen, 2000; Suryakusuma, 2004) and little is known about what these roles lead to in both men's and women's lives in their later years. This knowledge is important in dealing with the new realities of increased longevity as well as women's and men's changing experiences and options.

Method

My study employed an ethnographic approach. This paper is based on a survey questioning 651 people aged 60 plus, from two ethnicities, Lampungese and Javan-migrant, in six villages in a sub-district of Lampung, Sumatra, Indonesia. Lampungese were chosen because of their patrilineal kinship system and Javan-migrant because of their bilateral kinship system.

Lampung is at the southern tip of Sumatra next to Java. In its current ethnic make-up, Lampung may be considered as an extension of Java, because 62 per cent of the population is Javan. The Javans are relatively recent migrants, arriving from 1905 onwards by transmigration program, started when Indonesia was a colony of the Dutch. The transmigration program is one of the largest population resettlement schemes in the world (Gooszen, 2000). Of all ethnic Javan-migrant respondents, three per cent were born in Lampung and the majority, 84 per cent, came to Lampung before 1980.

I had access to the area because my parents had been living in one of the villages from time to time since the mid 1980s. During my fieldwork in 2009/10, I stayed in one of the villages and conducted participant observation and recruited the respondents by visiting their houses and obtaining their consent. I conducted the interviews in local languages (Lampungese, Javanese and/or Indonesian) and was assisted by male and female research assistants who could speak two or more of the languages.

In this study physical wellbeing is health-related quality of life, measured by self-rated health, lifestyle, smoking or not, activity of daily living (ADL), activity in community and having access to state programs (health care and subsidized rice). Self-rated health has been shown to be a strong predictor of individual health (Sargent-Cox et al, 2011). Lifestyle -eating healthy diet of vegetables and fruit as well as exercise- is expected to influence wellbeing positively. Smoking is expected to influence wellbeing negatively. Whereas, ADL measures the core ability of older persons to live independently. Being active in the community and having access to state programs is expected to affect health positively.

I have employed cumulative logistic regression (Agresti, 2007) for my analysis because all the measures (dependent variables) of wellbeing are ordinal level variables. The ordinal-variable logistic regression is based on the cumulative distribution probabilities of the categories of the indicators of well-being .

Results

There were differences in the physical wellbeing of older persons and these differences had multi-layered facets (see Table 1).

Table 1. Result of cumulative logistic regression on measures of physical wellbeing (Odds ratio)

Wellbeing measures		Self-rated health	Lifestyle	Smoking	Activity of daily living	Activity in community	Access to free health care	Access to subsidized rice
1	Female:							
	1. Javan-Migrant	0.11	1.16***	-10.99***	2.60	0.23	0.24	0.27
	2. Lampungese	-0.41*	-0.12	-13.31***	0.62	0.40	0.14	-0.79**
	Male:							
	3. Javan-Migrant	0.37	1.05***	-4.60*	3.93	0.50*	0.10	-0.60
	4. Lampungese	0 ^a	0 ^a	0 ^a	0 ^a	0 ^a	0 ^a	0 ^a
	Covariates:							
2	Age	-0.41***	-0.02	-0.01	-0.21***	-0.07***	0.00	0.05***
3	Residential area:							
	Urban	-0.27	0.31	-1.34	-1.32	-0.420*	-0.43*	0.79***
	Rural	0 ^a	0 ^a	0 ^a	0 ^a	0 ^a	0 ^a	0 ^a
4	Marital status:							
	Married	-0.11	0.52*	-1.54	1.69	-0.02	0.38	0.23
	Single	0 ^a	0 ^a	0 ^a	0 ^a	0 ^a	0 ^a	0 ^a
5	Education	0.22*	0.29*	-0.06	-0.69	0.46***	-0.10	-0.53**
6	Daily income:							
	USD 1 or less	-0.32	-0.26	-1.59	-0.82	-0.68**	-0.29	1.61***
	USD 1-2	0.32	0.56*	1.323	-.617	-0.63*	-0.39	1.81***
	USD >2	0 ^a	0 ^a	0 ^a	0 ^a	0 ^a	0 ^a	0 ^a
7	Health	n/a	0.27*	-0.55	2.90***	0.41***	-0.26*	0.04

Source: The 2010 Lampung Gender and Ageing Survey

Note:

0^a = reference category

* p < 0.10

** p < 0.05

*** p < 0.001

ADL = Activity of Daily Living

The odds ratio is a measure of the change in the odds of the wellbeing measures (self-rated health, lifestyle, smoking or not, ADL, activity in community and having

access to state program) as a result of a unit change in the independent variables (gender, age, residential area, marital status, education, income and health).

The first six rows of Table 1 show gender differences on all measures of wellbeing, comparing women (Lampungese and Javan-migrant) and Javan-migrant men with Lampungese men (as the reference category).

The second column, for example, shows all men and Javan-migrant women had no significant differences in (self-rated) health, but Lampungese women rated themselves having lower level of health (-0.41*). Age very significantly influenced health negatively (-0.41***); as age increases health was likely to decrease. Education significantly influenced health positively (0.22*); the higher the education of older persons the more likely they had better health. Other variables (living in urban/rural area, marital status, income) did not show statistically significant influence on health.

The third column shows Javan-migrants men (1.05***) and women (1.16***) had significantly better lifestyle than Lampungese men. Lampungese women were likely to have similar lifestyle with Lampungese men (no statistically significant difference).

Discussion

The following discussion examines the differences in the older persons' physical wellbeing in reference to the four research questions of this study.

First, the vast majority of older persons was healthy, regularly consumed vegetables and fruit, had walks, could perform activity of daily living independently, as well as were actively involved in religious and/or social activities in their community. Nonetheless, nearly half of the older persons smoked.

Second, clearly there were gender and ethnic differences in wellbeing. Overall, men were more likely to have better wellbeing than women in many of the measures, such as health, lifestyle and involvement in community activities. However, men were much more likely to smoke, which contributed negatively to their health.

Lampungese women were more likely to be in the lowest level of wellbeing, partly the result of their lifestyle, being less physically active (having less walks) compared with the rest of the older persons.

Education appeared to be an important variable: it was positively related to health. Education was also positively linked to lifestyle, involvement in the community as well as to income. Compared with men, the perception of women's secondary role in the family contributed to their lower educational attainment,

which in turn contributed to a lower level of health. However, other factors also played a role in health, such as age, lifestyle and whether or not the older persons smoked, as well as their residential area.

Javan-migrant women indicated that they had similar levels of health with men and a higher level of health compared with Lampungese women, albeit having lower level of education. Javan-migrant women did have a better lifestyle than Lampungese women, but they were more likely to smoke. Accordingly, other factors may have played a role in the health of Javan-migrant women. One possibility was the relatively high status of Javan-migrant women within their families. Although not necessarily equal, Javan-migrants culture is inclined to regard woman and man as having complimentary function. Genetic factors may also play a role. However, this factor is beyond the scope of my thesis.

Implications for policy and practice

1. Indonesia needs to have a national health education program, such as No-Smoking programs. Cigarettes are still widely promoted, even in sports events.
2. State support in terms of programs for older persons needs to be improved. Except provision of subsidized rice for the poor, no programs were visible in Whyanda. Free health care for the poor, for example, was not accessible to the majority of poor older persons.

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SELF-PERCEPTIONS OF AGEING FROM A CROSS-CULTURAL PERSPECTIVE: DO COLLECTIVIST CULTURES PROVIDE A BUFFER FOR THE IMPACT OF NEGATIVE STEREOTYPES ABOUT AGE?

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Abstract

Previous research has shown that older adults who are under conditions of age stereotype threat tend to underperform on memory tasks. Of interest are findings of cross-cultural differences in this effect, where older adults in a more collectivist culture have been found to perform better than older adults from an individualistic culture on a recall task. The present study aims to explore the mechanisms which contribute to cross-cultural discrepancies in perceptions of the ageing self, as well as which cognitive strategies are employed to combat stereotypes about age using a mixed-methods approach. First, we will compare young (20-35 years) versus older (60-85 years) adults' attitudes and self-perceptions of ageing in individualistic (Australian) and collectivist (Philippines) cultures using a focus group design. Second, we will adopt an experimental design to investigate cultural differences in implicit stereotypes surrounding age using the Implicit Association Test. Finally, we will conduct memory tests under stereotype conditions and use a survey based approach to examine explicit perceptions and stereotypes of ageing amongst the older and younger participants in their respective culture. We hypothesise that older participants in an individualistic culture will show more negative attitudes towards ageing than those in a collectivist culture. A further hypothesis is that, due to more social inclusion and a self-identity which has greater association with the group than just the self, older participants from a collectivist culture will perform better on the memory task under stereotype threat conditions.

Rationale

The Confucian concept of filial piety is widely observed within Chinese and other East Asian cultures. Filial piety refers to the revered status and respectful treatment of older individuals, particularly those within close family circles. This social practice of revering and caring for elders has been around for centuries (Lai, 2006). Filial piety and elder respect has impacted on how individuals see older people within East Asian cultures, particularly collectivist cultures such as those present in China, Japan, Korea and the Philippines (Ponce, 1980; Markus & Kitayama, 1991; Cimmarusti, 1996; Ingersoll-Dayton & Saengtienchai, 1999; Sung, 2001). In the Philippines, the tradition of honouring one's elders is a pervasive social norm which is commonly referred to as 'Paggalang' (Tagalog for 'respect')

or 'reverence'). The Filipino tradition of *paggalang* ensures that children, from the time that they can speak utilize socially appropriate terms to address anyone who is older than them, as a sign of respect. This includes appropriate names for older siblings, cousins, friends, grandparents, aunts & uncles (Ponce, 1980; Cimmarusti, 1996).

In addition to this social aspect of Filipino culture is the interdependent self-construal that exists within collectivist cultures (Markus & Kitayama, 1991; Triandis 1995). In contrast to a collectivist culture, the self-construal in individualistic cultures such as North America, Canada, United Kingdom and Australia is one of an independent nature where individuals see themselves as a bound and autonomous entity (Triandis, 1995). These differing, culturally-based, self-construals and social practices inform attitudes about age and the ageing process, which have implications for how older people are viewed and how they view themselves. It could be argued that, compared to an eastern collectivist culture, the psychological transition of ageing in a western and more individualistic culture is made more complex, particularly when pervasive societal attitudes towards the aged and ageing may be negative.

In support of this hypothesis, are several theories and studies that show how older adults' internalization of negative age stereotypes manifest as self-fulfilling attitudes which result in poorer self-perceptions and performance. Theories include 'Stereotype Embodiment' (Levy, 2009) which proposes that attitudes towards ageing are often unconsciously internalized, across the lifespan, from the surrounding culture. It is hypothesised that these attitudes use multiple pathways to express themselves and can manifest in self-defeating behaviours, particularly when these attitudes become self-relevant in older age. Another theory which feeds directly into stereotype embodiment is that of 'Stereotype Threat' (Steele, 1997), where an individual's cognitive processing becomes inhibited by their fear of confirming a negative stereotype about their 'group'. In this case, it has been shown in several studies that older adults who are under the conditions of the threat of confirming negative stereotypes about their age perform poorly on memory tests compared with those where stereotype threat is absent (Levy & Langer; 1994; Hess, Hinson & Statham 2004).

Cross-cultural studies can yield important differences in the way people operate within their given socio-cultural environment. It is because of these differences that we have the opportunity of observing how the phenomena of stereotype threat might occur very readily when the necessary (cultural) conditions are combined with a person's heightened sensitivity (as shown in many American samples, see Hess, Auman, Colcombe & Rahhal, 2003; Hess, Hinson, Statham, 2004). Alternatively, when conditions of stereotype threat are present but a person's sensitivity may not be as high (for possible self-identity and cultural reasons), the operating mechanism may occur to a lesser degree, or not at all (as seen in Levy & Langer, 1994).

So far, researchers have been very focused on the variables of interest: age, culture and memory. An important variable is also the 'self-construal' as this has been shown to determine contrasting behaviours depending on which environment the self operates in. For example, individuals with an independent self-construal are more concerned with appearing consistent with previous behaviours due to the belief that they are autonomous and accountable for all their actions across a number of varied situations. Whereas, those who are of more collectivist cultures, and have an interdependent sense of self, are less concerned with maintaining a self-identity which is consistent. This may be because they come from a culture where group harmony is the focus above concerns of how to maintain an independent self across situations (Cialdini, Wosinka, Barret, Butner & Gornik-Durose, 1999). One of the reasons that people in western culture may be so prone to age stereotype threat is that they may suffer a kind of 'psychological levelling effect' in their attempt to maintain their 'independent self-identity', which may occur less, or not at all in collectivist cultures.

The untangling of these factors in a systematic way is challenging as it is likely that these factors operate in an unsystematic way and rely on socio-situational factors to come into play. It is the aim of the present study to address which cultural issues facilitate internalization of negative stereotypes about age. In addition to this, we aim to explore whether significant discrepancies exist between implicit and explicit views of ageing in individualistic versus collectivistic cultures. Finally, we will investigate whether the interdependent self-construal in a collectivist culture (where practices of elder respect are more prevalent) has less sensitivity to age stereo-type threat.

Methodology

The present study will investigate:

- How self-perceptions of ageing varies between individualist cultures (such as Australia) versus collectivist culture (The Philippines).
- If there are any discrepancies between implicit and explicit (self-report) attitudes towards ageing between younger and older adults in different cultures (Australia and The Philippines)?
- To what extent age stereotype threat occurs in an individualist culture such as Australia compared with a collectivist culture in the Philippines, and what impact these differences have on the memory performance of older individuals within these two cultures?

To investigate these questions, a mixed-method approach will be taken. First, focus groups for 24 younger adults (20-35 years old) and 24 older adults (60-85 years old), in groups of six, will be conducted in both countries (The Philippines and Australia) to gain insight into cross-cultural differences in self-perceptions of

ageing. This research is being done as a collaborative project with the University of the Philippines (UP). Participants will be recruited in Australia through newspaper advertisements and a register of volunteers who have previously signed up to participate in research with the Ageing Research Unit. Participants in the Philippines will be recruited through advertisements within the university for the younger participants, and through local community groups for older participants. The data collected from the focused groups will be analysed using grounded theory (Glaser, 1978) and inform the later phases of the study.

Another set of participants will be recruited for the two later phases of the study. These participants will include 60 Younger Australians (20-35 years), 60 Older Australians (60-85 years old), and 60 Younger Filipinos (20-35 years) and 60 Older Filipinos (60-85 years old). They will be asked to complete a questionnaire on attitudes towards ageing, cultural orientation and subjective well-being. In order to contrast explicit self-report attitudes towards ageing with more implicit attitudes about age, the participants who filled out the survey will also be asked to take an Implicit Association Test (IAT, see Greenwald, McGhee & Schwartz, 1998). The independent variables are age and culture and the dependent variables are the survey scales on cultural orientation, attitudes towards ageing and subjective well-being.

However, before the survey and IAT will be administered, (in order to not create a prime with the survey & IAT) participants will be given a memory test under prime conditions as well as a control condition. Sixty younger participants (20-35 years of age) and sixty older participants (60-85 years of age) will be randomly assigned to a negative prime, positive prime or no prime/ control condition (in both countries - Australia & the Philippines). Participants will be given a recall test where a list of fifteen words will be read out over a period of five trials. For Filipino participants, the list of words will be made available in either English or Tagalog (the national Filipino dialect) in order to control for a possible language effect. The independent variables are age, culture and prime type and the dependent variable is the memory test score.

Summary

By examining cultural influences on perceptions of ageing, we will further our understanding of which psycho-social aspects play a role in an older person's memory performance. By accounting for which social aspects negatively affect people's self-perceptions, we are able to raise awareness through policy and media campaigns about the detrimental effects of these negative self-perceptions of ageing on memory performance and other age-related phenomenon. Shifting attitudes about age and ageing will not only benefit a society's older generation, but also younger individuals can then transition into their later years in life with more positive self-perceptions, and less internalized negative attitudes about ageing.

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IMPROVING GENERAL PRACTITIONER DEMENTIA SERVICES: THE EVIDENCE

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Abstract

This paper presents the results of a literature review exploring interventions, systems and context that improve General Practitioner (GP) dementia services. A search of PubMed and Cochrane databases was undertaken for studies in English published from 1990 to 2011. Papers describing GP activities and trials were included, with a range of methodologies to capture evidence that could be applied in general practice. A total of 24 papers were selected describing 42 studies. Thematic synthesis of the papers produced results relating to patient and carer needs, GP services and general practice processes, all affecting outcomes for the person living with dementia or their carer when they consult a GP. Interventions that improve these outcomes focus on team rather than individual dementia knowledge, facilitating collaborative networks and processes. The outcomes include increased case finding and supportive management for people on the dementia journey. The key GP enablers for these processes to be effective are:

- i. GP appreciation of the value of a dementia diagnosis to the patient and carer;
- ii. GP support for the patient in coming to terms with a dementia diagnosis;
- iii. GP recommendation of appropriate dementia support services;
- iv. GP involvement in multidisciplinary modular dementia education;
- v. GP engagement with effective dementia service networks.

Rationale

This paper explores ways to improve the outcomes for people living with dementia when they visit their GP. A literature review gathers evidence from general practice research demonstrating strategies that improve GP dementia services. The results address the receptiveness of patients and carers to a dementia diagnosis and support, the awareness of the GP to their role in dementia diagnosis and referral, and the availability of effective dementia service networks.

Method

To answer the question, 'What evidence can improve GP dementia services?' a search was undertaken of PubMed and Cochrane Library, using the search terms:

'dementia', 'education', 'intervention', 'general practitioner' or 'primary care'. Papers published between 1990 and 2011 describing studies conducted in general practice or involving GPs were included. Papers written in a language other than English were excluded. The search produced 243 papers, 23 of which were selected as their titles suggested general practice studies. Following abstract review, 13 of these papers were considered relevant, with examination of their bibliographies producing an additional 11 papers for review. The 24 selected papers included 42 trials, qualitative research, reviews and evaluations. Thematic synthesis of these papers generated the results of this review which are presented as evidence for improving GP dementia services (Thomas & Harden, 2008). For consistency in this report, 'GP' was used to describe all 'primary care physicians', despite lack of clarity in some papers as to who this may refer to. Papers reporting the same study were included when they presented different aspects of the research with separate outcomes.

Results

The results are presented under the three headings: patients/carers, GPs, and general practice processes, all of which interact to produce the outcomes for people living with dementia and their carers following GP consultation. The GP barriers to this interaction have been identified as poor knowledge of local dementia support services, little access to dementia specialist services, scarce time to manage cases, inadequate financial recognition for dementia care, stigma in diagnosing dementia and difficulty in disclosing the diagnosis (Koch & Iliffe, 2010). Proposed enablers to improve GP dementia services were financial incentives to diagnose and manage dementia appropriately, training to increase confidence in doing the task, and assistance from a trained multidisciplinary team to ease the work load. The results of the literature synthesis include interventions, processes and concepts that may improve GP dementia services. Financial incentives are outside the scope of this paper, but a strong theme emerging from the review is the patient benefits when GPs refer to other dementia services. This may improve GP income by shifting time consuming tasks with poor GP remuneration to other appropriate agencies.

Patients and carers

Diagnosis: Improved outcomes for people living with dementia begins with confirmation of the diagnosis that leads to appropriate management and support (Iliffe et al., 1999). Discussion of dementia symptoms is facilitated by a supportive GP-patient relationship, leading to acceptance of the diagnosis following investigations and referral (Iliffe et al., 2009). Perceived stigma, loss of privileges and fear of nihilistic treatment deters patients from disclosing dementia symptoms and hinders diagnostic processes (Boustani et al., 2011). A French study to improve dementia diagnosis measured an increase in 'suspected' cases of

dementia following GP education, with only 15% of these cases agreeing to specialist confirmation of the diagnosis (Perry et al., 2008).

Management: The 'ACCESS' cluster randomised trial with 408 dementia patient/carer pairs applied the intervention of care management combined with dementia education. Education involved a range of health professionals, half of whom were GPs. Providers attended an average of 40% of educational modules with only small gains noted in dementia knowledge (Chodosh et al., 2006). The outcome of improved patient quality of life compared with normal care ($p=0.011$) was attributed to markedly increased guideline adherence (Vickrey et al., 2006). This was achieved by collaboration between trained dementia care managers and other providers. GPs trained to recommend carer support and counselling increased uptake of these services four and five times respectively that of control ($p=0.021$, $p<0.001$ respectively) (Donath et al., 2010).

General practitioners

Educational needs and methods: GPs identified their learning needs for community dwelling dementia patients as diagnosis and treatment compared with residential care patients, medication and legal issues (Beer et al., 2009). Nurses identified their learning needs as dementia management (Iliffe et al., 1999). Dementia networks identified GP learning needs as adherence to guidelines (Cherry et al., 2009) and assessing driving competency (Byszewski et al., 2003). GPs' preference for learning about dementia was through educational workshops (Beer et al., 2009; Warren-Findlow et al., 2010). Trials using workshops as an intervention increased GP dementia knowledge, each applying interactive teaching styles to deliver varied content (Cherry et al., 2009; Chodosh et al., 2006; Donath et al., 2010; Vollmar et al., 2010; Wenger et al., 2009). A dementia 'toolkit' of written and supportive material is often part of educational interventions. A posted toolkit as the sole intervention to improve GP assessment of driving in people living with dementia improved GP knowledge and confidence in this domain (Byszewski et al., 2003). Academic detailing involves a visit at the workplace by an 'opinion leader' or team to deliver information through interactive group processes. GPs who might otherwise not attend dementia education may be engaged when the visit coincides with a tea break and refreshments are provided (Cameron et al., 2010). GPs who were trained as 'dementia opinion leaders' perceived this role put them in conflict with their specialist colleagues (Pereles et al., 2003). Opinion leaders involved in dementia care raised GP awareness of their services (Cameron et al., 2010).

Educational outcomes: Education based on guidelines targeted diagnosis (Downs et al., 2006; Pond et al., 1994; Wenger et al., 2009), management (Cameron et al., 2010; Cherry et al., 2009; Dalsgaard et al., 2007) and driving assessment (Byszewski et al., 2003). Although education improved GP dementia knowledge, improvement in guideline adherence was variable. Poor adherence to dementia

guidelines was attributed to their complexity, with improved adherence from education on selected guidelines (Cherry et al., 2009), and no improvement when multiple guidelines were promoted (Waldorff et al., 2003). Dementia education by a multidisciplinary team for all providers doubled guideline adherence and improved patient outcomes (Cherry et al., 2009; Chodosh et al., 2006; Perry et al., 2011; Vickrey et al., 2006). Electronic tutorials and support software each increased GP case detection compared with control ($p=0.01$), despite medical records documenting no significant change in guideline adherence ($p=0.4$) (Downs et al., 2006). Development of an open-access virtual dementia education program required input from national experts to address health system and cultural differences (Degryse et al., 2009).

Practice interventions

Interactive and multifaceted interventions with ongoing support targeting all of the GP practice team members are most likely to improve practice processes (Rampatige et al., 2009). Dementia diagnosis and management can be improved when the practice team, patients and carers collaborate with Alzheimer's Associations who are familiar with local dementia services (Cherry et al., 2009; Reuben et al., 2010). A dedicated telephone number for dementia assessment and services can effectively link consumers and providers (Venohr et al., 2001).

Implications for policy and practice

1. Dementia case finding is facilitated by a supportive GP-patient relationship;
2. GP recommendation of dementia support services improves patient uptake;
3. GP delivery of dementia services may increase with financial incentives;
4. Increased team rather than individual dementia knowledge improves processes;
5. Academic detailing engages GPs who may have little interest in learning about dementia;
6. Patient outcomes improve when all dementia service providers share education.

Summary

The limitations of this review include the varying strength of the outcomes presented in the papers. Without objective measurement, increased GP dementia knowledge cannot be assumed to result in practice changes or to benefit patients. Referrals documented in medical records measure practice rather than patient outcomes, with poor compliance likely in patients who fear a dementia diagnosis. Similarly, results that are overestimated from survey responses and underestimated from poor documentation in medical records can distort the true outcomes. The strength of the review is the consistent themes produced from research applying different methodologies in the context of general practice in a

range of countries. The key findings are that GP dementia services improve through multi-disciplinary education that targets all providers. GPs learn the value of identifying dementia cases and referring them to appropriate services, by collaborating with dementia services, either local or virtual. Dementia networks can ease GP workload and improve the outcomes for people living with dementia when they consult their GP.

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UNIVERSITIES GOING GREY

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ABSTRACT

Promoting the health benefits to seniors of remaining physically and mentally active is encouraging the older generation to pursue lifelong learning, physical exercise and other forms of social engagement. This may explain why older persons are voluntarily participating in a wide range of activities offered by Australian universities.

This paper draws on research exploring participation by older persons in the activities of Australian universities and in particular the role of the built environment in encouraging or hindering this engagement. It presents the interim findings of an audit of Australian universities identifying the range of opportunities currently being offered to seniors to participate in the core activities of these institutions. These findings point to mutual benefits being delivered, revealing why Australian universities are increasingly offering such opportunities, but also why seniors are voluntarily participating in them. The opportunities uncovered range from attending classes, assisting with student practicum, volunteering as subjects for research projects through to pursuing cultural interests and even boarding students. For seniors, participation appears to be encouraging healthy ageing, but also is helping many to cope with their transition into retirement. However of most value, the findings challenge expectations about the types of activities seniors might choose to participate in if given the opportunity and in demonstrating their capacity to make a valued contribution through volunteering.

This paper draws on research undertaken for a doctoral thesis entitled 'Universities and Positive Ageing: Emerging modes of engagement for an ageing society'. It explores participation by older persons in the activities of Australian universities, and the role of the built environment in supporting or hindering this type of engagement for seniors living independently within the community. It presents the interim results of a desktop audit of Australian universities identifying the extent to which these institutions are encouraging senior participation and the types of opportunities these institutions are providing.

RATIONALE

Working as an urban planner for one of Australia's oldest universities for almost a decade, I observed that senior citizens were being increasingly attracted to the university's campuses and engaging in the core activities of the institution. This sparked my interest in why and what type of engagement was occurring between the university and these older persons, particularly given a university is not a

place where society expects to find seniors. More correctly, society's stereotyping of the elderly assumes that older persons would have little interest or the capacity to participate in tertiary level education or research; or would find the campus environment appealing (Hummert 1993; Hummert et al. 1994).

Automatic dismissal of the notion that older persons may want to participate in the activities of a university perhaps explains why this trend has attracted little research attention. Certainly if this trend can be demonstrated, it challenges perceptions about the kinds of recreational pursuits and social settings that older persons may find appealing. Importantly, if these types of opportunities are motivating older persons to remain socially active and builds a sense of attachment to the university community, then its potential to support positive ageing warrants investigation (Eyles & Williams 2008; Kochera, Straight & Guterbock 2005; Wong & Fry 1998). What is also significant about this engagement, is that appears to be motivated by commercial rather than out of charitable interest, in other words the parties involved both appear to bring value and gain benefit from the exchange (Cook & Rice 2006). Therefore this trend may prove to be a sustainable and cost effective way of supporting seniors living independently within a neighbourhood setting to remain socially active. If so, it is a trend that government should consider supporting as part of its positive ageing agenda.

In order to support my observations that older persons appeared to be voluntarily engaging in the core activities of Australian universities; and that this engagement was being encouraged by these institutions as a way of supporting their teaching and research efforts, the first phase of research has been to conduct a remote audit of university websites. The purpose of this audit being to identify the types of opportunities currently advertised by these institutions to the public inviting them to participate in activities within the campus or take advantage of services provided by them, and in particular how and why older persons are being specifically targeted.

METHODS

The starting point for this study into the engagement between older persons and universities was to identify the types of activities and range of facilities afforded within university campuses that the public, and in particular older persons are being invited to access. It was also necessary; given the absence of empirical data about this trend, to not only demonstrate that this type of engagement was indeed occurring, but to provide a quantitative measure to illustrating its significance. This data is being collected using a remote audit method designed to systematically interrogate each university's website, and it is proposed to audit all forty-two (42) Australian universities. To date half of these institutions have been audited and as such, the results presented in this paper are preliminary.

Remotely auditing universities using the information published on their websites presented as the most feasible method given the four month time constraint for this phase of the study, but also given this media appeared to be how universities were advertising opportunities for engagement and/or services on offer within their campuses to the general public. The auditing approach takes advantage of the fact that Australian universities are remarkably uniform in their academic structure and administration, due in part to all being subject to legislative control at a federal level under the Australian Higher Educational Support Act 2003 (*Higher Education Support Act 2003*). This uniformity is also reflected in the design of their websites and in how these institutions present their academic offering and research opportunities to students in the competitive domestic and international market. This meant that organisational hierarchy common across all universities i.e. College, Faculty, School, Departments and so forth could be used to structure the way information could be searched for across a university's organisational structure. Similarly the types of infrastructure provided on campuses supporting teaching and research activities are generic (i.e. libraries, lecturing theatre, performance venues, etc), as are the various types of amenities provided to support the university community (student accommodation, health & sporting facilities, refectories, etc). This allowed a list of venues and services likely to be supporting engagement with the public to be formulated and searched for within the websites.

Supporting this methodical approach of searching the various parts of the websites, was the use of a technique drawn from conceptual context analysis (Palmquest 2010) to assist in gathering information about senior engagement. Using 'selective reduction' which reduces text down to categories consisting of a single word or short phrase, this technique was applied in reverse allowing a 'concept dictionary' or fixed vocabulary to be developed that could then be applied, using the search engine capabilities on home pages as well as individual pages within the university's website to retrieve information and in finding links to relevant groups or services operating within the institution.

In order to test the design of the auditing method, a pilot was conducted using the six (6) oldest universities within Australia, in part because these institutions represented the most complex organisations in terms of academic offering and research capacity. This proved useful in helping map the process and to refine the concept dictionary. It also allowed a template for recording the results for individual campuses to be developed and for the data to be combined for analysis purposes.

RESULTS TO DATE

Universities have been audited in order of the chronological age of the institution in terms of its recognition as a university. To date half of the Australia's universities (21 institutions) have been audited. While acknowledging that this means the data analysed is from the oldest or most established institutions within

the nation, the sample does represent universities of various ages and geographic locations across Australia.

Interim results at this midway point in the auditing process suggests that universities across Australia are actively encouraging older persons to participate in a diverse range of activities within their campuses. There appears to be a correlation between the range and number of engagement opportunities offered to older persons by an institution, and the extent to which the university is involved in ageing or age-related research and teaching. This was not surprising and lends weight to the proposition that universities are offering these opportunities as a way of accessing older persons to assist in the training of students, and for research purposes.

Table 1 summarises the wide variety of engagement opportunities currently being provided within the sample of Australian universities audited to date. Nine (9) themes were identified which were consistent across all the universities audited although individual programmes or activities were tailored to meet an institution's particular teaching or research need. It was also evident that universities were cognisant of the demographic characteristics and needs of the community surrounding their campuses in the way opportunities were promoted to the public, to encourage participation. While it is not possible to detail all the findings, the data revealed some unexpected trends that have enormous potential to support positive ageing. These key findings included the following.

- Universities were catering to a demand for recreational education, where a person's motivation for study is for personal interest rather than obtaining formal qualification for employment or career progression. Almost half of the universities audited offered enrolment allowing for the 'auditing' of classes. This is where a person can enrol to attend lectures and participate in a class without having to sit formal examinations. While a course fee was charged, in many cases the cost was substantially discounted. More significantly, 20% had agreements in place with a local 'University of the Third Age' (U3A) granting members (aged 50+ and retired) access to audit classes at no cost. In return, U3A members agreed to participate in the institution's research projects or teaching activities.
- 17% of all opportunities supporting student practicum specifically targeted or limited participation to older persons. 80% of the universities advertised specifically for older persons to participate in clinical trials and other forms of research activity.
- While all universities encouraged the community to access the campus and take advantage of the amenities it offered, 52% offered the public access to a programme of senior exercise classes (persons aged 50+).

- Thirteen (13) universities offered programmes allowing the public to donate their body to science. In return for donation (although subject to conditions of the body being in suitable condition at the time of death), institutions covered all expenses associated with the transport and cremation of the body, and conducted a memorial service for the family.
- Five (5) universities advertised ‘Senior Homeshare Programmes’ to their students, which offer free accommodation in exchange for living with an older persons for companionship and assisting them with daily living such as offering to drive them places, doing the shopping, garden maintenance and the like.
- 71% of universities had established partnerships with aged care providers and appeared to be accessing local retirement communities and nursing homes for research purposes and for student placement for clinical training. A striking feature was the number of programmes these partnerships were sponsoring that had a preventative rather than clinical focus, allowing students to engage with residents in a range of projects supporting their health and wellbeing. Universities were also supporting a range of outreach programmes targeting seniors as an extension of these formal partnerships, often contributing to opportunities for students to volunteer within the community. Some notable examples being ‘adopt a grandparent’ schemes encouraging visits between students and older persons who were socially isolated, providing technical support for senior computer clubs, conducting art classes or offering music therapy programmes. One university had entered into formal partnership to develop a retirement village on campus along the lines of the US model of the University-based Retirement Community (Carle 2006; Harvison 2010).

TABLE 1: SUMMARY OF INTERIM RESULTS

Types of Engagement Opportunities identified.	% Universities (No. Institutions)
RECREATIONAL EDUCATION	
• Mature-aged enrolment in degree courses – full fee	100% (21)
• Non-award, single subject enrolment – full fee <i>(All Faculties, prerequisite study generally applied – subject to examination)</i>	100% (21)
• Auditing - single subject enrolment discounted fee <i>(All Faculties, no prerequisite study generally required – no formal assessment)</i>	33% (7)
• Auditing - single subject enrolment – discounted fee <i>(Subjects restricted within the Humanities and Social Sciences or limited subjects with approval of Faculty – no formal assessment)</i>	14% (3)
• Auditing - single subject enrolment – free to U3A members <i>Generally a memorandum of understanding or formal agreement in place between the University and U3A. U3A will also generally co-ordinate attendance and ensure its members are appropriately prepared to attend the class. In return, U3A members are available as a pool of participants for research or class-based projects.</i>	19% (4)

<ul style="list-style-type: none"> Offers continuing education / personal development or special interest short courses directed at the general public (verses ongoing professional development) – Fee basis 	71% (15)
<ul style="list-style-type: none"> Lifestyle or courses for person development or interest specifically tailored for an older public audience (not directly linked to practicum or research) – Fee basis 	14% (3)
<ul style="list-style-type: none"> Open learning delivered via university-owned community radio, web or podcasting media – may be offered at no cost or at a nominal free for supply of course materials. 	23% (5 + 1 being piloted)
<ul style="list-style-type: none"> Local U3A members who attend the campus for classes arranged by the U3A that may be given by university staff or research centres. Generally one-off or scheduled programme. Content tailored to suit the interests and level of understanding of the U3A members. 	28% (6)
<ul style="list-style-type: none"> Study Tours, which are open to the general public – planned itinerary and accompanied by academics who act as the guides and provide insights into the tour places. Cost includes airfares, accommodation, land-based activities, meals etc. All arranged through the university. 	28% (6)
STUDENT PRACTICUM	
<ul style="list-style-type: none"> Access to clinical health services (medical or allied health) training students under the supervision of qualified practitioners for fee or at a substantially reduced cost. <i>On average, universities offer the public access to 5 campus-based clinical services of which 79% offer an allied health service (Psychology, Podiatry, Optometry, Physiotherapy, etc).</i> 	100% (21)
<ul style="list-style-type: none"> Student Performances and/or Exhibitions – general public providing an audience allowing students to practice their artist skills. 	66% (14)
<ul style="list-style-type: none"> Access to other forms of student practicum – including Legal Services, Veterinary Clinics, and participation in Conversational Language Classes. 	33% (7)
<i>Note of the all clinical and other practicum-based services offered to the general public by Universities, 17% were specifically targeting or could only be accessed by older persons.</i>	
VOLUNTEERING - RESEARCH ACTIVITIES	
<ul style="list-style-type: none"> Advertised for seniors to volunteer to participate in clinical trials or research projects. <i>Several institutions maintain a register (generally web-based) of senior volunteers willing to participate. In all cases those registered receive a monthly newsletter, invitations to public talks on relevant to research about ageing as well as social events.</i> 	81% (17)
VOLUNTEERING – TEACHING & ADMINISTRATIVE SUPPORT	
<ul style="list-style-type: none"> Mentoring - Although peer or alumni-based programmes are favoured in Australian universities, some institutions did encourage members of the public to mentor students. 	10% (2)
<ul style="list-style-type: none"> Volunteer Patient Programmes – medicine, dentistry and across allied health. In all cases volunteers receiving training. Reimbursement is dependant on the extent of examination or role. Generally refreshment/ lunch is provided and travel expenses will be reimbursed. Some offer gift or movie vouchers. Some role where physical examination is conducted, volunteers will be paid on an hourly basis for their involvement. 	52% (11)
<ul style="list-style-type: none"> Advertises other volunteering opportunities allowing the public direct interaction with students and academic staff through tutoring or involvement in teaching activities (excluding volunteer patient programmes) and administrative roles within Faculties or Administrative Units. 	38% (8)
CULTURAL PROGRAMMES	
<ul style="list-style-type: none"> Offer a regular programme of public lectures, talks, cultural events that are open, generally free of cost to the general public. 	100% (21)
<ul style="list-style-type: none"> Separate or specific cultural programme for seniors – University co-ordinates and advertises a purpose-designed programme of events and/or activities specifically targeting senior groups. 	5% (1)
CAMPUS AMENITIES	
<ul style="list-style-type: none"> Community invited to access the institution’s libraries and to join as a Community Borrower. 47% or 10 institutions offered discounted rate or concession to seniors or U3A members. 	100% (21)
<ul style="list-style-type: none"> Community invited to access the institution’s sports centres and to join as a Community or Public Members. 11 institutions (52%) offer seniors or over 50’s exercise programmes with special membership 	100% (21)

deals via their sports centres. This is in addition to any specialised clinical services.	
<ul style="list-style-type: none"> Public able to access campus-based professional health services such as GP services. 2 universities (10%) restrict access to on-campus services to staff & students. 	90% (19)
<ul style="list-style-type: none"> Movie Nights – University or university-affiliated film club or society offering a regular programme of free or low cost movie nights open to the general public. Typically utilising the institution’s lecture theatres, auditorium or performing art centres. Often linked to a pre-discussion or talk related to the movie or subject of the movie. 	33% (7)
<ul style="list-style-type: none"> Campus-based Community Gardening or bush regeneration area, nursery or the like. General public invited to participate in gardening activities with students and staff. Strong link with sustainability programmes running on the campus. 	23% (5)
<ul style="list-style-type: none"> Weekly Famer’s market or Arts & Craft Markets held on-campus. 	52% (11)
ALUMNI & EMERITUS PROGRAMMES	
<ul style="list-style-type: none"> Emeritus Faculty - University provides on-campus accommodation, free parking and other benefits allowing retired staff to remain engaged with the institution. In return members provide a range of services includes what is effectively a ‘locum’ service for teaching, acting as University ambassadors and general resource assisting with grant applications, policy etc. 	5% (1)
<ul style="list-style-type: none"> Alumni programme and benefits including discounts on further study, memberships, etc, encouraging Alumni to remain engaged with the University. Some institutions offer inducements such as free parking on campus to encourage alumni to take advantage of campus amenities and facilities. 	100% (21)
<ul style="list-style-type: none"> Student mentoring programmes via or limited to Alumni members. 	60% (13)
DONAR PROGRAMMES	
<ul style="list-style-type: none"> Body Donation Programmes – institution covers all experiences including cremation. Most offer a Memorial Services for the Family and many maintain a Remembrance Book. 	62% (13)
STUDENT HOUSING	
<ul style="list-style-type: none"> University provides a secure database of off-campus rentals including home stay (room and meals) or straight rental. Service allow public to register the availability of a bedroom for rent and restricts viewing of the offering to students only. 	95% (20)
<ul style="list-style-type: none"> University arranges home stay for international or country students or is affiliated with National Home Stay organisations. 	66% (14)
<ul style="list-style-type: none"> University housing website advertises or is affiliated with a senior home share organisation. 	23% (5)
COMMUNITY OUTREACH & PARTNERSHIPS	
<ul style="list-style-type: none"> Partnership arrangements with aged care providers and their respective retirement or aged care communities allowing for student placement as well as opportunities for research collaborations. 	71% (15)
<ul style="list-style-type: none"> University has partnered in a University-based Retirement Community or UBRC (located on campus or within close proximity). 	(1)

IMPLICATIONS FOR POLICY AND PRACTICE

The finding suggests that universities are actively seeking participation by older persons in order to support their teaching and research efforts. Equally given that participation by older persons is voluntary, they are also gaining a benefit. From a planning and design perspective, it brings into question the types of community settings and environments that current generations of older persons are finding appealing and may differ to those of past generations.

While the types of engagement offered by universities may not be attractive to all seniors and access to these opportunities is likely linked to physical proximity to a university campus, as a model of engagement for seniors, it offers some important

lessons that have broader implications about how positive ageing might be supported for seniors living independently within a neighbourhood setting, and in doing so, how demand for health care and potentially welfare benefits might be reduced. Underpinning the success of these engagement opportunities afforded by universities is the delivery of mutual benefits to those participating as well as the institution. Not only does this suggest the model is self-sustaining but more importantly older persons are valued in the exchange rather than being passive recipients. It is this sense of being 'wanted' or 'valued' by a university community that is likely an important motivation behind why seniors are remaining engaged, but it is also a vital component of why the model has the potential to support positive ageing (Rowe & Kahn 1987, 1998).

SUMMARY

The interim findings of an audit of Australian Universities provides evidence that these institutions are activity encouraging participation by older persons in their core activities of teaching, research and community outreach. It also highlights the investment being made by Australian universities in their research and teaching capacity in the area of ageing and age-related issues that will be in the forefront of helping society deal with population ageing. This suggests that in order to continue to support this focus on ageing, universities will likely sustain and potentially expand opportunities for older persons to become engaged in their activities which presents as an enormous opportunity to promote positive ageing for seniors ageing-in-place.

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SOCIAL NETWORKS OF OLDER PEOPLE: OLDER PEOPLE AND SHOP-GOING

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Abstract

This paper describes a classic grounded theory study concerned with older peoples' interaction in their neighbourhood shops. The theoretical concept 'Civic Socialising' has emerged; such shops are an arena where participants can consolidate their position in the neighbourhood. This knowledge should be incorporated into research involving assessment of older peoples' social networks, and be used to update assessment instruments. The study highlights older peoples' civic-mindedness, and their proactive approach to socialising, and should encourage governments and planners to ensure that local shops remain a feature of neighbourhoods.

Rationale

Shops are places where people trade goods and exchange information, a reciprocity identified beneficial for communities and individuals (Horne, 1984; Scarpello, Poland, Lambert, & Wakeman, 2009; Smith & Sparks, 2000). Shops have been described as opportunity structures (Macintyre & Ellaway, 2000): places that give people the chance to interact and bond. Social bonds can tie consumers to personnel in shops, a bond sustained even in the absence of other neighbourhood ties (Stone, 1954). Recent research has identified that business and service people are accessible 'regulars' in older peoples' lives (Gardner, 2011:266), and can act as confidantes (Anderson, Cimbal, & Maile, 2010). Frequent shopping has been associated with survival (Chang, Chen, Wahlqvist, & Lee, 2011). Yet rarely does this knowledge inform research involving determination of older peoples' social networks; current approaches focus largely on mapping ego-centric patterns of association with family, friends and neighbours. Thus, knowledge about the social life of older people remains incomplete. This may affect for example, research that aims to determine patterns of social exchange (Fiori, Consedine, & Merz, 2011), or that draws association between social networks and morale (Litwin, 2001).

Incomplete knowledge about older people social networks must also affect assessment instruments used to determine risk of social deficit. This could have a flow-on effect. With Australian governments pursuing an Ageing-in-Place policy, a direction aimed at keeping elderly and frail people in their home or family settings (The Allen Consulting Group Care Coalition, 2007), and with the world population ageing at an unprecedented rate, it is forecast that vast numbers of older people will be residing alone. Services for so many people will require considered allocation. Assessment of social circumstances is likely to play a part in

determining who is entitled. While it would be an affront to conclude wrongly that an older person was at risk of social deficit, it would be cost inefficient to impose interventions based on inaccurate assessment.

Method

Classic grounded theory is the method employed for this exploratory enquiry, a research approach that emerged when Barney Glaser (1930-) and Anselm Strauss (1916-1996) were conducting research on dying patients in 1967 (Glaser & Strauss, 1967). It is 'a general induction method possessed by no discipline or theoretical perspective or data type' (Glaser, 2005:141), and was designed to generate hypotheses that 'comes from data, but does not describe the data from which it emerges' (Glaser, 2001:4).

Context

The study site is a shopping strip situated in a south-eastern suburb of Melbourne, Australia. Such suburbs developed after the Second World War offered an affordable good-life away from the city. Later, retirees who held similar middle-class values moved there. Cream-brick veneers and well-maintained gardens are featured, but nowadays they are transforming as younger families buy in. Nevertheless, these suburbs still have a high percentage of older people who intend to remain there. Shopping strips persist as a feature of these suburbs and commonly include a chemist, newsagent, green grocer, licensed grocer, hairdresser, and butcher.

Sample

Theoretical sampling, that is, sampling choice driven by what emerges from data analysis, is a tenet of classic grounded theory. Table 1 represents the demographic characteristics of the participants.

Table 1 Demographic characteristics of participants ($n=14$)

Older shoppers	Female	8
	Male	3
Shopkeepers		3
Age (years)	Minimum	67
	Maximum	88
	Mean	79

Data collection

Data have been generated through unstructured and semi-structured in-depth interviews (average duration 60 minutes) and through extended, and shorter duration observation conducted in shops.

Data analysis

Interviews were transcribed and treated in accordance with classic grounded theory method. Words and groups of words were studied for their meaning and significance in the context of all the data and they were assigned labels. In conjunction with this process, memos were made about insights which lead to an emergent pattern where codes that related to similar concepts could be categorised. Simultaneously with continuing analysis, further theoretical sampling occurred until saturation; no new concepts accounted for the participants' main concern or explained what they were doing to continually resolve their concern. Eventually, one core theory was identified.

Results

Participants' interactions in their local shops were purposive and involved more than purchasing supplies. Activities associated with the interactions included: 'Identity work'; 'Status work'; and, 'Monitoring and Censoring'. There is overlap of concepts, however, this serves to illustrate how codes and categories later 'collapse' to become a core concept.

Identity work

Neighbourhood shops form an arena where participants project their identity or aspects of their identity. For example, a shop staffed by young women was the focus for some of the male participants who enjoyed light-hearted banter. Yet in a shop staffed by men, older male participants were more macho and discussed sport. In this shop some of the older women participated in light-hearted flirting with the male staff.

Some of the women enjoyed being addressed by their first name, as it indicated recognition and regard.

...but the (shop) and the (shop) and would call me (first name) - supermarkets don't call you anything, all they want is your money (laughs). (Female shopper, 78)

Yet observation and interview revealed that 'rules of engagement' were adhered to. Despite living in the area for sixty years, an older shopper elected to be identified by her surname and the local shopkeepers were aware and honoured this. Naming and identity were important to her and this is illustrated by her view about other service providers who were *not* from the shopping strip and did not observe her preference.

*At * (not a local shop) they call me * (an incorrect name) and I hate that (laughs) because my name is * and I told them I'm not * but they every time they * and I don't like being called * ... I resent strangers calling me by my first name because there you don't do it because it is too intimate. (Female shopper, 79)*

Status work

Older shoppers expected to be treated with respect and in accordance with the convention of their neighbourhood. A power 'game' existed between the older shoppers and shopkeepers with regard to maintaining that goods were of preferred type and quality. But both parties were aware of their co-dependency; the older shoppers supported select shopkeepers to ensure they stayed in business, even if their prices were higher, so that the service remained available.

Monitoring and Censoring

Older shoppers were aware of who was a 'local' and who was not. Some participants kept surveillance over the shopping centre. For example, a car-parking spot taken up by someone who was not shopping did not escape attention and an older shopper notified council.

Participants voiced opinion and exercised rights as to introduction of new shops. Shops that did not keep an expected variety of goods were not supported. Older shoppers were sensitive about the threat posed by the larger shopping complexes and they expressed distain for greed and self-concern of big businesses and of governments, which they considered disregarded the needs of older people.

It's money... making the big dollar. (Female shopper, 88)

It's all commercial it's all money money money. (Female shopper, 67)

It is through these activities that older shoppers demonstrated and reinforced their membership and influence, and in doing so they authenticated themselves in their neighbourhood. This activity is important as new incomers imposed change on a neighbourhood that the older people regarded as their own.

Emergence of conceptual theory

Classic grounded theory is concerned with identifying the main concern of participants and what it is they do to continually resolve that concern. Analysis has revealed that participant older shoppers are concerned with consolidating their place in the community both in the present and the future. Table 2 represents part of the analysis process and emergence of the main concern, 'Consolidation', and conceptual theory, 'Civic Socialising'.

Table 2 Part of the classic grounded theory analysis process and emergence of 'Consolidation' and 'Civic Socialising'.

Code	Category	Main concern of participants	Conceptual theory	Properties
Identity work Status work Monitoring Censoring	Membership Influence	Consolidation	CIVIC SOCIALISING	Selecting Surveilling Strategising

Properties of Civic Socialising

Selecting-participants choose to interact in their local shops (or not) and at their preferred level or intensity depending on their changing needs. This form of social interaction is unlike that afforded by interaction with family or with friends; it can be cultivated, neglected, or reinstated as required.

Surveilling ensures that older shoppers are informed and in a position to exercise control and influence.

Strategising in part includes being visible and recognised in the neighbourhood. While participants select the option to shop at supermarkets and other shops as it suits them, they support preferred neighbourhood shops often enough to ensure they remain in business. They perceive that this will maximise their options for the future when they may be less mobile or can drive only shorter distances.

We've got everything if we wanted it... say we don't drive a car anymore you could go down here and almost get anything you want. (Female shopper, 80)

I shop there because we've got to have a grocer shop... um because if that wasn't there it means people who can't walk to shops they you know we've got to have one .. we need one. (Female shopper, 81)

Implications for policy and practice

The study has generated the conceptual theory, *Civic Socialising*, which accounts for the way that older people consolidate their position in the neighbourhood by way of activities that include: selecting; surveilling; and strategising. This finding augments current understanding of older peoples' social associations. It highlights older peoples' proactive approach to ageing and a civic mindedness that belies a persistent image of older people being dependent on family, friends or neighbours for their social interaction.

This new knowledge should be incorporated into assessment approaches used to determine older peoples' social associations. Researchers aiming to identify older peoples' social networks, or to assign typologies of social interaction through analysis of existing data-bases with a view to drawing inference about health, well-being, or other effects, need be mindful of the full suite of potential social associations of older people. Finally, governments and planners would be wise to ensure that local shops remain a feature of neighbourhoods.

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AGE DIFFERENCES IN THE IMPACT OF AGEING EXPECTATIONS ON HEALTH BEHAVIOURS AND OUTCOMES

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ABSTRACT

Expectations about ageing are important drivers of health behaviours and outcomes. Most research on expectations of ageing and health-related issues has focused on samples of older adults; understanding how expectations of ageing influence health behaviours and outcomes in younger adults is an important aspect missing from the literature. The present cross-sectional survey design compared the role expectations of ageing play on health behaviours and outcomes in a young (aged 17 to 39 years; $M = 20.37$, $SD = 3.83$) and older cohort (aged 65 years and older; $M = 76.10$, $SD = 11.11$). It was hypothesised that expectations of ageing would mediate the relationship between age and health behaviours and outcomes in older adults, but not in younger adults. Regression models showed that the mean-biased corrected bootstrap estimate of the indirect effect of age on health outcomes via age expectations was .04 ($SE = .02$) with a 95% confidence interval of between .01 and .12 (based on 5000 samples) in older adults (final model $R^2 = .15$, $F(2,72) = 6.27$, $p = .003$). The results supported our hypothesis and indicated that the relationship between age and health outcomes was fully mediated by ageing expectations for older adults, but not for younger adults. These findings have major implications for potential educational or intervention programs aimed at improving health and wellbeing in old age.

RATIONALE

Expectations are hypothesised to be implicitly imbedded in the way people represent illness and health (Cameron & Leventhal, 2006), particularly in relation to age. In deciding if a health problem is caused by ageing or an illness, expectations of what ageing means to the self often influence the way an individual chooses to act (Leventhal, Brissette & Leventhal, 2006). For example, Sarkisian, Prohaska, Wong, Hirsch and Mangione (2005) found that poor expectations of ageing were independently associated with low physical activity levels in older adults. Poor health appraisals and behaviours were also associated with poor expectations regarding ageing in a study of older women (Weltzien, 2007). The influence of expectations on health behaviours can manifest in health outcomes. Kim (2009) found that expectations of ageing were positively correlated with mental and physical health status in a sample of Korean participants aged over 65 years.

Expectations surrounding health and ageing are hypothesised to develop over a lifetime of exposure to age stereotypes, as well as knowledge gained through direct experience and contact with ageing individuals. Negative age expectations have been found in adults as young as 20 years of age (Bardach, Gayer, Clinkinbeard, Zanjani & Watkins, 2010). There is a body of evidence within the literature showing that negative perceptions of ageing are linked to a reduction in positive health behaviours (such as exercise). However, most of the research relating to the effect of age expectations on health behaviours and outcomes has focused directly on older adults (Kim, 2009). In a study that did investigate the link between age expectations and physical activity, Roters and colleagues compared young (18-25 years) elite athletes and non-athletes. Interestingly, the study found no differences between these two groups, finding instead that the younger adults in their sample had similar, neutral expectations of ageing. However, this study did not compare younger and older adults, therefore it remains unclear what role age expectations play across different age groups.

A comparative study investigating differences in age expectations and their effect on health behaviours and outcomes across age cohorts is important, particularly given that the World Health Organisation identifies the importance of a life-span approach to age-related health issues (Andrews, 2001). Additionally, it would make researchers and medical professionals more aware that stereotypes may be influencing younger adults views towards age-related health issues differently from older adults (Palacios, Torres & Mena, 2009) – a fact that is not clear from the current literature. This study therefore aimed to investigate whether the effect that ageing expectations has on health behaviours and outcomes differed across age cohorts. Due to the fact that older adults have more day-to-day influence from perceptions of ageing (Levy, 2009), it was hypothesised that expectations of ageing would mediate the relationship between age and health behaviours and outcomes in older adults, but not in younger adults.

METHOD

Participants

Seventy seven males and 210 female participants from the Canberra region were recruited through the self-care residents of Kangara Waters retirement village, and the undergraduate Psychology program at the University of Canberra. Participants were aged from 17 years to 92 years old ($M = 37.77$, $SD = 25.77$). Psychology 101 students were offered 30 minutes research participant credit and Cognitive Psychology and Kangara Waters participants were offered the chance to win a \$100 Westfield gift card.

Measures

The first dependent variable was health behaviours, measured using a number of

questions about nutrition, alcohol intake, exercise, tobacco use and use of dietary supplements, which were used to calculate a global health behaviours score (see Guralnik et al., 2000). A higher score indicated more risky health behaviours (from 0 = *excellent health behaviours* to 13 = *extremely risky health behaviours*). The second dependent variable was health outcomes measured by calculating a global score similar to that calculated by Guralnik and colleagues (2000), from three different measures of health and disability (Activities of Daily Living, number of chronic medical conditions, and restrictions to daily living as a result of health problems). A higher score indicated poorer health outcomes (from 0 = *excellent health* to 17 = *extremely poor health*). The mediating variable was expectations of ageing that was measured through Barker, O'Hanlon, McGee, Hickey and Conroy's (2007) Ageing Perceptions Questionnaire. An overall mean score was calculated from the 32 items, with a higher score indicated more negative perceptions of ageing.

Procedure

Single-staged cluster sampling was employed in this study as a means of identifying potential participants. The present study employed a mixed-mode method (both pen-and-paper and online) to increase the response rate, as described in a study by Dillman and colleagues (2009). The return rate for the mail-out version of the survey was 25.3% for all surveys mailed out, however the true return rate is unknown, as the actual number of residents in the self-care community at Kangara Waters was not disclosed by Kangara Waters management. Participants from Psychology 101 and Cognitive Psychology were recruited via a flyer advertising the study on the respective unit Moodle sites. Kangara Waters residents were emailed a letter inviting them to participate in the study two weeks prior to the mail-out of the survey. Surveys were hand-delivered to all mail boxes in the Kangara Waters self-care residences by the principal researcher. Each dwelling received two copies of the survey in case two people were living in the same dwelling. Participants were advised to complete only one survey per person.

RESULTS

The mediating effect of ageing expectations on the relationship between age and health behaviours

To determine if the relationship between age of participant and health outcomes was mediated by ageing expectations, a mediation analysis was conducted using a bootstrapping method. All assumptions were satisfied with the exception of linearity, due to the non-significant relationship between ageing expectations and health behaviours, Pearson's $r = -.03$, $p = .32$. This was confirmed on examination of the scatterplot of standardised residuals against standardised predicted values. Given the above, the data was not considered to be suitable for this type of analysis.

The mediating effect of ageing expectations on the relationship between age and health outcomes

In a second mediation analysis, the total effect of age on health outcomes was significant, $\beta = .09$, $t(279) = 16.97$, $p < .001$. The direct effect on health outcomes was also significant, $\beta = .08$, $t(279) = 15.44$, $p < .001$. The mean-biased corrected bootstrap estimate of the indirect effect was .01 ($SE = .002$) with a 95% confidence interval of between .004 and .01 (based on 5000 samples), indicating a significant indirect effect ($p < .05$). This suggests that the relationship between age and health outcomes is partially mediated by ageing expectations.

To investigate if the nature of the above mediation differed in different age cohorts, mediation analysis was performed restricting the range of age to either 17 to 39 years (younger adults) or 65 years and older (older adults). For younger adults the indirect effect was not found to be significant, suggesting that the relationship between age and health outcomes in younger adults is not mediated by ageing expectations. In contrast, the indirect effect was significant, revealing the relationship between age and health outcomes in older adults is mediated by ageing expectations. A summary of the mediation analysis can be found in Figure 1.

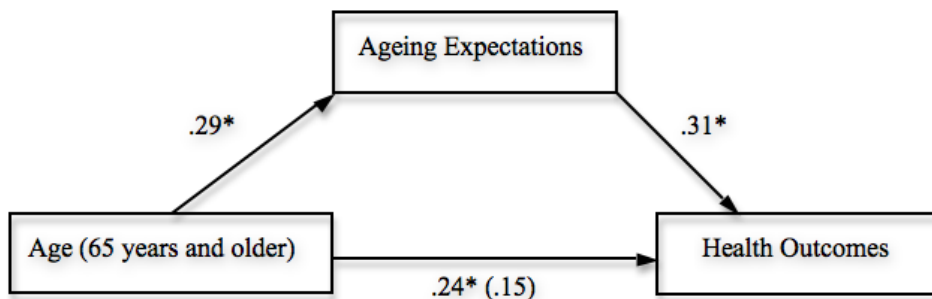


Figure 1. The mediating effect of ageing expectations on the relationship between age (65 years and older) and health outcomes. Values are standardised regression coefficients. For the final model, $R^2 = .15$, $F(2,72) = 6.27$, $p = .003$ (* $p < .05$)

IMPLICATIONS FOR POLICY AND PRACTICE

These findings have major implications for potential educational or intervention programs aimed at improving health and wellbeing in old age. The results suggest that ageing expectations play an increasingly important role on health outcomes as a person ages. Given this, delivery of an intervention program to modify ageing expectations would ideally occur before the age of 65, when this

pathway appears most influential on health. Improving health in old age through modifying psychological constructs, rather than solely relying on medical intervention, could help ease the burden on the health-care and aged-care systems as Australia's population ages.

SUMMARY

The results support the hypothesis that expectations of ageing would mediate the relationship between age and health outcomes in older adults (65 years and older) but not in younger adults (17 to 39 years). Due to violations of assumptions, analysis of health behaviours was not possible. These findings suggest that ageing expectations play a more important role in influencing health outcomes in old age. This may be because, as one ages, expectations of ageing are more salient, and therefore, have a more prominent influence on health outcomes.

When interpreting the results of the mediation analysis, it is important to acknowledge that causality cannot be determined. It is plausible that the relationship between age and health outcomes that is mediated by ageing expectations could actually work in the reverse direction. That is, with age, poor health outcomes influence the way an individual perceives the ageing process, leading to poor expectations of ageing. It is possible that health shocks or injuries that occur as one gets older could trigger negative self-perceptions of ageing, thus negatively influencing one's expectations of ageing. Another possibility is that these two constructs influence each in a reciprocal feedback loop, with poor expectations leading to poor health outcomes leading to even worse expectations of ageing and so on. The use of longitudinal data in future studies could help determine causality in this relationship.

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GRACEFUL AGEING: EXPLORING AGEING TRANSITIONS THROUGH A SYSTEMATIC LITERATURE REVIEW

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Abstract

Human ageing is a global phenomenon characterised by an experiential process of transitions. As such, graceful ageing is a subjective concept that may be construed and defined in many different ways. This paper evaluates current literature to broaden and deepen our understanding of this concept. A systematic literature review, consisting of a structured database and focussed search, was undertaken. Revelations from the database search suggest that while graceful ageing is recognised as a search term in the AgeLine database, empirical evidence on this concept is limited and scarce with a low 0.02% coverage. The focussed search involved a centred evaluation of theoretical formulations cited in each of the ageing concepts identified from the database. Findings from this systematic review indicate that shared beliefs and ideas in many of the ageing concepts are reflected in rehabilitation theory, positive psychology, psychosocial theory, and transactional analysis theory. These theories are appraised on the basis of overlapping ideas that are related to quality of life variables including contextual domains of objective wellbeing, life satisfaction and meaning in life. In conclusion, exploring our views of ageing and redefining human ageing concepts is justifiable. Research implications to stimulate discourse and validate the plausibility of the theoretical framework to the graceful ageing concept are further discussed.

Rationale

The World Health Organisation considers ageing as a global phenomenon with the elderly population growing at a fast pace. It is anticipated that by 2050, 80% of the world's population will be aged 60 years and older (WHO, 2011). While the ageing phenomenon presents challenges to economic and social infrastructures, human ageing continues to be an interesting and diverse concept. Traditionally, the ageing process in the human species is described as an interplay of biological (Stuart-Hamilton, 2006) and sociogenic determinants (Comfort, 1977). Consistent with this notion, the literature reveals various ageing concepts, each unique in scope. WHO, in a global context, promotes active ageing, "*a process of optimising opportunities for health, participation and security in order to enhance quality of life as people age*" (WHO, 2011). The interchangeable concepts of positive ageing

and successful ageing are formulated to respond to the needs of modern society in valuing the contributions of older persons to nation-building (Bowling, 1993) and strengthening a positive construction of ageing using the domains of positive psychology (Ranzijn, 2002). Productive ageing advocates ideological strategies that *"reflect a positive, upbeat view of later life as a time, not of burden or disability, but of healthy and productive living"* (Moody, 2001). This paper broadens our understanding of human ageing. More specifically, it explores the graceful ageing concept in depth and proposes a set of theoretical assumptions to define this emerging idea. It is envisaged that future research will draw on this framework.

Method

A systematic literature review was undertaken to support ideas discussed in this paper. It level involved a structured database search of information including anecdotes and journal articles on ageing and associated concepts. It also involved a focussed search of the literature to compile and evaluate journals and books to formulate a theoretical framework for future research endeavours. The literature review was completed utilising automated search engines including Google and AgeLine. Content analysis corroborated by nonparametric statistics was employed to validate findings from this review.

Results

From our literature review, it is evident that graceful ageing is an emerging and novel idea. Conceptually, this term was used to refer to the 1986 longitudinal *Nun Study* by an epidemiologist-neurologist who was more interested in examining the onset of Alzheimer's disease than in defining the concept from a research context (Snowdon, 2001). Anecdotally, the term remains to be used loosely to describe cosmetic ageing and youthful health. A random search using Google search engine revealed common themes associated with beauty (Eve Yoga, 2011), anti-ageing remedies (Graceful Ageing, 2011), elegance (DPS Guide to Aged Care, 2011), ageing in a culture of youth (Heart of Healing, 2011), and medical and non-invasive interventions to remove wrinkles, delay menopause and combat other ageing indicators (Live Well, 2006). Furthermore, it is capturing widespread interest with the development of dialogue groups such as the York University Alliance in Graceful Ageing in Canada (York University, 2011). There are reported forums facilitated by international organisations such as the Graceful Ageing Forum (2011) in Nigeria.

AgeLine, which is part of a database collection for the behavioural and social sciences in health, was accessed to compile, download and review related literature on ageing and associated concepts and theories. This database was used because it provides a wide coverage of ageing research including healthcare delivery, psychology, public policy and social and economic contexts. The

following keywords were used in our search: ageing or *aging* (American spelling), active ageing, successful ageing, positive ageing, productive ageing, successful and positive ageing, healthy ageing, and graceful ageing. Ageing with grace and ageing gracefully were also searched as variants to the graceful ageing term. The search was filtered to generate journal articles from 2005 - 2011. This literature search generated results reflected in Table 1.

Table 1: Percent coverage of ageing-related journal articles generated from the AgeLine Database (2005-2011)

SEARCH TERM	SEARCH OUTCOME	PERCENT COVERAGE
Ageing / Aging	8997	100%
Active Ageing	432	4.80%
Healthy Ageing	245	2.70%
Successful and Positive Ageing	236	2.60%
Productive Ageing	88	0.90%
<i>Ageing Gracefully*</i>	6	0.06%
Graceful Ageing	2	0.02%
<i>Ageing with Grace*</i>	0	0.00%

**Variants of graceful ageing*

While results identified ageing as an extensively studied field of interest, graceful ageing has not been adequately investigated and supported by empirical evidence, with the lowest percentage coverage of 0.02%. Variants of the term, ageing with grace and ageing gracefully, also occupied low percentage coverage of nil to 0.06% respectively. The literature was scrutinised in order to select theoretical formulations containing ideas that may align with the graceful ageing concept. This paper rationalises the choice of these theories. The second level of the review involved a focussed search of theories associated with different human ageing concepts. Literature compiled and summarised in the first level of search was examined. Theories cited in these concepts were the main focus of this review component. This focused search produced results tabulated in Table 2.

Table 2: Frequency distribution of human ageing concept citations observed and expected from a theory focus search of the literature

THEORY FOCUS	AA*	GA*	HA*	POA*	PRA*	SA*	f
Rehabilitation theory	✓		✓	✓	✓		4
Positive psychology	✓		✓	✓	✓	✓	5
Psychosocial theory	✓	✓		✓	✓	✓	5
TA theory	✓		✓		✓		3
Biomedical theory	✓						1
Evolution theory	✓						1

*Legend: AA-Active Ageing; GA-Graceful Ageing; HA-Healthy Ageing;

POA-Positive Ageing; PRA-Productive Ageing; SA-Successful Ageing

The information summarised in Table 2 suggests that rehabilitation theory, positive psychology, psychosocial theory and transactional analysis theory are shared across the different concepts of human ageing. The theory of evolution and biomedical theory were mentioned only in the active ageing concept. Resulting from this focused review, these theories were excluded. The four theories with the highest frequency proportions were used to formulate the theoretical framework to support the graceful ageing concept.

Rehabilitation, broadly speaking, is defined as an *“holistic and integrated program of medical, physical, psychosocial and vocational interventions that empower a person with a disability to achieve a personally fulfilling, socially meaningful, and functionally effective interaction with the world”* (Parker, Szymanski & Patterson, 2005). Rehabilitation therefore covers many aspects of quality of life including the domains of wellbeing, life satisfaction, and meaning. Positive psychology is a scientific knowledge focusing on the empirical study of strengths-based character, positive emotions and healthy institutions (Seligman, 2002). The fundamental principle governing the science and practice of positive psychology is that human strengths and positive emotions are linked to quality of life variables including wellbeing, life satisfaction, and meaning. According to Erikson’s psychosocial theory of ego development, *old age* is the integration of

completed developmental tasks and resolved conflicts from the first seven stages of life occurring between infancy and later life (Erikson, Erikson & Kivnick, 1994). If these developmental conflicts remain unresolved, persons are believed to transition into *old age* with a sense of despair. This view is related to productivity, intimacy, participation, emotional wellbeing, life satisfaction, and meaning. Transactional analysis or TA is an elegant psychological theory that explains human personality and interactions (Steiner, 2005). TA's ego-states framework reveals interesting ideas relevant to the Parent's quest for meaning and life satisfaction, the Adult's aim for emotional balance and productivity, and the Child's innate need for safety and intimacy. TA theory has been widely received as a practical method of coping with transitions eventuating from childhood to *old age*. Overall, graceful ageing is a concept that can be rationalised within the domains of rehabilitation theory, positive psychology, psychosocial theory of ego development, and TA theory. It is conceived from overlapping ideas within these theoretical paradigms. These ideas retrospectively relate to quality of life variables discussed earlier in this article. More importantly, specific context variables such as wellbeing, life satisfaction and meaning intersect across these theories.

Implications for policy and practice

This paper aims to explore the graceful ageing concept and document positive images of ageing transitions. This aim aligns with Australia's national research priority, *"promoting and maintaining good health"*, and relates to the goal, *"ageing well, ageing productively"* (Kendig et al., 2001). It is consistent with the strategic research theme of *"developing positive images of ageing and supporting continued social participation"* (AIHW, 2003). In a global context, it resonates support to the United Nation's research agenda, *"determinants of ageing"* and *"quality of life and ageing in diverse cultural, socio-economic and environmental situations"* (UN, 2001). Exploring graceful ageing has implications for the wellbeing framework of senior advocacy groups. Translating meanings of this concept into practice may empower policymakers and service providers to help older citizens to age well, age in place, and remain valued members of society (COTA, 2008).

Summary

Based on our systematic review, we conclude that conducting research to define graceful ageing and explore views of ageing transitions is plausible. Firstly, our literature survey reveals numerous research evidence on ageing and associated concepts. While anecdotal information citing graceful ageing as a concept akin to beauty, elegance and youthful culture exists in the literature, empirical evidence is limited. Secondly, there are growing interests in this concept with the propagation of its lackadaisical use as a jargon in marketing anti-ageing consumer products, promoting healthy ageing interventions, and accelerating our relentless search for

the fountain of youth. Further investigating this concept is an innovative step towards clarifying its definition and refining its meaning. Lastly, research on this concept may deepen our understanding of graceful ageing and provide answers to potential questions: “(1) *What does it mean to age gracefully?*”, “(2) *What context variables are correlated with graceful ageing?*”, and “(3) *From these variables, which are the best predictors of the graceful ageing experience?*”. If answered with empirical evidence, these answers may change the way we construe human ageing. With increasing consumer demands for age-defying interventions and global campaigns for age-friendly societies and ageing transitions, an opportunity to cement facts and stimulate intellectual discourse on this topic has come.

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BILINGUALISM IN THE AGEING POPULATION: CONSEQUENCES OF LANGUAGE CHANGE AND LANGUAGE LOSS IN BILINGUAL DEMENTIA AND APHASIA

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Abstract

Bilingualism is prevalent and increasing in Australia, particularly in the ageing population. Older individuals are at higher risk of language and communication impairment due to strokes and dementia. Communication and language impairment impact on the individual's independence, daily functioning and psychosocial wellbeing, and on carer stress. For bilingual adults, the extent, type and time-course of impairment often presents differently in each language. Accurate diagnosis and management is dependent on thorough assessment in each language, yet detailed cognitive and communicative assessment often continues to be conducted in English only. Given the increasing bilingual aged population, it is important that practitioners and service providers are aware of the impact of communication impairment in bilinguals, and the need for assessment in both languages. This paper describes patterns of language change in bilinguals with acquired language impairment (aphasia) and dementia, and the impact on social interaction and independent functioning. Research findings from a recent empirical study show that bilingual individuals previously able to fluently speak English and a community language (Rarotongan Cook Islands Maori, Maltese, French) were impaired in each language and impaired in their ability to switch languages in conversation, a typical part of everyday interaction. Impaired communication skill in each language impacted on their ability to participate in daily community activities, to function independently at home, and on quality of life and wellbeing for both the individual and carer. Implications of this study and recommendations for future care and management of the bilingual aged population with communication impairments are discussed.

Rationale

Language is of central importance to daily functioning, social engagement and emotional wellbeing, involving the ability to express oneself, comprehend conversation, and communicate information. Bilingual individuals of culturally and linguistically diverse backgrounds use two (or more) languages to communicate effectively in both the wider English-speaking community and at home. In Australia, bilingualism is prevalent and increasing, particularly in the ageing population. Over 30% of individuals aged 65 and older speak a language other than English (ABS, 2006). Older bilingual and monolingual individuals are at

higher risk of language and communication impairment due to strokes and dementia. Impaired language and communication abilities associated with aphasia following stroke and dementia severely limit the individual's independence, daily functioning, and social interaction (Cruice et al., 2011, Darrigrand et al., 2011, Hilari, 2011). This has a significant negative impact on both the individual's psychological wellbeing and the level of carer stress. For example, adults with aphasia manifest a severely reduced ability to participate in typical daily activities, such as using the telephone, completing financial transactions using a credit card or chequebook, and reading and filling out forms (Darrigrand et al., 2011). Notably, adults with communication impairment report participating in fewer activities and worse quality of life after stroke than people without aphasia, even when physical function, well-being and social supports are similar (Hilari, 2011), suggesting that barriers are present in the community that prevent greater participation by adults with communication impairments. Likewise, language impairment in bilingual and monolingual adults with dementia is often one of the early symptoms and affects the individual's interaction, level of functioning, behaviour, and social interaction (Baker, 1996, Potkins et al., 2003). Subsequent loss of the ability to maintain meaningful conversations is both a source of distress for families (Smith et al., 2011) and adds to carer burden and stress (Potkins et al., 2003, Smith et al., 2011).

Bilingual older adults with language and communication impairments face a double handicap as not only are both languages usually affected, but also proficiency in English may be disproportionately affected, resulting in loss of ability to communicate in the wider community (Baker, 1993, 1996). Severity of language impairment and patterns of language impairment in bilingual older adults can vary over time, thus necessitating assessment in each language for accurate diagnosis and clinical management (Goral et al., 2008, Kohnert, 2009, Paradis, 2008).

Despite friendships and social interaction being an important buffer in times of adversity, older adults with aphasia and dementia also experience reduced social interaction, with fewer friends, and smaller social networks (Davidson et al., 2008, Northcott & Hilari, 2011). Moreover, their carers also experience decreased social interaction, leisure time, and increased levels of stress, responsibility and burden of care (Nätterlund, 2010, Pellerin et al., 2011). For bilingual individuals and families this can be particularly acute due to reduced proficiency in English. The negative impact on social interaction with friends, for both the individual and the carer, is particularly of concern, as friendships are known to be an important factor in maintaining well-being and quality of life, and may even benefit sustained cognitive function (Newsom et al., 1996, Seeman et al., 2001).

An improved understanding of the impact of language impairment and change for older bilingual adults with aphasia or dementia and their carers will assist the implementation of strategies to increase social interaction and independence of functioning, reduce barriers to community participation, and improve quality of

life for the individual and carer. This study investigated patterns of language change and language loss in bilingual adults with aphasia, the impact on independence, social interaction and wellbeing, and the implications for bilingual older adults with dementia. Diverse language groups were included to ensure cross-linguistic validation of findings.

Methods

Quantitative experimental research methods together with qualitative analysis of semi-structured interviews were used for this research.

Participants

Five proficient bilingual adults with aphasia (aged 49-80) speaking English and Rarotongan Cook Islands Maori (n=2), Maltese (n=1) or French (n=2), and 5 controls from the same language communities participated in this research. Participants with aphasia were recruited from the community through speech pathologists of participating hospitals; control participants were recruited from the community. All participants were fluently bilingual from early childhood, spoke both languages proficiently, were literate in both languages, used both languages on a daily basis in home, work and social contexts, and switched languages in conversation.

Testing

All participants completed a background language questionnaire and semi-structured interview, conversational sample, and two novel language tasks developed for this study: (a) spoken sentence production (b) lexical selection, designed to test the ability to grammatically switch between languages. In addition, the participants with aphasia completed language and cognitive testing in each single language to assess similarity or difference of impairment between languages. One participant with aphasia completed all aspects except the spoken production task due to the severity of his expressive impairment.

The spoken sentence production and lexical selection tasks each consisted of a set of 14 simple sentences with the verb omitted. The language of the subject and object of the sentences were manipulated to create four single language conditions and four dual language conditions, resulting in a total of 112 trials for each task. Half the sentences contained a noun phrase subject (e.g. 'the woman') and half contained the corresponding pronoun subject (e.g. 'she'). Participants were shown a pictured event (e.g. the woman eats the apple) with the subject and object printed underneath (e.g. the woman _ the apple) and asked to complete the sentence (e.g. the woman EATS the apple). Sentences with a pronoun subject were expected to be completed with the verb in the same language, whereas sentences with a noun phrase subject may be completed with the verb in either language, consistent with conversational language switching norms.

Semi-structured Interviews

Qualitative analysis of themes emerging from semi-structured interviews and conversational samples was conducted and compared to the literature on the impact of language and communication impairment in middle-aged and older adults with aphasia.

Issues in the recruitment of bilingual adults for this study included difficulty in locating bilingual subjects with aphasia, attributable to both the under-identification of bilingualism, and their limited participation in community stroke and communication groups. This is indicative of the social isolation they and their families experience. Consequently the number of participants was small. Due to communication and physical limitations, they were unable to easily access public institutions, necessitating research to be conducted in the home. Additionally test materials had to be developed and adapted for 3 distinct language pairs, requiring close collaboration with bilingual consultants from several language communities (see Miller Amberber, 2011).

Results

Results of the testing in each single language and on the language-switching tasks found impairment of language switching and impairment in each single language for all aphasic participants, unlike the controls. First, for each participant with aphasia, a parallel pattern of language impairment was seen in each single language determined by scores relative to normative data. Thus for these early and proficient bilingual adults, both languages were affected to the same extent despite marked differences in their grammatical structures. Second, the results showed the participants with aphasia presented with grammatically impaired ability to switch languages. This difference was statistically significant for each aphasic and matched control, and for the group as a whole (paired samples t-test, spoken sentence production, $t(3) = -4.377$, $p = 0.022$, two-tailed; lexical selection, $t(4) = -4.785$, $p = 0.009$ two-tailed). A similar pattern of impairment was evident for both the spoken sentence production and lexical selection tasks, showing that this was due to a central language impairment. Third, a similar pattern of impairment was seen across all the participants with aphasia. Thus despite the small number of participants, the findings were robust across 3 diverse language pairs, attesting to their cross-linguistic validity. (For details see Miller Amberber et al., 2011).

Themes from interviews

Significant loss, reduced social interaction, depression and sadness associated with communication and language impairment were described by all participants with aphasia. In addition they expressed dismay at the effect of impairment in English and the negative impact on their ability to engage with neighbours and the wider community. Bilinguals with aphasia reported significantly reduced conversational interaction, made statements such as "(I) talk (as) little as

possible", did not visit friends nor accept visits due to impaired language, refused to answer the phone because of the communication impairment, required assistance to shop, and to complete household tasks that were previously a fulfilling function, no longer participated in previous artistic activities, had difficulty making medical concerns known to their doctors, and could not readily participate in rapid conversations involving several people, despite the support of family. Altered patterns of interaction with younger and older relatives were also described. Social activities were severely reduced, and personal independence was limited due to the need for assistance with communication and comprehension in most contexts. Individuals described themselves as previously being the ones who told stories and jokes and who planned and organised social activities. Altered life circumstances included being unable to return to work, being unable to fulfill a planned interstate move, and needing to return to live with relatives. Practical difficulties included inability to fill out medical and government forms, inability to make phone calls, needing to rely on family members to liaise with government and other service providers, and needing family members to translate due to overall reduced capacity in English. This placed additional responsibility and stress on carers who were themselves often dealing with significant chronic illnesses.

Application to bilinguals with dementia

Clinical casework and the limited literature available shows that bilingual older adults with dementia and their carers face similar patterns of language change and loss, and a similar negative impact on social interaction, participation in community activities, independence, daily activities, and well-being (Ekman, 1996). Language changes often (but not always) include greater loss of proficiency in English, and can involve reduced or increased language switching (Gollan et al., 2010). Often the affected parent's reduced ability to comprehend or speak English presents significant communication issues if the children have learnt English only. Carer stress and burden of care were increased by the altered communication patterns and loss of ability to converse and share meaningful conversations with their partner or parent.

Implications for policy and practice

This research highlights the significant impact of communication and language impairment in bilingual older adults and their families. It is essential that the impact of language and communication impairment is understood by all service providers. Communication and language impairment affect both the individual with aphasia or dementia, and the carer's emotional well-being, social engagement and independence in daily activities. For bilingual older adults there can be a double loss if proficiency in English, the language of the wider community and service provision, is more severely impaired. Impaired language-switching ability impacts on the individual's participation in family and community social interaction. Yet current independence measures and recovery of function

continue to focus largely on physical mobility and functional activities of daily living as a measure of care required and degree of impairment or recovery attained. For example, the current Aged Care Assessment Program codes used to identify the level of residential care required have no code for expressive or receptive aphasia, despite the fact that this can be the major or sole reason for the care needs of individuals with severe language and communication impairment.

Policies and practices need to be in place to recognise and address the significant needs of bilingual and monolingual older adults with language and communication impairments, and their families and carers. Currently the communication needs of bilingual and monolingual older adults with aphasia and dementia receive relatively little attention and funding. Specific recommendations include:

- Reduce barriers to participation in community activities e.g. establish aphasia-friendly community activity groups, conduct training of hostel, nursing home, day centre staff in strategies to communicate with language-impaired older adults
- Enhance social interaction e.g. instigate development and training of communication volunteer visitor service, including bilingual communication visitors
- Increase level of service of community speech pathology programmes and practitioners to provide communication and language training programmes for bilingual and monolingual older adults with language impairment due to stroke or dementia
- Promote acceptance and understanding of adult language and communication impairments in the wider community through a multi-media health promotion and education campaign, with the aim of reducing social isolation and improving social participation, well-being and quality of life in older adults with language and communication impairments and their families.

Implications for testing of bilinguals

Language changes and loss may be similar or may differ across the languages spoken by older bilinguals with communication impairment. Bilingual history and the specific type of aphasia or dementia can affect the pattern of language impairment in each language. Assessment in each language is essential for accurate diagnosis and clinical management, and for family education.

Summary

This study investigated language changes and language loss in bilingual adults with aphasia and dementia, and the impact on independence, social interaction and well-being. show that bilingual individuals previously able to fluently speak English and a community language (Rarotongan Cook Islands Maori, Maltese,

French) were impaired in each language and impaired in their ability to switch languages in conversation. Impaired language and communication skills reduced their ability to participate in daily community activities and to function independently at home, and decreased quality of life and wellbeing for both the individual and carer. Implications of this study and recommendations for future care and management of the bilingual aged population with communication impairments were discussed.

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