

Enabling active ageing

Conference Proceedings

The 12th National Conference of Emerging Researchers in Ageing

**25 & 26 November 2013
SMC Function Centre, Sydney, Australia**

Presented by



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WELCOME FROM THE 2013 CONFERENCE CONVENORS



Dr Kate O'Loughlin



Prof Lindy Clemson

Welcome to Sydney and ERA 2013! It is our pleasure to host ERA this year. As in previous years the conference has an extensive program that brings together postgraduate students from a broad range of research areas to share their interests in ageing and discuss the latest research. We have chosen the theme *Enabling active ageing*, which focuses on policies, strategies and interventions to support older people to maximize their abilities, be in control of their lives, and remain independent and engaged in community life.

We have 49 oral presentations, 19 posters and 7 full papers that embrace these themes.

On the second day we are pleased to present two workshops: *Knowledge translation and engaging with stakeholders* and *Staying on track with your PhD*. The workshop on knowledge translation will feature key experts talking about the challenges in implementing evidence-based changes that support active ageing. The staying on track workshop will feature presentations from a university student support organisation and a counselling service as well as a current and previous doctoral student talking about their experiences. Both workshops will involve hands-on activities and group discussion. Those who participate in the workshops will have the opportunity to work in a small group environment and continue the networking that will get under way on the first day of the conference.

We would like to acknowledge and thank our generous sponsors CEPAR, AAG, IRT and National Seniors Australia, and acknowledge the support of ERA and Monash University. We would like to thank the other members of our scientific committee – Dr Vanessa Loh and Ms Kylie Richardson.

So make the most of your time here, enjoy yourselves and we look forward to meeting you and hearing about your research in ageing.

Kate O'Loughlin and Lindy Clemson
Ageing, Work & Health Research Unit,
Faculty of Health Sciences
The University of Sydney

OPENING PLENARY SESSION - KEYNOTE PRESENTER AND OFFICIAL WELCOME



Professor Bob Cumming

Professor of Epidemiology and Geriatric Medicine

Keynote presentation - "Public Health and Ageing in sub-Saharan Africa - a personal perspective"

Bob Cumming studied medicine at UNSW and then trained as an epidemiologist at Columbia University in New York and at the University of Sydney. He has worked at the University of Sydney since 1990. He has also spent time at UCSF, the University of Wisconsin and Makerere University in Uganda. Bob is a Life Member of the Australasian Epidemiological Association.

DEAN – FACULTY OF HEALTH SCIENCES



Professor Kathy Refshauge

Kathryn Refshauge is Professor of Physiotherapy and Dean of the Faculty of Health Sciences at the University of Sydney. She was previously Associate Dean (Research & Innovation), and Head, School of Physiotherapy. She has held various positions in many professional bodies and academic committees. She is currently on the governing boards of the Charles Perkins Centre for obesity, diabetes and cardiovascular disease, and the Brain and Mind Research Institute, and a member of the NSW Population and Health Services Ethics Committee. She is an active researcher in chronic pain and musculoskeletal disorders and is on the editorial board of 3 international journals.

NSW MINISTER FOR AGEING, MINISTER FOR DISABILITY SERVICES AND MINISTER FOR THE ILLAWARRA



The Hon. John George Ajaka MLC

The Minister was elected as a Member of the NSW Parliament Legislative Council in 2007, and has previously served as Parliamentary Secretary for Transport and Roads, and before that, as Parliamentary Secretary to the Leader of the Opposition. He has also served as the Chairperson of Legislative Council General Purpose Standing Committee No. 3, and of the Select Committee on the NSW Taxi Industry, as well as being a member of the Legislative Council Standing Committee on Law and Justice, a member of the Privileges Committee, and the Committee on Children and Young People.

Before entering Parliament, the Minister served as a Councillor for the City of Rockdale from 2004 until 2008. The Minister has previously operated a legal practice over 25 years. He served on the board of a number of companies, including a public company. The Minister is married and has 6 daughters.

ACKNOWLEDGEMENTS

We would like to thank our generous sponsors for ERA 2013:

- | | |
|---|--------------------------------|
| ○ CEPAR | – Primary ERA Sponsor |
| ○ AAG | – Silver Sponsor |
| ○ IRT Research Foundation | – Conference Reception Sponsor |
| ○ National Seniors Productive Ageing Centre | – Keynote address Sponsor |

In addition, we are pleased to include satchel inserts and/ or trade tables for the following organisations:

- Alzheimer's Australia Research Foundation
- Carers NSW

The conference committee for ERA 2013 included: Dr Kate O'Loughlin, Professor Lindy Clemson (Convenors), Jayne Groves (CEPAR USyd), Sylvia Lohrengel (University of Sydney), Dr Matthew Carroll and Sue Hunt (Monash University, ERA).

We would like to acknowledge the assistance of the ERA initiative and Monash University in supporting the ERA conferences.

PRIZES

Helen Bartlett Prize for Innovation in Ageing Research (\$250), presented by Dr Matthew Carroll

The Helen Bartlett Prize for Innovation is awarded for the most original and creative research presented at the conference (oral presentation or poster). The prize recognises the outstanding contribution made by Professor Helen Bartlett, Pro Vice-Chancellor Monash Malaysia, to the field of ageing research in Australia, particularly as the founder of the ERA initiative. A prize to the value of \$250 and a certificate will be awarded to the winning student.

Best Oral Presentation (\$250 + 1 year of AAG Student Membership), presented by Carrie Hayter, AAG NSW Student Representative

The Australian Association of Gerontology (AAG) prize is awarded to the best oral presentation at the ERA 2013 conference. AAG is Australia's largest multidisciplinary professional association of people who work in, or have an interest in, ageing. The AAG NSW Division provides good networking opportunities to members and anyone interested in ageing issues.

ERA Best Poster (\$250), presented by Professor Michael Kassiou, Associate Dean Research & Innovation, Faculty of Health Sciences

Successful poster presentations require great skill in displaying just the right amount of content in an eye-catching way in order to get the desired message across. The poster considered by the judging panel to be the best will be awarded a prize to the value of \$250 and a certificate.

ERA Best Full Paper (\$250), presented by Professor Michael Kassiou

ERA prides itself on providing the opportunity to conference presenters to submit a full paper for peer review and have these papers included in the conference proceedings. The full paper considered by the judging panel to be the best will be awarded a prize to the value of \$250 and a certificate.

Best presentation by an AAG student member (\$250), presented by Dr Tony Coles, AAG

The AAG plays an active role in supporting the development of student and early career researchers. In line with this support for their members, the AAG National prize will be awarded to the best presentation by an AAG student member in ageing as considered by an AAG judging panel.

Bursaries

One of the ways the ERA initiative provides support for the training of a new generation of emerging researchers is through the provision of travel bursaries to ERA 2013 participants. This year 19 bursaries valued at \$150 and \$250 each were provided to higher degree students to assist with the expenses of participating in the conference.

POST-CONFERENCE WORKSHOPS

The 2013 ERA Conference will feature two workshops for postgraduate students to be held concurrently on the morning of Tuesday 26 November:

- Staying on track with your PhD
- Knowledge translation, including engaging with stakeholders

Both workshops will feature presentations from key speakers, hands-on group activities, and general discussion.

Staying on track with your PhD

Presenters:

- Dr Andrea Petriwskyj, Research Fellow, UQ/Blue Care Research & Practice Development Centre, The University of Queensland
- Hayley Stone, Student Advice and Advocacy Officer, Sydney University Postgraduate Representative Association (SUPRA)
- University counselling service officer
- Jacqueline Wesson, current higher degree student, Faculty of Health Sciences, University of Sydney

Workshop overview:

One of the greatest challenges for PhD students is staying on track with their research, including setting clear priorities, maintaining a satisfactory work-life balance, working with supervisors, etc. This workshop will feature presentations from a university postgraduate student association (Hayley) and a counselling service, providing expert advice on strategies for time management, goal setting, and accessing appropriate support. The workshop will also feature a current postgraduate student (Jacqueline) and a graduate (Andrea) talking about their PhD journeys and the strategies that worked for them.

Knowledge translation, including engaging with stakeholders

Presenters:

- Barbara Squires, Head of Research and Advocacy, IRT Group
- Associate Professor Vasi Naganathan, Centre for Education and Research on Ageing & Sydney Medical School, University of Sydney, and Consultant Geriatrician, Concord Hospital
- Blythe O'Hara, Executive Officer, Prevention Research Collaboration, Sydney School of Public Health
- Anne-Marie Elias, Project Manager, External Stakeholder Communications, NSW Department of Family and Community Service

Workshop overview:

There is increasing awareness about the need to translate research into practice and the challenges faced in bringing about real evidence-based change for older people. This workshop will feature a number of experts providing their insights into research translation in terms of housing and aged care practice (Barbara), clinical research including falls and evidence-based medicine (Vasi), obesity, diabetes, and physical activity programs (Blythe), and the involvement of policymakers and stakeholder organisations (Anne-Marie).

A NOTE FROM OUR SPONSORS:



The Australian Association of Gerontology (AAG) is delighted to once again be sponsoring the Emerging Researchers in Ageing Conference.

The AAG is the peak national body supporting gerontologists and those with a fervent interest in ageing research. We have over 800 members around Australia and we run a series of events at the local and national level, including an annual national conference. Many of the events we run are free for members, or are offered at a significantly discounted rate. The AAG also supports a raft of Special Interest Groups, as well as networking activities with research centres around Australia.

The AAG also supports a vibrant Student and Early Career Group. Students and early career researchers and practitioners are encouraged to engage in a range of collegial activities throughout the year to assist them to develop their professional skills in research and practice, as well as provide them with networks to help grow their careers in gerontology. Activities include workshops, seminars, symposia and webinars, all designed with professional development in mind.

If you are new to the area of ageing research, we would encourage you to consider joining the AAG. Joining the AAG will open up a world of opportunities in gerontology and support you in your passion for ageing research.

We look forward to meeting with you at the conference. If you have any questions, please come and say hello, or visit the AAG booth for more information. Enjoy the conference.

Sincerely,



Professor Julie Byles
President



Claudia Meyer (PhD Candidate)
President, Student and Early Career Group





IRT Group is one of Australia's largest community based seniors lifestyle and care providers. Founded over 40 years ago by dedicated and visionary pioneers, IRT Group is now an award-winning, progressive and innovative company committed to providing holistic lifestyle and care solutions to seniors.

IRT Research Foundation

Launched in May 2009, the IRT Research Foundation aligns with IRT's mission, to create communities where seniors achieve their optimum quality of life. The IRT Research Foundation funds research projects which assist in a greater understanding of the ageing process and the care and wellbeing of seniors.

Since its establishment, the IRT Research Foundation has committed over \$1M through grants to leading Australian researchers. Research projects on topics affecting older Australians have been awarded funding between \$50,000 and \$200,000 through an annual competitive grants round. The next competitive grants round is expected to open in May 2014. The current priority for the IRT Research Foundation is research that will explore how seniors can remain independent and at home longer.

IRT Group also facilitates research projects that benefit older Australians through in-kind support and in some cases, the voluntary participation of IRT Lifestyle & Care residents and clients.

If you would like to learn more about IRT and the IRT Research Foundation please visit www.irt.org.au or e-mail irtfoundation@irt.org.au to request to be added to our newsletter mailing list.



The National Seniors Productive Ageing Centre (NSPAC) is pleased to be associated with the 12th National Emerging Researchers in Ageing Conference.

Based in Melbourne, NSPAC conducts research, education and information activities to advance knowledge and understanding to improve the quality of life of people aged 50 and over. The Centre is jointly funded by National Seniors Australia, the largest collective voice of Australia's senior population, and the Department of Social Services.

NSPAC's activities include a detailed publication schedule, Productive Ageing Forums addressing major topics of importance to seniors, an annual grants program, online resources to inform the public about Australia's ageing population, and tools to assist seniors remain healthy and productive as they age. These tools include the self-assessment Healthy Ageing Quiz and Retirement Quiz.

NSPAC seeks to build collaborations with researchers and stakeholders in ageing from universities, government, community organisations, peak bodies and businesses throughout Australia and globally. Please contact the NSPAC Director Dr Tim Adair on 03 9650 6144 or t.adair@nationalseniors.com.au to discuss the Centre's activities further.

ERA 2014 ANNOUNCEMENT

Come to South Australia for the 13th National Emerging Researchers in Ageing Conference



The 2014 ERA conference will be held in Adelaide and will be co-hosted by Flinders Centre for Ageing Study, Flinders University, and the Australian Population and Migration Research Centre, University of Adelaide. This collaboration between two leading research centres will ensure the 2014 conference is as vibrant and diverse as we have come to expect from the ERA conferences.

More information about the conference including the venue and call for abstracts will be available at www.era.edu.au/ERA+Conferences early next year.

The conference will be held immediately prior to the Australian Association of Gerontology (AAG) conference in Adelaide making it easy for participants to transition between the two ageing conferences.

Conference co-convened by:



With the support of:



12th National Conference of Emerging Researchers in Ageing

25-26 November 2013

SMC Conference and Function Centre, Sydney

66 Goulburn Street Sydney NSW 2000

Conference Program

Monday 25 November 2013

8:00AM
onwards

Registration

9:00 – 10:10

Opening Plenary - Ionic Room

09.00 – 09.15

Acknowledgement to Country/ Welcome to ERA

Dr Kate O'Loughlin

Conference Convenor

09.15 – 09.20

Welcome from the University of Sydney

Professor Kathryn Refshauge

Dean, Faculty of Health Sciences

09.20 – 09.30

Opening and Welcome

The Hon. John George Ajaka, MLC

MP - Minister for Ageing & Disability Services, NSW

09.30 – 10.10

Keynote Address (sponsored by the National Seniors Australia Productive Ageing Centre)

"Public Health and Ageing in sub-Saharan Africa - a personal perspective"

Professor Bob Cumming

Professor of Epidemiology and Geriatric Medicine

10:10 –
10:40

Morning Tea (Foyer) and Poster Viewing (Ionic Room)

	Session A	Session B	Session C	Session D
10:40 – 12:00	Biological and Physiological Ageing Ionic Room <i>Chair: Jacqueline Wesson</i>	Older Workers and Workforce Participation Doric Room <i>Chair: Dr Jack Noone</i>	Falls, Balance and Exercise Tuscan Room <i>Chair: Dr Matthew Carroll</i>	Depression and Pain Management Corinthian Room <i>Chair: Dr Kate O'Loughlin</i>
	<p>1. The role of the proteins of the Nuclear Envelope in Age-Related Bone Loss Sandra Bermeo</p> <p>2. Low Dietary Protein Intake Protects against Age-related Hepatic Changes and Provides a Link between Caloric Restrictions and Inflamm- ageing Rahul Gokarn</p> <p>3. Constipation and Laxatives Use in a Community -based Elderly Population Barry Werth</p> <p>4. Medications Use and Mental Health outcome of Women aged 76-81 Maha Alsalami</p> <p>5. Does daily low dose aspirin influence the incidence and/or progression of Age-related macular degeneration? Shreeleka Rao</p>	<p>1. A Systematic Review of the burden and risk factors associated with workplace productivity losses among people with chronic knee pain Maria Agalotis</p> <p>2. Workforce Participation Patterns in Young and Middle Age Women - Impact of Chronic Diseases and Competing Activities Tazeen Majeed</p> <p>3. Sustainable work for older workers: Re-thinking Effort-Reward Imbalance Claudia Pitts</p> <p>4. Moving Towards the Unknown; Enabling Active Ageing in Retirement Alana Hewitt</p>	<p>1. Enabling Active Ageing in Residential Aged Care: Strength and Balance Exercise for the Prevention of Falls Jennie Hewitt</p> <p>2. Comparative Effects of Two Aqua-Based Exercise Programs on Physical Function, Balance and Perceived Quality of Life in Older Adults with Osteoarthritis Alison Fiskien</p> <p>3. Vision Impairment Balance and Mobility Michael Gleeson</p> <p>4. Older People's Perspectives on Participation in Exercise and Physical activity: A Systematic Review and Thematic Synthesis of Qualitative Literature Marcia Franco</p> <p>5. The Perceptions of Older People on Exercise and Participation: Do men's and women's views differ? Lynda Woodward</p>	<p>1. Pain Experience Following Knee Replacement Surgery: The Influence of Ethnicity Ee Yuee Chan</p> <p>2. The Influence of perceived stress on the onset of Arthritis in Women Melissa Harris</p> <p>3. Using a Mixed Methods Design and QEEG Parameters to track Improvements in mid to later life Depression after a Choir Therapy Program Kirstin Robertson-Gillam</p>
12:00 – 1:00	Lunch (Foyer) and Poster Viewing (Ionic Room)			

	Session E	Session F	Session G
1:00 – 2:20	Social Dimensions and Communication Corinthian Room <i>Chair: Dr Matthew Carroll</i>	Ageing and Activity Doric Room <i>Chair: Dr Kate O'Loughlin</i>	Tool Assessments and Methodology Ionic Room <i>Chair: Prof Lindy Clemson</i>
	<p>1. The Supportive Network: Socially isolated rural older people, Social Workers and ICT Steven Baker</p> <p>2. The changing arena of ageing: Using critical discourse methods to analyse current policy directions Belinda Cash</p> <p>3. The Perception of Auditory and Auditory-Visual Lombard Speech by younger and older adults Michael Fitzpatrick</p> <p>4. Dramatherapy with older people with Dementia Joanna Jaaniste</p> <p>5. Enabling Active Reflection through Creating a Personal Archive Joanne Mihelcic</p> <p>6. Understanding the meaning of living with Parkinson's disease in an Australian community setting from the perspectives of the person diagnosed and their partner/ carer Jo Brady</p>	<p>1. Putting Theory into Practice: An operational framework for healthy ageing Josephine Boylan</p> <p>2. Behind the Wheel: A Snapshot of Older Driver Function and Driving Exposure Kristy Coxon</p> <p>3. In-Vehicle Monitoring of Older Drivers to Investigate Driving Exposure, Behaviour and Safety Anna Chevalier</p> <p>4. Cognitive-Impairment- Free Life Expectancy for Australia and Seven Latin American and Caribbean Countries Kimberly Ashby-Mitchell</p> <p>5. A Review of Twin Studies in Search of Keys for Healthy Ageing Seyed Amir Hossein Batouli</p> <p>6. Resilience of grandparents fostering orphans in Zimbabwe Magen Mutepe</p>	<p>1. A Mortality Risk Prediction Tool for Older Adults with Lymph Node -Positive Colon Cancer Mikaela Jorgensen</p> <p>2. The methodological challenges of doing older person research in an acute care setting Joanne Harmon</p> <p>3. Enabling Function: How do we measure performance in Complex Everyday Activities to Estimate Functional Cognition in Older Adults? A systematic Review and Evaluation of Measurement Properties Jacqueline Wesson</p> <p>4. Diet History Questionnaire for Older Men: Development, Use and Preliminary Evaluation Rosilene Waern</p> <p>5. Prospective Memory: Development of a Standardised Questionnaire and Theoretical Evaluation Nicole Sudgen</p> <p>6. Modelling Subjective Survival: Beyond Point Estimates of Expected Lifetimes Shang Wu</p>
2:20 – 2:50	Afternoon Tea (Foyer) and Poster Viewing (Ionic Room)		

	Session H	Session J	Session K
2:50 – 4:10	Dementia and Carers Ionic Room <i>Chair: Claire O'Connor</i>	Community, Healthcare and Practice Corinthian Room <i>Chair: Jo Brady</i>	Health Conditions and Management Doric Room <i>Chair: Prof Lindy Clemson</i>
	<p>1. From Driving Miss Daisy to the Iron Lady: Dementia on the Silver Screen Rose Capp</p> <p>2. Recruiting and Retaining People with Dementia and their caregivers - Lessons from the Field Claudia Meyer</p> <p>3. Staff and Family Perceptions of Wandering Related Boundary Transgression Margaret MacAndrew</p> <p>4. Dietary intake and major sources of flavonoids in older Australians with Alzheimers type dementia Katherine Caldwell</p> <p>5. Validity and Reliability of Functional Performance in Dementia Research Benjamin Fox</p> <p>6. Developing a Medication Management Resource for the Ethnic Minority Informal Caregivers of people Living with Dementia Robyn Gillespie</p>	<p>1. Long Term Care Insurance: a survey of insurer attitudes Bridget Browne</p> <p>2. Investigating Cataract Referral Practices Utilised by Australian Optometrists Vu Do</p> <p>3. Health and Community Services in older adults recently discharged from hospital: utilisation, costs and impact of home-exercise intervention Inez Farag</p>	<p>1. Measuring the Prevalence and Patterns of Multimorbidity in Australia Christopher Harrison</p> <p>2. Investigation of poorer bladder cancer survival in women than men in NSW Australia: A data linkage study Elizabeth Tracey</p> <p>3. The pattern of association between age and chronic disease risk factors among urban Indonesian women Yodi Christiani</p> <p>4. Issues with Hypertension Management in the Elderly Tariq Alhawassi</p> <p>5. Concern and Risk Perception for Osteoporosis and Fracture among Post-Menopausal Australian Women: Results from the Global Longitudinal Osteoporosis Study in Women (GLOW) Annica Barcenilla-Wong</p>
4.10 – 4.25	Poster Session – Ionic Room		

4:25 – 5:00	<p><u>Closing Plenary</u> <u>Ionic Room</u></p> <p>Professor John Piggott CEPAR, primary ERA Sponsor</p> <p>Word from Dr Tony Coles, Australian Association of Gerontology Conference Silver Sponsor</p> <p>Word from Barbara Squires, IRT Research Foundation Sponsor of Conference Reception</p> <p>ERA Matters – including ERA 2014 conference Dr Matthew Carroll ERA National Convenor</p> <p>Announcement of Prizes Prof Michael Kassiou FHS Associate Dean Research & Innovation</p> <p>Close of Day 1</p>
5:00–6:00	<p>Conference Reception (sponsored by the IRT Research Foundation) Foyer</p>

Tuesday 26 November 2012

Conference Workshops

9:00 - 10:30	<p>Staying on track with your PhD Part 1</p> <p>Corinthian Room</p>	<p>Knowledge translation, including engaging with stakeholders – Part 1</p> <p>Doric Room</p>
10:30 - 11:00	<p>Morning Tea</p> <p>Foyer</p>	
11:00 - 12:30	<p>Staying on track with your PhD Part 2</p> <p>Corinthian Room</p>	<p>Knowledge translation, including engaging with stakeholders – Part 2</p> <p>Doric Room</p>
12:30	<p>End of conference workshops</p>	

POSTERS

Posters will be displayed in the Ionic Room throughout Monday, 25 November 2013. Delegates are encouraged to take time during the tea and lunch breaks to view the posters and meet the authors.

No	Title	Authors
1	<i>Prevalence and Risk Factors for Adverse Drug Reactions with Antihypertensive Medications in Elderly Hospitalised Patients: A Study Design</i>	Tariq Alhawassi
2	<i>Using Gerontechnology to support good nutritional habits in the elderly</i>	Heidi Bjerling
3	<i>Neuronal Loss and Pathology in Language- Associated Regions of Logopenic Progressive Aphasia</i>	Anna Britton
4	<i>The ASPREE Healthy Ageing Biobank: Taking the Laboratory to the People</i>	Jacqueline Chew
5	<i>Family member experiences during an older loved one's delirium</i>	Jenny Day
6	<i>Fall Risk Assessment for Elderly People</i>	Maryam Gahramani
7	<i>The Masters Athlete as a Model of Successful Ageing</i>	David Geard
8	<i>The role of Aspirin in prolonging life free of mental and physical disability: The ASPREE Trial</i>	Jack Hall
9	<i>Age Related Physiological Changes in Asthma</i>	Kate Hardaker
10	<i>Impact of Men's Sheds on Older Men's Health: A Mixed Methods Approach</i>	Luckman Hlambelo
11	<i>The significance of Social Networks/Interactions and locality for the wellbeing of older persons</i>	Bethany Keough
12	<i>An Impact of the Ageing Society on the Level of Service at Airports: A cross- cultural and Future Oriented Perspective</i>	Tae Hyun Kim
13	<i>Exploring Ageing and Aged- Care Needs of Lesbian Women</i>	Li-Min Lee
14	<i>Investigation of the Association between Oral Health Outcomes in Older people following a Neck of Femur Fracture</i>	Clare McNally
15	<i>Low-Intensity Exercise Improves Functional Fitness and Quality of Life in Community-Dwelling Sedentary Older Adults</i>	Chaiya Noradechanunt
16	<i>Protein Supplementation may improve physical function in older people</i>	Fiona O'Leary
17	<i>The Focus Study: Falls in Older People with Cataracts - A Longitudinal Evaluation of Impact and Risk</i>	Anna Palagyi
18	<i>Word Retraining Programs can provide Meaningful Benefits to Patients with Semantic Dementia</i>	Sharon Savage
19	<i>Deterioration of Balance in Ageing Mice</i>	Victoria Tung

Abstracts

Oral presentations

SESSION A Biological and Physiological Ageing

THE ROLE OF THE PROTEINS OF THE NUCLEAR ENVELOPE IN AGE-RELATED BONE LOSS

BERMEO Sandra¹, VIDAL Christopher¹, WEI Li¹, DUQUE Gustavo¹

¹Ageing Bone Research Program, University of Sydney, Sydney Medical School – Nepean

The cellular ageing process is linked to the integrity of the proteins of the nuclear envelope (NE). Alterations in the genes codifying these proteins have been associated with progeroid syndromes. In addition, it has been demonstrated that as we age, the expression of at least one of these proteins, Lamin A, decreases. In bone, age-related phenotypic characteristics such as bone loss and marrow fat accumulation are due to alterations in mesenchymal stem cells (MSC) differentiation, which is regulated by NE proteins. However, the molecular mechanisms explaining how aberrant expression of these proteins is associated with age-related bone loss and marrow fat accumulation remains to be elucidated. NE proteins deliver cytoplasmic signalling to the nucleus in a complex fashion by binding transcription factors that regulate MSC differentiation. Lamin A (LMNA), Emerin (EMD) and MAN1 (LEMD3) are three of the most studied NE proteins. Their mechanistic roles have been mainly reported during myoblast differentiation and there is scarce information about their role in osteoblastogenesis and adipogenesis. In this study, we either decreased (liposome-based transfection) or increased (Nucleoporation-based transfection) the expression of each gene (LMNA, EMD, LEMD3) in MSC, which then were stimulated to differentiate into either osteoblasts or adipocytes. Initially, nuclear shape changes were determined by propidium iodide staining. Subsequently, a comprehensive differentiation profile was determined using staining (alizarin red, alkaline phosphatase, oil red O), RT-PCR, western blot, confocal microscopy and transcriptional activity measurement. We found that all three proteins are crucial for osteoblastic and adipogenic differentiation. Both low and over expression of each protein has a differential effect on MSC differentiation potential (Table 1). In consequence, this piece of evidence reinforces the notion that NE proteins are crucial for bone formation and that changes in their expression would explain the bone loss and fat accumulation related with ageing.

LOW DIETARY PROTEIN INTAKE PROTECTS AGAINST AGE-RELATED HEPATIC CHANGES AND PROVIDES A LINK BETWEEN CALORIC RESTRICTION AND INFLAMM-AGEING

GOKARN Rahul^{1,2,3,4}, **SOLON-BIET Samantha M.**^{1,2,3,4}, **MITCHELL Sarah J.**⁵, **WARREN Alessandra**^{1,2,3,4}, **COGGER Victoria C.**^{1,2,3,4}, **DE CABO Rafael**⁵, **SIMPSON Stephen J.**^{1,4}, **MCMAHON Aisling C.**^{1,2,3,4}, **LE COUTEUR David G.**^{1,2,3,4}

¹Sydney Medical School, University of Sydney

²ANZAC Research Institute, Concord RG Hospital, Australia

³Centre for Education and Research on Ageing, Concord RG Hospital, Australia

⁴Charles Perkins Centre, University of Sydney

⁵Laboratory of Experimental Gerontology, National Institute on Ageing, USA

Caloric restriction (CR), and more specifically protein restriction, is known to enhance longevity in a variety of taxa. The liver provides a plausible causal link between diet and ageing, as it plays a crucial role in nutritional metabolism and displays age-related changes such as inflammation, which can be histologically assessed. The relationship between inflammation and ageing, or inflamm-ageing, is a key area of research associated with nutritional intervention, and is crucial to understanding the process of healthy ageing. This study investigated the effects of varying protein-to-carbohydrate (P:C) ratios on hepatic steatosis, fibrosis and inflammatory infiltration. Three month old C57BL6 mice (n=90) were assigned one of three diets varying in P:C ratio for 8-weeks (P:C of 5%:75%, 34%:64%, and 60%:20%) with a fixed fat ratio of 20%, and allocated to ad-libitum (AL) or 40% CR intake regimes. H&E staining of the livers showed a positive correlation between P:C ratio and portal inflammation in AL animals (p=0.0004), but not in CR animals. Sirius Red staining indicated no effect of P:C ratio on fibrosis, however there was a negative correlation between P:C ratio and steatosis in both the AL and CR animals (p= 0.0009 and p=0.002 respectively). Together, these findings suggest that high P:C ratios are linked with increased portal inflammation, and low P:C ratios are linked with hepatic fat accumulation. Also, CR animals displayed less inflammation than AL animals, suggesting that protein restriction may be beneficial for healthy liver function. Thus, the results are consistent with the idea that high protein intake is associated with inflammatory liver changes, while low protein intake (either low P:C ratio or CR) is hepato-protective. This study represents a critically important area of research, as even short-term dietary interventions can have profound effects on inflamm-ageing. Understanding this relationship may help form guidelines to promote healthy ageing.

CONSTIPATION AND LAXATIVE USE IN A COMMUNITY-BASED ELDERLY POPULATION

WERTH Barry¹, WILLIAMS Kylie², PONT Lisa¹

¹University of Sydney

²University of Technology, Sydney

Constipation is relatively common in elderly Australians. Laxatives are widely available in the community and frequently used for self-management. Little is known about laxative use, risk factors for constipation, and changes in prevalence of constipation and laxative use over time. We sought to examine these issues in a community-dwelling elderly population over an 11 year period. We analysed data from the Australian Longitudinal Study of Ageing (ALSA), a longitudinal, multidimensional population-based study of ageing in South Australia. Participants with complete constipation and medication data in 1992/3 (mean age=73yrs) and 2003/4 (mean age=84yrs) were included (n=239). Constipation was self-defined; laxative use was determined from patient interview and PBS prescription data. We found that the prevalence of self-reported constipation increased from 14% to 21% over 11 years. A corresponding increase was also observed for laxative use (6% to 15%). Females were more likely to report both constipation and laxative use than males. However this gender difference decreased over time for both constipation (female/male prevalence ratio decreased from 2.42 to 1.51) and laxative use (female/male prevalence ratio decreased from 4.28 to 1.30). At both time-points, laxative use was associated with self-reported constipation in less than 30% of cases, indicating that laxatives are being used more for prevention than treatment. The only significant constipation risk factors were found to be self-rated health and activities of daily living. We conclude that increases in constipation and laxative use occur with age in the elderly, with the largest increase in males. The majority of laxatives seem to be used for prevention, rather than for treating existing constipation. Given the diversity of options, opportunities exist to optimise constipation management and laxative use in the community-dwelling elderly.

MEDICATIONS USE AND MENTAL HEALTH IN WOMEN AGED 76-81 YEARS

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Medication use has a significant impact on quality of life for older people in Australia. Existing literature suggests that medication can have strong effects on the health of older people, and including mental health of older women. However, relatively little research has been conducted on the relationship between medication use and decline in mental health of women as they age. This research attempts to assess the effects of multiple medication use on older women's mental health, and this paper addresses an initial question: Is there a cross-sectional association between measures of medication use and Mental Health Inventory (MHI-5) score, for women aged 76-81 years who completed Survey 3 of the Australian Longitudinal Study on Women's Health (2002)? This study will examine the use of common medications used by this large cohort of Australian women, and the extent to which increasing medication burden is associated with MHI-5 scores. In this presentation I will outline the number of prescriptions and classes of medication most commonly used by Australian women aged 76-81 years. I will then describe the association between medication use and MHI-5 scores, in this sample of women. This research will provide significant information on the effects of medication use by older women, and the potential impact on their mental health, which can then be used to make more informed choices about the risks of medication prescription. It may also assist to develop more useful guidelines and strategies for prescribing and de-prescribing medications for older women.

DOES DAILY LOW DOSE ASPIRIN INFLUENCE THE INCIDENCE AND/OR PROGRESSION OF AGE-RELATED MACULAR DEGENERATION?

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Age-related macular degeneration (AMD) is a major cause of visual impairment in advanced countries. Its development is slow and progression to advanced forms causing vision loss occurs at the age of 70 or older. Studies examining the impact of aspirin on AMD development have produced inconsistent results to date. Aspirin could prevent or delay the onset of AMD in older persons, but its bleeding risk also needs to be considered. We are conducting a 5-year double-blind randomised controlled trial, aiming to determine whether low dose aspirin affects 3 or 5 year incidence or progression of AMD. This NHMRC-funded ASPREE-AMD study (ACTRN12613000755730) is a sub-study in 6000 participants of the large-scale randomised controlled trial Aspirin in Reducing Events in the Elderly (ASPREE), (ISRCTN83772183). Administration of randomly allocated aspirin 100mg daily or placebo to people 70 years or older is being conducted through the parent ASPREE study. AMD status is determined on digital non-mydriatic retinal images taken with Canon retinal cameras at two study centres in Melbourne and in two mobile units travelling throughout rural Victoria. Retinal images will be graded for AMD with automated software (USA) and manually (in Australia). To date, we have collected baseline photographs from more than 2500 ASPREE participants. If aspirin could reduce the incidence of AMD, it might substantially reduce the impact of AMD on older individuals. On the other hand, if aspirin exaggerates bleeding associated with advanced 'wet' AMD, its influence should be estimated so that doctors can determine whether the drug should be avoided in these subjects. Both questions will assume greater significance in coming years, as more individuals enter the age groups at risk.

SESSION B

Older Workers and Workforce Participation

A SYSTEMATIC REVIEW OF THE BURDEN AND RISK FACTORS ASSOCIATED WITH WORKPLACE PRODUCTIVITY LOSSES AMONG PEOPLE WITH CHRONIC KNEE PAIN AND KNEE OSTEOARTHRITIS

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Background; The prevalence of knee pain can vary depending on age, definition of knee pain and type of work, ranging from 10-60%. With an ageing population and the growing trend to delay retirement worldwide, the number of people in the workforce affected by chronic knee pain will increase. The aims of this systematic review were to describe the prevalence of reduced worker productivity (absenteeism and presenteeism) among chronic knee pain participants and to identify risk factors. **Methods;** We searched literature using MEDLINE, EMBase, PsycINFO and CINAHL databases using combinations of key words; workers, knee pain, knee osteoarthritis, absenteeism, sick leave, work efficiency and presenteeism from cross-sectional, cohort and case-controlled studies published in English. We included studies that quantified the burden of reduced worker productivity and associated risk factors. **Results;** Eight of seventeen included studies reported absenteeism or sick leave in participants with chronic knee pain ranged between 3-22%. Two of the seventeen studies, reported presenteeism in participants ranged from 66-71%. Six high quality studies provided strong evidence for an association between knee pain or knee osteoarthritis and absenteeism. Only one high quality study provided limited evidence for an association between age, high job demand and low co-worker support and absenteeism. Three high quality studies provided moderate evidence indicating knee pain or knee osteoarthritis were associated with presenteeism. **Conclusion;** Due to the limitation in studies design and wide variability in findings regarding an association between chronic knee pain and worker productivity losses remain inconclusive. Efforts to improve worker productivity among people with chronic knee pain should targeting relevant risk factors.

WORKFORCE PARTICIPATION PATTERNS IN YOUNG AND MIDDLE AGED WOMEN – IMPACT OF CHRONIC DISEASES AND COMPETING ACTIVITIES

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Objective of the study was to examine patterns of employment participation for younger and mid-aged women over a period of 16 years and identify factors which influence workforce participation over time and across the life-course.

Data came from the 1973–78 and 1946–51 cohorts from the Australian Longitudinal Study on Women’s Health (ALSWH). For the younger cohort, paid work participation was reported from when they were 18–23 until they were 31–36 years old (5 survey points). For the older cohort, the observation period spanned from the ages of 45–50 years until 59–64 years (6 survey points). Dominant workforce participation patterns in each cohort were identified using Latent Class Analysis and class membership was validated by plotting workforce transitions using the method of Dobson et al. (1). Item response plots were used to graphically display latent classes for each cohort. Baseline characteristics (overall health and socio-economic factors) of those ‘always in paid work’ and ‘always out of paid work’ were also compared. Competing activities (e.g. education, marital status, child birth, caring responsibilities, home duties, etc.) and the impact of chronic disease onset were modelled to assess their association with workforce participation patterns. **Results** of this study suggest that few women had consistent employment patterns (always in or out of paid work); while most women had various distinct patterns which differed between the two cohorts. We hypothesise that decisions about employment are impacted by a number of factors acting at different life stages. This study highlights the importance of chronic disease prevention and management, and the interaction with other social roles and circumstances, in enabling women’s workforce participation at younger and older ages. Such ongoing participation is important for women’s social and economic wellbeing, and is a component of healthy, active and productive ageing.

SUSTAINABLE WORK FOR OLDER WORKERS: RE-THINKING EFFORT-REWARD IMBALANCE

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Australia's population is ageing. One strategy, aimed at reducing the economic costs of an ageing population, is to keep older workers working for longer. However, our understanding of the relationship between work and health for older workers is limited by a paucity of empirical research. Unhealthy work reduces older people's working lives through early retirement from work-related disability and illness, having the unintended consequence of placing extra burden on social support services and health systems. Our research uses a well-known model of work and health, the effort-reward imbalance model, to examine the relationship between psychosocial working conditions and mental health among older workers, and tests whether the relationships differ by gender. The sample was drawn from a larger representative study of older Australians (aged 45-64). Participants were selected if they worked for pay and were not self-employed (n=727, 56.7% female). Effort and reward were measured using self-report data, collected using computer-assisted telephone interviewing. We use structural equation modelling to test the independent effects of effort, reward and their imbalance for males and females separately. Controls were included for age, employment status, working hours and marital status. Results show that the constructs account for 34% and 24% of variance in females' and males' mental health, respectively. For females, rewards at work in the form of esteem and respect from colleagues and job security were the strongest predictors of mental health. For males, the imbalance between effort and reward was most important, rather than absolute levels of effort and reward. The study makes an important theoretical contribution by highlighting the important main effects of effort and reward, in addition to imbalance which has been the focus of previous research. Empirically, the results expose potential harms of work, and highlight ways that work can be made more sustainable and rewarding for older workers.

MOVING TOWARDS THE UNKNOWN: ENABLING ACTIVE AGEING IN RETIREMENT

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Financial planning for, and men's experiences of retirement dominates the existing retirement research and literature. This at a time when women's engagement in the paid workforce while juggling family responsibilities has increased significantly over the past 50 years. As women of the baby boomer generation fast approach retirement, further research is required to understand women's experience of approaching retirement. This grounded theory study examined women's experiences of paid work and thoughts about retiring within an occupational therapy framework. It focused on examining the influence of women's occupations (paid & unpaid), education, social and contextual factors on their decision to retire and the process undertaken. Two semi-structured interviews were initially conducted with 10 registered nurses purposefully recruited from the Victorian health and community sector. A further 5 allied health professionals were recruited using theoretical sampling, a key feature of grounded theory. The emerging theory illustrates the complex issues associated with deciding to retire, and the anticipation and initial stages of the transition towards retirement. Three preliminary themes emerged from the data: Taking Stock of a Working Life; Thinking about Retiring – The Influences and Moving Towards the Unknown – The Hopes and Uncertainties of Retiring. This paper will examine the women's decision-making process and their transition towards an unknown future. The insights gained from this study illustrate how women's work history, occupations, family relationships and social networks influence their thinking at this time of life. Thus it presents an opportunity to expand occupational therapy practice to assist women, organisations and policy makers whereby approaching retirement presents an initial stage of moving towards older age and an opportunity to enable active ageing.

SESSION C

Falls, Balance and Exercise

ENABLING ACTIVE AGEING IN RESIDENTIAL AGED CARE: STRENGTH AND BALANCE EXERCISE FOR THE PREVENTION OF FALLS

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The population aged over 75 years is projected to more than double in the next 20 years. The number of people living in residential aged care, number of fall-related hospital admissions, and costs of follow-up care are also expected to rise. It is estimated that 60% of residents of aged care will fall each year. Despite a plethora of research on exercise based interventions for falls prevention in the community setting, little conclusive evidence is available on the effectiveness of such interventions in residential aged care (RAC). To address this shortcoming, work is underway comparing an active strength and balance program versus usual care for the prevention of falls in RAC. The key research questions of this project are:

- Is the program more effective than usual care for prevention of falls among residents over a 12-month follow-up period?
- Does the program result in improvements to the secondary outcomes: quality of life, cognition, mobility and confidence?
- Is the program cost effective?

For older people living in RACFs, the potential benefits of this program are a reduced probability of falling and the sequelae of a fall, such as increased mortality and morbidity, as well as increased injury and hospitalisations, loss of confidence, reduced mobility, and reduced quality of life. For the healthcare system, fewer fall-related hospital admissions will help to reduce falls related health care expenditure. This work has significant national and international implications. This presentation will include:

- A brief review of research that lead to the development of the intervention
- A display of participants actively engaged in the program
- Preliminary feedback from current participants
- Lessons learned about recruitment and conducting research in residential aged care facilities

COMPARATIVE EFFECTS OF TWO AQUA-BASED EXERCISE PROGRAMS ON PHYSICAL FUNCTION, BALANCE AND PERCEIVED QUALITY-OF-LIFE IN OLDER ADULTS WITH OSTEOARTHRITIS

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Osteoarthritis is a degenerative joint disease which affects a large number of older adults. Symptoms include joint pain and stiffness, the knees, hips and spine are often affected. Due to these symptoms, many older adults with osteoarthritis avoid regular physical activity. Low levels of physical activity have been associated with limitations in muscle strength and functional capability as well as an increased risk of falls and reduced quality-of-life and social isolation. While a form of aqua-based exercise known as hydrotherapy is often recommended for older adults with osteoarthritis, less is known about the potential benefits of aqua-fitness, a form of aqua-based exercise which is often available at community swimming pools and attended by a large number of older adults with and without osteoarthritis. The presentation will report the findings of a randomized controlled trial which investigated the impact of a 12-week aqua-fitness (AF) program and a seated hydrotherapy-based (H) program on muscle strength, balance, function, fear of falling (falls efficacy) and perceived quality-of-life among older adults with osteoarthritis. Falls efficacy improved significantly in the AF group compared to H at 12-weeks. Within-group analysis indicated both groups significantly improved 400m walk time and that the AF group significantly improved dynamic balance ability in both legs as well as their quality-of-life rating. The results of this study indicate that AF may offer a number of positive functional and psychosocial benefits for older adults with osteoarthritis, such as improved balance and a reduced fear of falling. This form of aqua-based exercise is widely available at many community swimming pools and may offer similar benefits to a hydrotherapy program for older adults with osteoarthritis, whilst being more widely available and a less expensive mode of aqua-based exercise.

VISION IMPAIRMENT BALANCE AND MOBILITY

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Older adults with visual impairments have an increased risk of falls and falls that result in fracture than older adults with normal vision. The vulnerability to fall related injuries and the increasing numbers of older people with visual impairments makes fall prevention in this population a critical public health issue. This presentation will review the work done to date to evaluate physical interventions to improve physical function or reduce falls in older adults with untreatable visual impairments based on a systematic review of the literature, and present some results of a recently completed trial in Sydney, Australia. The trial was a collaboration between Guide Dogs NSW/ACT and the George Institute for Global Health, the University of Sydney. The study was registered with the Australian and New Zealand Clinical Trials Registry (ACTRN12610000634077). A total of 120 participants were randomized into two groups. The control group received usual care from O&M Instructors at Guide Dogs NSW/ACT. The intervention group received a weekly lesson in the Alexander Technique for 12 weeks in addition to usual care. Usual care is needs-based client-driven access to a range of community-based services provided by the organisation and includes training in the use of canes, guide dogs and electronic travel aids, along with safe strategies for pedestrian and public transport travel. The Alexander Technique uses manual guidance and verbal feedback in everyday activities such as sitting, standing and walking to teach people how to better organize their balance and mobility by reducing largely unnoticed habitual muscular tension that may be interfering with an easier overall coordination. Physical measures of balance, mobility and emotional well-being were measured at baseline, after the 12 week intervention and at 12 months by O&M instructors masked to participant group status. Data on falls was collected using prospective calendars over 12 months. Some results of this study will be presented and discussed in relation to previous work in this area.

OLDER PEOPLE'S PERSPECTIVES ON PARTICIPATION IN EXERCISE AND PHYSICAL ACTIVITY: A SYSTEMATIC REVIEW AND THEMATIC SYNTHESIS OF QUALITATIVE LITERATURE

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Recent studies report that a significant proportion of older people are inactive and do not reach the levels of physical activity recommended for health benefits. This systematic review and thematic synthesis of qualitative literature describes the experiences and perceptions of older people on barriers and facilitators to the uptake and adherence to physical activity, including exercise, which are needed to inform effective strategies to increase physical activity uptake and sustain adherence over time. **Participants:** Older people aged 60 years or over. **Intervention:** Any type of physical activity, including exercise. Studies investigating physical activity in a population with a specific health condition (e.g. coronary heart disease, diabetes) were excluded. **Results:** Thirty-four studies involving 2091 participants were included. Six major themes central to older people's perspectives on physical activity were identified: social influences (valuing interaction with peers, social awkwardness, encouragement from others, dependence on professional instruction), physical limitations (pain or discomfort, concerns about falling, comorbidities), competing priorities, access difficulties (environmental barriers, unable to afford), personal benefits of exercise (strength, balance and flexibility, self-confidence, independence, improved health and mental well-being), and motivation and beliefs (apathy, perceived inevitability of age related deterioration). **Conclusion:** Barriers to older people's participation in physical activity involve physical limitations, access difficulties and motivation and beliefs. Interventions that enhance older people's confidence to participate in physical activity, improve access to exercise facilities, and inform older people about the benefits of being physically active may increase the uptake and adherence to physical activity among the older population. Health professionals should address modifiable individual factors that may function as barriers to physical activity uptake (e.g. concerns about falling, low motivation) and policy makers need to consider modification of environmental barriers, such as poor access to transport.

THE PERCEPTIONS OF OLDER PEOPLE ON EXERCISE AND PARTICIPATION: DO MEN AND WOMEN'S VIEWS DIFFER?

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Gender is a social construct that can influence how a person seeks and follows medical treatments. Rates of lower limb fracture are increasing as the population of older people rises. Quantitative studies have shown that after exercise men and women that have had a hip fracture differ in their response to intrinsic outcome measures, however, qualitative research in this field is limited. Qualitative studies on older people after falling show various views; one suggests an ongoing concern about fragility, isolation and changes in physical abilities, whereas another study suggest the importance of reflexion for empowerment and dealing with fear. Neither considers gender differences. There is a gap in understanding how gender may influence the attitudes, experiences, and outcomes of older people after a fall-related lower limb fracture. This research poses the questions: Do men and women view exercising differently? Do men and women have differing reasons for participating in exercise programs? And, do men and women have different expectations of the exercise program? This study uses data drawn from interviews with men and women over the age of 60 who have had a fall-related lower limb fracture, and are currently undertaking a strength and balance exercise program (RESTORE) as part of a randomised trial. Analysis utilises grounded theory methodology. Preliminary analysis of eight interviews reveals ideas about adaption to ageing, acceptance of physical change, and fear of future falling which are expressed differently between men and women. These findings suggest that gender may impact on older peoples' experience of exercise after a fall-related lower limb fracture. The implications of this research may result in improvements in the prescription of exercise in this population through a greater understanding of the impact of gender on health behaviours. This may lead to recommendations to include gendered based treatment strategies for this population.

SESSION D

Depression and Pain Management

PAIN EXPERIENCE FOLLOWING KNEE REPLACEMENT SURGERY: THE INFLUENCE OF ETHNICITY

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Introduction: Many people desire to continue a physically active lifestyle as they age. To enable active aging, many undergo joint replacement surgery. The aim of this study was to examine if pain severity, self-management behaviours and barriers to optimal analgesia after hospital discharge for total knee arthroplasty (TKA) differed between two ethnicity groups. **Methods:** We administered a questionnaire to patients undergoing TKA in 10 Australian hospitals, and one large Singaporean hospital, two weeks following hospital discharge. We asked participants about their pain severity, use of analgesics, side-effects, perceptions of analgesics use, and satisfaction with pain relief at home. **Results:** 171 (98%) eligible participants from the Australian centers and 105 (94%) from the Singaporean hospital completed the questionnaire. Compared with the Singaporean patients, significantly more participants in the Australian cohort reported that their worst pain period occurred during the first two weeks at home (52% vs. 20%), and that their average pain at home was 'severe/extreme' (23% vs. 6%). More participants in the Australian cohort consumed an opioid (69% vs. 33%) and experienced analgesic-related side-effects (84% vs. 41%). Conversely, a smaller proportion in the Australian cohort perceived that analgesics could not control pain (26% vs. 44%); were concerned about addiction (26% vs. 42%) or developing tolerance to analgesics (28% vs. 49%); or preferred enduring pain than analgesic-related side-effects (25% vs. 42%). Interestingly, there was no significant difference in satisfaction with analgesia between the two cohorts (64% vs. 74%). **Conclusion:** Following hospital discharge for TKA, there were marked differences in the pain experience, self-management behaviours and perceptions of analgesics, between the Australian and Singaporean cohorts. These findings indicate the development of culturally-specific pain management strategies for older people after joint replacement surgery.

THE RELATIONSHIP BETWEEN PSYCHOLOGICAL DISTRESS AND CORONARY HEART DISEASE OUTCOMES: WHAT ARE THE RISKS?

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Results from extensive research have found depression to be a risk factor for the development of heart disease and for a worsening prognosis once heart disease is established. To a lesser extent, research has also focused on the role of anxiety as an independent risk factor, with some evidence to support its role as a risk. Both anxiety and depression are highly interrelated. They are associated with unhealthy lifestyles which may be responsible for both the onset of heart disease and higher levels of morbidity. It is unclear whether the age a person develops depression and anxiety presents an increased risk of developing heart disease. This paper aims to explore whether the age a person develops depression and/or anxiety increases their risk of having an acute coronary syndrome (ACS) and investigating the impact this may have on subsequent hospital admissions. These questions will be explored using information collected from a large ongoing study called the 45 and Up, that looks at healthy aging within the population of NSW. By using this data it will be possible to identify participant's age of onset for depression and/or anxiety and whether it is associated with an increased risk of ACS. Using linked hospital data it will be possible to explore people who develop ACS and whether there is an association in the number of recurrent hospital admissions amongst those with depression and/or anxiety. This research takes a life-course approach to the development and progression of ACS and attempts to extend knowledge into the mechanisms that link depression and anxiety as risk factors.

THE INFLUENCE OF PERCEIVED STRESS ON THE ONSET OF ARTHRITIS IN WOMEN

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Psychosocial factors including psychological stress are considered as risk factors for some chronic conditions. Despite this increasing body of evidence, a paucity of research exists regarding the role of perceived stress in arthritis onset. As such, perceived stress as a risk factor for arthritis development was explored in an ageing cohort of Australian women. This study focused on 12,202 women from the 1946-1951 cohort who completed the Australian Longitudinal Study on Women's Health surveys in 2001, 2004 and 2007. Longitudinal associations were modelled using Generalized Estimating Equations (GEEs), with and without a time lag. Multivariate GEE models without a time lag revealed a 1.5 increase in odds of being diagnosed with arthritis for women experiencing minimal levels of stress, and a 1.9 increase for those experiencing moderate/high levels of stress compared to women who did not experience stress. When a time lag approach was employed, the odds associated with arthritis increased. Specifically, women who reported experiencing minimal levels of perceived stress were found to have a 1.6 increase in arthritis onset three years later, while women with moderate/high stress had a two-fold increase in developing arthritis at the following survey. Findings relating to perceived stress as a predictor of arthritis onset increased further, particularly in relation to moderate/high stress when the time lag model was employed following the exclusion of women with persistent joint pain. Perceived stress predicted the onset of arthritis with women experiencing minimal and moderate/high stress levels having a 1.7 and 2.4 times greater odds of developing arthritis three years later, respectively (all *p* values <0.001). The findings from this study suggest that chronically perceiving life as stressful is detrimental to future health. The findings provide support for perceived stress to be considered as a risk factor for arthritis alongside other known modifiable risk factors.

USING A MIXED METHODS DESIGN AND QEEG PARAMETERS TO TRACK IMPROVEMENTS IN MID TO LATER LIFE DEPRESSION AFTER A CHOIR THERAPY PROGRAM

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This paper discusses the deleterious effects of mid to later life depression on social interactions and quality of life, leading to immobility and increased health problems in later old age. An intensive 8-week choir therapy program evaluated any decrease in depressive symptoms with 32 midlife to later aged (48-73 years) ambulant depressive participants located in the Blue Mountains to the west of Sydney. Some were allocated to the choir group (N=21) while the remainder was allocated to a control group (N=11) who lived their lives as normal with the promise of joining the choir after the study. All participants were evaluated before and after the intervention for depressive symptoms, post-traumatic stress disorder, wellness and quality of life indices and weekly responses/comments to the intervention. Pre-Mini Mental State Examinations also evaluated for signs of cognitive impairment which was not detected so the examinations were not repeated after the interventions. Pre/post interviews and weekly responses evaluated past/present histories of medical, psychological, social and environmental issues. The pilot study examined whether changes in brain wave frequencies using Quantitative Electroencephalography (QEEG) could track any improvements in depression. The 8-week choir therapy program included meditation, physical and singing exercises, vocal improvisation and learning new songs. Before/after Beck Inventory and mental state examinations showed significant improvements in depressive symptoms ($p<0.001$). The Spirituality Index of Wellbeing showed significant improvements in wellness ($p<0.013$). The group spectral analysis of resting QEEG showed greater left/right hemispheric symmetry, reduction of right polar pre-frontal hyper-activity and reduction of hypercoherence. Event Related Potentials revealed that an initially heightened P3a Novelty Cingulate Gyrus response reduced significantly following the intervention ($p<0.05$ level). All results indicated that the practice of choir therapy could reduce symptoms of depression, enabling a more social, physically active and healthier ageing.

SESSION E

Social Dimensions and Communication

THE SUPPORTIVE NETWORK: SOCIALLY ISOLATED RURAL OLDER PEOPLE, SOCIAL WORKERS AND ICT

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Increasingly, social workers in rural practice settings are being employed to implement programs aimed at assisting older people to live in the community as independently as possible. Achieving these aims in a rural environment, where healthcare and support services may be dispersed across a large geographic area, presents particular challenges for rural social work practitioners and older service users. Information and Communication Technology (ICT) has been proposed as one way to assist social workers, and the older people they support, to break down some of the barriers associated with geographic isolation. Research into older people's use of ICT has highlighted the potential benefit to wellbeing, social engagement and life satisfaction, leading to a corresponding decrease in social isolation, loneliness and depression amongst this group. However, both social work practitioners and rural, older people have had a difficult relationship with ICT use. This paper explores these issues, starting with the barriers facing social workers and socially isolated rural older people in relation to ICT. It then goes on to detail practice-led approaches to ICT that have the potential to break down some of these barriers. The paper will also present an upcoming research project that will trial a partnership between social workers and socially isolated rural older people using iPads as core practice tools.

THE SIGNIFICANCE OF LANGUAGE: CRITICAL DISCOURSE ANALYSIS IN SOCIAL RESEARCH

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Population ageing has contributed to a rapidly changing policy environment. As consumers, practitioners and researchers of health and social systems, it is important to be actively and critically involved in examining policy. While policy analysis can take many forms, critical discourse analysis is often overlooked as a method for social researchers. Discourse analysis has long been used within linguistic studies to explore the function and structure of language, though was seen to offer little applicability to real world social problems. Critical discourse analysis however, moves beyond the linguistic level, to study the impact of language on social phenomena by considering language within its social and political context. This paper, drawing on a study of ageing and caregiving, will provide an example of a research approach using critical discourse analysis. The author will discuss the applications, challenges and benefits of this method in social research, demonstrating how it can provide a critical understanding of language and the impact of this on power, equality and choice for older Australians.

THE PERCEPTION OF AUDITORY AND AUDITORY-VISUAL LOMBARD SPEECH BY YOUNGER AND OLDER ADULTS

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Difficulty communicating in noisy environments remains a common complaint by older adults, both with and without hearing impairment. One way younger adults manage to cope with background noise by modifying their speech production in noisy environments. That is, when talking in noise, people tend to adopt a speech style known as 'Lombard speech' where the produced speech signal is louder and slower, and is delivered with greater head and lip/mouth movements. Younger listeners are able to utilise the signal changes to substantially improve their speech perception in noise. It is unclear, however, how effective Lombard speech modifications are for older adults. Compared to younger adults, older adults' hearing is often poorer (especially in high frequencies) and they tend to benefit less from visual speech relative to younger adults. The aim of the current study was to examine the extent to which older adults can utilise the Lombard speech signal to mitigate their speech perception in noise difficulties. A set of spoken vowel and consonant stimuli were presented to younger and older adult participants in auditory-only, visual-only and auditory-visual conditions in a speech identification task in noise. Results showed that both groups received comparable benefit from the auditory Lombard speech modifications. Further, although the older adults' ability to lip-read the stimuli was relatively poor, they received substantial benefit from the integration of the auditory and visual Lombard speech signals in the AV condition. Overall, the findings suggest that older adults can still receive substantial benefit from Lombard speech in noise.

DRAMATHERAPY WITH OLDER PEOPLE WITH DEMENTIA

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This paper reports on the findings of a two-arm study which aimed to evaluate the effect of dramatherapy on the quality of life (QoL) of a small number of elderly people with mild and moderate dementia. Dramatherapy is a psychotherapy using drama in an intentional way to bring about psychological growth and change. Participants were principally people with Alzheimer's Disease (AD) living in the community and the dramatherapy took place over sixteen weekly sessions in 2011. A second group watched films over the same period and their quantitative results were compared. All participants were assessed pre and post sixteen group meetings. A mixed method approach was employed, and qualitative results were achieved through phenomenological methods, as well as narrative, ethnography and metaphor. A meta-analysis of the results was conducted through triangulation of data. Although not statistically significant, the quantitative findings for the dramatherapy group produced a higher QoL score than the movie-watching group, suggesting that a larger study needs to be done to further research in this area. Qualitative findings established an unexpected ability by participants to express their ideas and feelings through drama psychotherapy including movement and improvisation. A conscious awareness of their situation and improvements in QoL were revealed and are demonstrated through observational results of a Creative-Expressive Abilities Assessment (CEAA) tool (Gottlieb-Tanaka et al., 2008). The "quantifying" of this qualitative research produced significance in what would otherwise be regarded statistically as a non-significant change. The research findings show that it is never too late in life for people with mild or moderate dementia to be engaged with creativity, trust and enjoyment in order to express joys and frustration. This psychotherapeutic activity is recommended for people with dementia, to calm behaviours, reduce fears and minimise existential anxiety, improving QoL.

ENABLING ACTIVE REFLECTION THROUGH CREATING A PERSONAL ARCHIVE

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This paper discusses some of the findings of the Storyline Project which explored the process of creating a personal archive containing memories, stories, and images for three people with early stage Alzheimer's disease. There is limited research and much anecdotal evidence regarding the value and purpose of creating biographies and life stories in caring for the aged and people with dementia. Through studying the creation of a personal archive I explain how enabling active reflection contributed to supporting remembering and constructing identity. This type of activity highlights important issues regarding the way personal life stories and biographies are created, used and managed. Case examples from the research are used to illustrate the implications for practice and significance of findings for further research.

UNDERSTANDING THE MEANING OF LIVING WITH PARKINSON'S DISEASE IN AN AUSTRALIAN COMMUNITY SETTING FROM THE PERSPECTIVES OF THE PERSON DIAGNOSED AND THEIR PARTNER/CARER

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Parkinson's disease (Pd) is a neurodegenerative disorder that impacts the person diagnosed and their partner/carer in multiple ways. Non-motor symptoms, which include sleep disturbance and anxiety, may be sensed years before the person observes motor symptoms such as a tremor and/or slow moving body. Through time, chronic disease becomes enmeshed with senescence in the biological body. In this context the person living with Pd is transformed by factors that are physical, emotional, cultural and social and constructs located identities. The person diagnosed with Pd and their partner/carer come to know the self in terms of expert knowledge, which is made knowable to them in a disease-specific health care framework. Through social interaction the person incorporates different narratives that give meaning to their individual and shared illness experiences. A literature review to date has found there are few studies that examine the social dimension of people living with Pd in an Australian community setting. The purpose of this sociological study is to construct an interpretive schema that comprehensively describes the meaning of living with Pd in an Australian community setting from the perspectives of the person diagnosed and their partner/carer. Grounded Theory, in-depth interviews and focus groups are used to access people's narratives and interpret how identities are constructed in certain contexts. Recently a pilot study has tested the research design and successfully explained Pd as a social experience from the participants' perspectives. Outcomes from the pilot have informed the main study, which is due to commence in August 2013. Findings from the pilot study and what has been learned from the main study to date will be reported on and discussed in the presentation at the ERA Conference.

SESSION F

Ageing and Activity

PUTTING THEORY INTO PRACTICE: AN OPERATIONAL FRAMEWORK FOR HEALTHY AGEING

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The residential aged care sector has a long history of managing services for the frail older population. For the most part, service delivery to this group has been influenced by biomedical representation with attention to health promoting interventions. To address this gap, an operational Framework for Healthy Ageing was trialled in two residential aged care homes to shape a more health promoting environment with; integrated systems and interventions that make healthy ageing accessible and an easy choice. The aim is to increase healthy life expectancy of this frail older group and compress the stage of disability. The Framework incorporates research from the Five Standards for Health Promotion (WHO), Science of Wellbeing and Positive Psychology. Staff received extensive training in systems thinking, early intervention and rehabilitation to drive the paradigm shift, and positive psychology to embed and build a mindset for healthy ageing. Additionally an aspirational partnership model for wellbeing was developed to enable staff and residents to share responsibility for their own health and wellbeing outcomes.

BEHIND THE WHEEL: A SNAPSHOT OF OLDER DRIVER FUNCTION AND DRIVING EXPOSURE

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Safe mobility is key to enabling active ageing, fostering independence and maintaining community connections in later life. For many older Australians driving is their primary mode of transport and means of community mobility. Older drivers represent a rising proportion of licensed drivers, however, as people age they often struggle with the need to drive to maintain independence and community mobility versus remaining safe and competent behind the wheel. Concerns about older driver safety are supported by increased crash involvement per kilometre driven coupled with increased susceptibility to injury in the event of a crash. Despite these concerns and heavy reliance on driving for community mobility, there is a lack of objective data exploring driving patterns of older Australians. To fill this gap, a large community based trial using naturalistic driving technology was employed. Cross-sectional baseline data on function and driving exposure from one week of driving for 327 participants aged 75 years or older living in the Hills or Hornsby Shires in northwest Sydney has been evaluated. Average age was 80±4 years with range (75-94 years) and 199/326 were male (61%). The majority lived in their own home (253/327, 77 %) or independent living units within retirement communities (61/327, 18%) and 122/327 (37%) were living alone. Driving exposure was measured in terms of total distance travelled, radius of travel from home and proportion of driving outside daylight hours and relationships to function and transport needs assessed. Exploring driving patterns of older drivers is an important first step in understanding how older people employ and regulate their driving to satisfy community mobility needs and preserve their independence but maintain safety behind the wheel. This understanding of driving patterns and function will inform driving policy and help shape responsive and flexible transport alternatives that enable active ageing.

IN-VEHICLE MONITORING OF OLDER DRIVERS TO INVESTIGATE DRIVING EXPOSURE, BEHAVIOUR AND SAFETY

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In Australia, older people represent a large and increasing proportion of the driving population. Driving maintains independence and social participation, and loss of driving privileges has been linked to depression and lower quality of life. As they age, older drivers are increasingly involved in casualty crashes, and at increased risk of injury due to frailty. However, there is a scarcity of objective data about older drivers' driving patterns and involvement in high risk situations, and how these change over time. This study seeks to fill this need by deploying 'black box' technology for 12 months into the vehicles of 190 drivers, aged 75 years and over, residing in the urban outskirts of Sydney. To characterise the population, assessments of well-being, cognitive and visual function were collected at baseline and completion. Of the 153 participants recruited, ages range from 75 to 94 years (median 79 years), and 53.6% (82) were male. Devices have been installed in 98.0% (150) of participant vehicles, as three declined installation. Devices recorded GPS location and acceleration, and transmitted these over the mobile telecommunications network, to enable detection of driving exposure measures, speeds, and levels of rapid deceleration events (RDEs). Participants took an average of 19 trips per week with median distance of 19km and 32 minutes duration. Data show a low proportion of device failures (1.3% or two devices), which have been successfully replaced. Participant inactivity is largely due to health problems or vacations. This presentation will focus on the study methodology, including the data processing. It is anticipated the outcomes of the study will provide objective, longitudinal evidence about older drivers driving exposure, and involvement with excessive speed events and RDEs. Policy makers may use this information to contribute to planning for ageing well and making informed decisions about safe driving.

COGNITIVE-IMPAIRMENT- FREE LIFE EXPECTANCY FOR AUSTRALIA AND SEVEN LATIN AMERICAN AND CARIBBEAN COUNTRIES

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It is well documented that our populations (both in developed and developing countries) are ageing and that the prevalence of moderate or severe cognitive impairment rises steeply with age. While routine data is collected on the cognitive function of persons in the Australian population through the conduct of surveys and studies, this has not been the case in Latin America and the Caribbean. Also worth noting is that health expectancies based on mental health have not been as widely studied as health expectancies based on physical function. The aim here was to compare estimates of CI and CI-free life expectancy in Australia (a developed country) and seven developing Latin American and Caribbean countries (Argentina, Barbados, Brazil, Chile, Cuba, Mexico and Uruguay). The primary research question under investigation is: How does the level of cognitive disability in a group of developing countries in Latin America and the Caribbean (LAC) compare to that in Australia - a developed country? Data were analysed from two data sets including only those respondents aged 60 and older (The Australian Diabetes, Obesity and Lifestyle Study n =1,754 and The Survey on Health, Well-being and Ageing in Latin America and the Caribbean n = 10,651). The primary outcome measures used to evaluate cognitive function in the studies were the Mini-Mental State Examination (MMSE) and the Pfeffer Scale (used in the SABE where necessary). The Sullivan Method used to estimate population health indicators was applied to estimate CI and CI free life expectancy. Data was disaggregated to include the covariate sex. The results of this research form part of broader study aimed to examine the relationship of diet and physical activity on cognitive function by conducting cross national analyses.

A REVIEW OF TWIN STUDIES IN SEARCH OF KEYS FOR HEALTHY AGEING

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The population of older individuals is rapidly increasing in the modern nations, and although longevity has benefits to individuals and society, providing a healthy ageing for them is challenging. One of the major criteria for healthy ageing is healthy brain structure. All human phenotypes, including brain volume (BV), are under the influence of genetic and environmental factors, the level of which may change with age, and this may be the principal reason for brain structural changes with ageing. Twin and family studies are the two most common approaches for investigating these influences on any human phenotype. To obtain a cross-sectional view of the brain volume heritability changes with age, we reviewed 32 twin and family studies which examined the heritability of 77 brain volumes in different ages. The general finding of this review was the significant influence of genetic factors on BV, whereas environment also moderately influenced the brain. Also, a moderating influence of age was observed on the genetic influences, with the majority of the measures showing heritability decline with age, which allows the environment to show more influences on the brain with age. Therefore, due to the reports of the negative association of environmental factors with brain structure in late life, we hypothesized that one approach to have a healthy ageing is to carefully monitor the lifestyle and environmental conditions of the individuals, particularly after the age that the influence of genes start to decline. As healthy ageing is associated with human lifespan, this hypothesis was later approved by those reports that showed the human lifespan to be mainly under the influence of environment. This study showed that individuals are able to live longer and healthier if they control their environmental conditions; however, their maximum lifespan is hardly extensible as human longevity is controlled by genes.

RESILIENCE OF GRANDPARENTS FOSTERING ORPHANS IN ZIMBABWE

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In sub-Saharan Africa, grandparents are primary providers of care to orphaned children from HIV. This study sought to explore resilience profiles of grandparents fostering orphans and the impact of resources on the grandparents' health and well-being. Cultural traditions and expectations that influence grandparents' resilience were also explored. Participants were 327 grandparents looking after their grandchildren (mean age=62.4; s.d=11.2). Data were collected from grandparents residing in rural areas, urban low and high density suburbs of Zimbabwe. Quantitative methods were used to gather data and systematic sampling was used to select grandparents' carers. Interviews were done using a structured questionnaire comprising the Resilience Scale and WHOQOL-BREF. Data were analysed using multiple regression to establish impact of protective factors on resilience, health and wellbeing of caregivers after allowing for age, education, income earned and type of residence. Preliminary findings suggest that grandparents' resilience profiles differ by social class, age, social assets and personal assets. Resilience profiles did not differ significantly by gender and type of household(skipped or multi-generation). Resources were found to play a vital role in resilience and hence caregiving. The low resilience scores, health scores and wellbeing scores highlight the need for assistance to grandparents to enable them to cope adequately with carer roles. Policy makers should formulate viable policies that address elderly caregivers' challenges and stakeholders should implement appropriate interventions.

SESSION G

Tool Assessments and Methodology

A MORTALITY RISK PREDICTION TOOL FOR OLDER ADULTS WITH LYMPH NODE-POSITIVE COLON CANCER

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Adjuvant chemotherapy for node-positive colon cancer reduces the risk of recurrence and increases life expectancy, even for those over 80 years. However, surgeons and oncologists are less likely to recommend chemotherapy for people over 65 on the basis of age alone. Physicians may rely on chronological age as a proxy for other age-related factors when making treatment recommendations. The aim of this study was to develop a risk model and tool to assist treatment decision-making by clarifying which patients may not benefit from adjuvant chemotherapy. All lymph node-positive patients aged 65+ years who received surgery for colon cancer in NSW in 2007/2008 were identified using a linked routinely collected population-based dataset (n=1,477). Multilevel logistic regression modelling was used to determine predictors of 1-year mortality. Patient age was a significant predictor of mortality in simple regression ($p<0.001$), but was much less significant after accounting for other factors such as comorbidities, perioperative factors (e.g. prolonged length of stay), frailty markers (e.g. malnutrition), and other health markers (e.g. history of emergency hospital admissions). An online risk prediction tool was developed from the model which estimates 1-year mortality based on the input of patient risk factors. The tool will be prospectively tested to determine its usefulness and efficacy. The emphasis on a range of factors that predict mortality may help to reduce variation in guideline-recommended treatment that occurs on the basis of patient age alone. The model and tool also assist the identification of vulnerable older adults who may require more comprehensive assessment and management in order to cope with treatment and to improve outcomes.

THE METHODOLOGICAL CHALLENGES OF DOING OLDER PERSON RESEARCH IN AN ACUTE CARE SETTING

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This presentation will outline the experiences of the author in undertaking a study using focused ethnography in acute hospital settings. Focused ethnography is particularly useful in nursing research for exploration of culturally mediated patterning of acts of care delivery that occurs within a small group in a specific context. The study explored the clinical practice of nurses when they are assessing and managing pain in older people in an acute care setting (medical and/or surgical wards). Methods included non-participant observation, document review, and interviews with nurses and older inpatients over a period of six months. The aim of the presentation is to discuss the methodological challenges associated with undertaking fieldwork that is inclusive of both nurses and older people within acute care. Topics covered include the methodological challenges of using a focused ethnographic approach, practical aspects of undertaking fieldwork, gaining access, negotiation, immersion and distancing oneself in multi-site research will be discussed. The role that a researcher is required to assume, ensuring ethical principles are adhered to, rigor and reflexivity will also be covered. Procedures for dealing with gatekeepers and supporters are outlined. Recommendations are made aimed at facilitating and enabling more research in acute care settings about older people to improve their stay when in hospital.

ENABLING FUNCTION: HOW DO WE MEASURE PERFORMANCE IN COMPLEX EVERYDAY ACTIVITIES TO ESTIMATE FUNCTIONAL COGNITION IN OLDER ADULTS? A SYSTEMATIC REVIEW AND EVALUATION OF MEASUREMENT PROPERTIES

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The complicated relationship between performance in everyday functioning and cognition in older people, sometimes called ‘functional cognition’, has been only partially explained in the research. There is a lack of consensus regarding the best approach to assessment of task performance in complex everyday activities; informant report, self report and clinician ratings are used but “functional assessments” are considered superior. These approaches have constraints and there is no ‘gold standard’. Different methods can influence outcomes and clinically accessible, standardised instruments to assess task performance in everyday activities are lacking. This systematic review aims to identify observational assessments of task performance in complex everyday activities to estimate functional cognition in older adults with cognitive impairments, and to assess psychometric properties, ecological validity and clinical utility of the identified instruments. Electronic databases will be searched to identify assessment tools. A second search will be completed using the names of these instruments to identify studies relating to measurement properties. Measurement properties will be evaluated using the Consensus-based Standards for the selection of health Measurement INstruments (COSMIN) checklist. Additional quality criteria (Terwee et al 2007) such as ecological validity and clinical utility will be applied to determine which instruments are of the highest quality. Data will be presented describing observational assessments of task performance found in the literature. Analysis of psychometric properties will be presented. Strengths and weaknesses of assessment tools will be discussed in the broader context of assessment of older people living in the community. Specific issues relating to measurement in occupational therapy (OT) practice with clients with cognitive impairment will be raised, and the implications for improving the OT contribution in the diagnostic process in Mild Cognitive Impairment or dementia will be considered.

DIET HISTORY QUESTIONNAIRE FOR OLDER MEN: DEVELOPMENT, USE AND PRELIMINARY VALIDATION

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Dietary intake data collection in older men requires a method that is comprehensive yet applicable in epidemiological studies. This study discusses the methods used to develop, apply and validate the diet history questionnaire (DHQ) used in the Concord Health and Ageing in Men Project (CHAMP). The DHQ was designed to estimate the nutritional intake of men aged 70 years and older who participated in the CHAMP. The DHQs were administered by a trained dietitian in participants' homes. Participants were asked about their usual intake during the past three months, using food models for quantifying intakes in the DHQs. Four-day weighed food records (4dWFR) were used to establish the validity of the DHQ. Men were asked to record their dietary intake for four consecutive days (including one weekend day). Before starting the 4dWFR, participants received a calibrated set of scales (Salter), training from the dietitian, and written and photographic instructions on how to weigh and record foods and drinks. Nutritional intake of both DHQ and 4dWFR were converted into nutrients via FoodWorks7. Statistical methods included linear regression and Bland-Altman analysis. Four hundred and ten men completed DHQs, and 44 completed the 4dWFR. The mean age was 81.3 years (SD 4.5 years), mean BMI was 27.1 Kg/m² (SD 4.37 Kg/m²), and mean energy intake was 9048.8 kJ. Correlation of total energy between methods was good ($r=0.48$, $p=0.01$), for macronutrients it varied between $r=0.33$ for carbohydrate and $r=0.45$ for fibre, and for micronutrients it varied from 0.33 for vitamin D to 0.51 for calcium. Using Bland-Altman statistics, the mean difference (DHQ-4dWFR) was -211.2 kJ (95% LA = -3912.2 kJ to 3700 kJ) for total energy, with similar values for other macro- and micronutrients. The results provide evidence that the DHQ used in CHAMP is a practical method that provides reasonably valid estimates of the usual dietary intakes among the majority of CHAMP's participants.

PROSPECTIVE MEMORY: DEVELOPMENT OF A STANDARDISED QUESTIONNAIRE AND THEORETICAL EVALUATION

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Prospective memory (PM) is remembering to perform an action in the future. PM failures in older adults can have serious consequences (e.g. forgetting to take medication) and thus may threaten independent living. PM impairments have been noted in several clinical populations particularly in those with dementia. Studies examining PM and normal ageing have revealed mixed findings. Older adults generally perform poorly on laboratory measures of PM when compared to younger adults. However, in naturalistic settings older adults have demonstrated superior PM. This pattern of findings is termed "the age paradox of prospective memory". PM performance is mediated by several task characteristics. These include the type of retrieval cue (event versus time based), the number and salience of retrieval cues, and the use of memory aids. This paper reports on progress in developing a standardised PM questionnaire that can be used to screen for PM impairments, as well as examining theoretical issues in how PM is assessed, reasons for the age paradox and which characteristics mediate PM performance. Item development will be described, and the results of a study involving administration of the questionnaire to samples drawn from the general population, people with dementia and acquired brain injuries. Data was analysed using Rasch, Principal Components, Reliability and Discriminant analysis methods leading to the development of a 42-item questionnaire. A final study is currently underway to obtain norms for this questionnaire and to collect related measures to enable a theoretical analysis. Preliminary findings will be discussed. It is anticipated that this questionnaire will be used to detect PM impairments and potentially identify early signs of dementia. This in turn will assist clinicians in implementing memory interventions which will optimise the quality of life for older adults. The theoretical analysis will add to the knowledge base in the emerging field of PM.

MODELING SUBJECTIVE SURVIVAL: BEYOND POINT ESTIMATES OF EXPECTED LIFETIMES

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Individuals' subjective expectations about their life span influence decisions of saving, annuitizing wealth, and play a relevant role in explaining selection in private pension insurance markets. Modelling subjective survival is critical to the use of mortality expectations in economic models and the life insurance industry. Subjective survival factors for individuals are often based on a single observation of subjective life expectancy or subjective survival probability, and assumed to be constant either for cohorts or for any projected target age. Using data from a recent survey of middle-aged Australians, we estimate individual subjective scaling of population mortality probabilities. Comparing subjective survival probabilities with the cohort life table, we demonstrate that respondents are generally pessimistic about survival and that pessimism decreases with cohort age and target age non-monotonically. We also provide evidence that females are on average more pessimistic than males, though this difference seems to be driven by income at the individual level. Lastly, we propose a new model to incorporate unobservable heterogeneity. Our results have wide-ranging implications for explaining individual's decision making in for example life-cycle modelling and retirement policy.

SESSION H

Dementia and Carers

FROM *DRIVING MISS DAISY* TO *THE IRON LADY*: DEMENTIA ON THE SILVER SCREEN

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The ageing of the global population and the concomitant escalation in dementia diagnosis rates has been identified and thoroughly documented in Australia and elsewhere. Equally significantly, screen-based media forms have assumed an increasingly important role in shaping public awareness and opinion on a range of public health related issues, including the risk factors and consequences associated with major diseases. Mainstream film has played a significant role in this medico-cultural context. With its emphatically narrative-based structure and focus on the psychological development of character, mainstream dramas have frequently addressed illness of various types, and the physical, psychological and emotional ramifications for the patient, carer, family and institutions concerned. The burgeoning, multi-disciplinary research focus on dementia and the associated increase in public awareness in the last three decades has been reflected in a modest but significant response from mainstream filmmakers. Simplistic caricatures of 'eccentric' and misunderstood older relatives in 1960s and 70s Hollywood comedies have given way to more considered, clinically better informed and sympathetic character-based studies over the last decade (for example: *Iris*, *Away From Her*, *Aurora Borealis* and *The Iron Lady*). These and other films address dementia and its consequences from a variety of perspectives including depictions of the disease from the point of view of the person with dementia, the spouse or other family members and the health professional. Associated themes, from clinical issues - symptomatology, diagnosis and treatment – to broader emotional and socio-cultural considerations are also addressed, often in surprising detail. With reference to key cinematic texts, this paper will discuss representations of dementia in mainstream film in arguing for the increasingly important pedagogical role these representations can play in developing awareness - in both the general community and the health profession - of the complex ramifications of the disease.

RECRUITING AND RETAINING PEOPLE WITH DEMENTIA AND THEIR CAREGIVERS – LESSONS FROM THE FIELD

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Introduction; Falls prevention for community-dwelling people living with dementia and their caregivers is an area of growing research interest. While issues of recruitment and retention of participants are not new to researchers, challenges are particularly pertinent when working in the field of dementia care. **Method;** Forty participants were to be recruited to a study exploring the translation of falls prevention knowledge for community-dwelling people with dementia and/or their caregivers. Recruitment strategies included: working through two community care agencies; attendance at carer support groups/community events; personal and professional contacts; volunteer databases; clinics attached to health services; and snowballing techniques. **Results;** Twenty-seven participants were recruited. Challenges and opportunities for recruitment included: the need for a key person within an agency; buy-in from key medical staff; offering an intervention that will directly benefit participants; and the pitfalls of recruiting through already exhausted channels. Retention of participants in the study was enhanced by: an individualised program delivered in the home; remaining flexible in delivery of intervention; and understanding the competing demands on caregivers. **Conclusion;** Recruiting and retaining participants in studies poses a challenge to many researchers. Acknowledging and discussing these issues may assist other post-graduate students to develop a recruitment/retention strategy and avoid common pitfalls.

STAFF AND FAMILY PERCEPTIONS OF WANDERING-RELATED BOUNDARY TRANSGRESSION

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Wandering-related boundary transgression (BT) has been identified as a dimension of dementia-related wandering and is defined as ambulation that takes the individual beyond safe limits to out of bounds or hazardous areas. While anecdotal evidence suggests an association between BT, wandering and adverse outcomes for the person with dementia, including invasion of private space, resident to resident violence and becoming lost or trapped, to date no empirical data is available to support this. Describing wandering-related BT is an essential step towards understanding the behaviour which is reported by care staff to be troublesome and difficult to manage. A two phase, mixed methods, descriptive study was conducted to collect data about wandering-related BT using four strategies: 1) focus groups with care staff; 2) focus groups with resident's families, 3) 1:1 interviews with families of participants with dementia; and 4) direct observation of residents with dementia who wander and have been reported by their family and care staff to exhibit BT (n=8). Results from qualitative data collected in Phase 1 are presented. Care Staff (n=28) and families (n=4) participated in focus groups that aimed to explore their perceptions of wandering-related BT. Across all groups, there was a strong theme of tolerance for this behaviour as it was viewed as beyond the control of the person with dementia and part of life in Residential Aged Care (RAC). However, all groups also identified negative outcomes for the person who wandered, their co-resident, staff and families which included: increased anxiety, frustration, increased carer burden, and physical and verbal aggression. When BT was associated with these outcomes, perceptions moved from a position of high tolerance to one of intolerance requiring immediate intervention. The six themes to evolve from analysis of these focus groups will be discussed in this presentation.

DIETARY INTAKE AND MAJOR SOURCES OF FLAVONOIDS IN OLDER AUSTRALIANS WITH ALZHEIMER'S TYPE DEMENTIA

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Flavonoid intake has been related to a reduction in chronic diseases associated with ageing including cancer, cardiovascular disease and neurodegenerative diseases. Specific flavonoid subclasses, flavonols, flavones, flavanones, flavon-3-ols and anthocyanidins, have also been associated with ameliorating chronic disease risk. Total dietary intake of flavonoids and their major sources have recently been estimated in the Australian population. However, vulnerable groups at risk of dietary deficiencies were not investigated, including people living with Alzheimer's disease. Our objective was to estimate flavonoid intake and describe the major sources of flavonoids and flavonoid subclasses in older adults (+65yrs) with mild-moderate Alzheimer's disease (n=49). Data from 24-h diet recalls were cross-referenced with the USDA database for the flavonoid content of selected foods (release 3.1, 2013). Total flavonoid intake was estimated as 510mg/day, a figure lower than the Australian +65yrs estimation of 575mg/day. Black tea (80%) was the most significant dietary source of total flavonoids followed by green tea (7.5%), red wine (4.5%), apples (1.7%) and oranges (1.6%) with their respective fruit juices. Flavonols contributed 5.15% of total flavonoid intake. Dominant sources included black and green tea, onion, broccoli and apples. Flavones contributed the smallest percentage (0.15%) with the major source being parsley. Total flavanone intake provided 2% with major sources including oranges and orange juice, and lemons. Flavon-3-ols contributed 88.1% of total intake, with black tea as the major source and wine and apples contributing somewhat. Anthocyanidins (4.6%) were provided by red wine, red grapes and bananas. Conclusively, for older adults with Alzheimer's disease, total flavonoid intake is lower than current Australian estimations but contributions of dietary sources are similar. These results warrant further investigation in a larger sample to identify whether dietary flavonoid interventions may be useful to improve nutritional and chronic disease outcomes, especially relating to cognition.

VALIDITY AND RELIABILITY OF FUNCTIONAL PERFORMANCE IN DEMENTIA RESEARCH

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While research shows positive benefits from exercise for older adults with dementia, few question the appropriateness of the measurement tools used within their research. This PhD research addresses this issue by questioning the validity and reliability of commonly employed functional performance and physical activity measurement tools for use among those with dementia. The research is grounded on the idea that validity and reliability are the psychometric properties that inform the appropriateness of measurement tools for a specific population. In brief, just because a tool is valid and reliable in one population, this does not automatically translate to another population. While, it is true that many of the current measurement tools are demonstrated valid and reliable in for use in older cognitively sound adults, this may not hold true for older adults with dementia. This is a critical issue. Therefore, this paper presents the theoretical underpinnings of a doctoral thesis addressing this issue. The thesis is a five stage, mixed methodology investigation. Within Stage One, two large systematic reviews of literature will be conducted, 1) to identify all measurement tools being used within the exercise intervention literature, and 2) to examine the psychometric properties of identified measures. In Stage Two, identified measures will undergo rigorous reliability assessment within a dementia specific population. Working on the hypothesis that no current measurement tool will be found appropriate, a modification process of existing tools will be undertaken. Stage Three, informed by a qualitative search of literature, will measure construct validity modifications. Furthermore, tests for feasibility and construct validity will be conducted in Stage Four, using focus groups of dementia research experts and experienced clinicians. The final Stage will assess the internal and external reliability of the newly developed measures. This presentation will explain in detail the research methodologies and justification.

DEVELOPING A MEDICATION MANAGEMENT RESOURCE FOR ETHNIC MINORITY INFORMAL CAREGIVERS OF PEOPLE LIVING WITH DEMENTIA

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This paper outlines the development of an information resource for ethnic minority informal caregivers of people living with dementia to enable them to safely and effectively manage medications for their care recipient, in a community setting. The medication management role of the informal caregiver is a broad concept that involves maintaining continuous supplies of medications, assisting with administration, making clinical judgements and communicating with health care providers on behalf of the care recipients. Safe and effective medication management is an important role because it contributes to improved health outcomes and reduced institutionalisations for the care recipient. This role becomes more crucial and onerous, especially for informal caregivers from ethnic minority backgrounds, as the cognitive function of the care recipient declines, which is why the medication management resource was developed. The development of this medication management resource occurred in two stages; the first stage, investigated the perspectives of ethnic minority informal caregivers of people living with dementia with regard to their medication management roles. This initial study was conducted between July-October 2012 and included three focus groups and seven one-on-one interviews. The results of the verbatim transcriptions from this first qualitative study were thematically analysed and the themes were then used to guide the development of the second stage of the study which was the development of the medication management resource available in a simple, easy to understand language. This medication management resource, available in English and Italian to date, will provide ethnic minority informal caregivers of people living with dementia information and support in this medication management role. It is also anticipated that the resource will soon be available in several other different ethnic minority languages.

SESSION J

Community, Healthcare and Practice

LONG TERM CARE INSURANCE: A SURVEY OF INSURER ATTITUDES

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Financing long term care for the aged is a growing challenge in Australia as for other countries with an ageing population. One potential component of any financing system is private, voluntary insurance. This exists in the USA and France, among others, but is non-existent in Australia. The results of a recent survey of financial services providers exploring the possible reasons for this will be presented. Questions of insurability, supply- and demand-barriers and outlook for the future are addressed and analysed both quantitatively and qualitatively. The survey consisted of an online component supplemented by personal interviews. The views of financial services providers are vital to establishing what changes might be required in order to make private, voluntary long term care insurance viable in Australia, or indeed to determine that this is not a likely outcome under most reasonable scenarios. There is insight for policy makers regarding the views of providers on the role that government could play. Indeed a multi-stakeholder collaborative approach is seen as essential to overcoming the significant barriers currently perceived by providers.

INVESTIGATING CATARACT REFERRAL PRACTICES UTILISED BY AUSTRALIAN OPTOMETRISTS

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Cataract is currently the leading cause of vision impairment and accounts for almost half of blindness worldwide. Vision loss associated with cataract is typically age related and in 2005 an estimated 1.5 million Australians aged 55 or over had clinically significant cataract – representing almost one third of that age group. Cataract vision impairment can significantly reduce quality of life in older Australians, with reduced visual function, mobility and socialisation. There is increasing demand for cataract surgery, a procedure considered highly effective at restoring vision and currently the most commonly performed elective procedure in the country. Limited healthcare resources coupled with incorrect and unnecessary referrals add to a constantly expanding backlog of surgical candidates; the inequity of access endangers the safety of patients who have little choice but to wait in extensive queues as their vision deteriorates. Optometry provides 70% of all Australian eye care services, but very little is known of their decision-making processes for cataract surgery referral. This paper reports the findings of a recent survey of the cataract surgery referral practices of Australian optometrists. All 4272 optometrists who were members of the Optometrists Association Australia in April 2013 were invited to participate, with 533 (13%) responding to the survey. Results showed that driving dependence (98%), glare (94%) and previous history of falling (69%) were rated as important considerations in determining timing of cataract referral. Conversely, assisted-living status (94%) and having other medical conditions (81%) were among the factors considered to have little-to-no influence in an optometrist's cataract referral decision. Determining the criteria optometrists employ for referral is an important step towards developing a more effective referral-to-surgery pathway and more efficient utilisation of healthcare resources in order to manage patients with cataracts.

HEALTH AND COMMUNITY SERVICE USE IN OLDER ADULTS RECENTLY DISCHARGED FROM HOSPITAL: UTILISATION, COSTS AND IMPACT OF A HOME-EXERCISE INTERVENTION

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Objective: To evaluate usage and costs of hospital, medical, allied health and community services in older adults after hospitalisation and to determine the impact of a home exercise intervention. **Design:** Secondary analysis of randomised trial data. **Subjects:** 340 people aged 60 years and over within six months of hospital discharge. **Method:** Occasions of service use were recorded using monthly calendars. Cost estimates were based on unit costs identified in our recent systematic review (Farag et al 2013). Resource utilisation and costs were compared between intervention (12 months of home exercise prescribed on 10 visits from a physiotherapist) and control groups. **Results:** In the 12-month study period, 33% of participants were re-admitted to hospital, almost 100% consulted a medical practitioner and 62% accessed community services (e.g. showering, shopping). Total costs were \$3,574,742 with 58% associated with hospital admission and 30% with community services. The mean (SD) and median (IQR) costs per participant were: \$5550 (\$15,167) and \$0.00 (\$2102) for hospital admissions; \$222 (\$502) and \$0 (\$64) for allied health services; \$1289 (\$1188) and \$1019 (\$900) for medical/ nursing services; and \$3467 (\$6617) and \$1015 (\$3744) for community services. There were no significant between-group differences in median costs for hospital ($p=0.45$), medical ($p=0.36$), allied health ($p=0.52$) or community services ($p=0.41$). **Conclusion:** The study highlights substantial acute care and community costs associated with care for this high risk population. A structured exercise program designed to reduce falls and improve performance did not have a significant impact on resource use.

SESSION K

Health Conditions and Management

MEASURING THE PREVALENCE AND PATTERNS OF MULTIMORBIDITY IN AUSTRALIA

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As Australia's population ages, the number of people with multiple chronic conditions, or "multimorbidity", will increase. People with multimorbidity have decreased quality of life, and increased: mortality; use of medical services; and complexity of care. To appropriately meet the demands of this high needs group, we need to know the prevalence and patterns of multimorbidity. We aimed to measure the prevalence and patterns of multimorbidity in Australia using a sub-study of the BEACH project. A national, random sample of 375 GPs were asked to record all diagnosed chronic conditions in 30 of their patients, using the GP's knowledge, the medical record and the patient's knowledge. We weighted the data using attendance and population data to also estimate the prevalence within the Australian population. 290 GPs recorded all conditions within 8,707 patients. Two-thirds of these patients (66.3%) had at least one chronic condition, nearly half (47.4%) had 2+, and 33.8% had 3+ chronic conditions. The proportion of patients with multimorbidity increased with age from 3.2% using 2+ and 0.8% using 3+ for those aged <15 years to 91.2% (2+) and 79.8% (3+) for patients aged 85+. Some patterns of multimorbidity were relatively common, such as hypertension, hyperlipidaemia and osteoarthritis (5.5% of patients) and hypertension, hyperlipidaemia and ischaemic heart disease (4.1%). Adjusting the results to match that of the population, half (50.8%) had at least one chronic condition, a third (33.8%) had 2+, and 22.9% had 3+ conditions. We have shown that a significant proportion of the population and a higher proportion of patients sitting in front of GPs have 2+ or even 3+ chronic conditions. Further research is needed to define exactly what is meant by multimorbidity and measure its impact on health and the Australian health care system.

INVESTIGATION OF POORER BLADDER CANCER SURVIVAL IN WOMEN THAN MEN IN NSW AUSTRALIA: A DATA LINKAGE STUDY

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We investigated the associations of a range of personal and clinical variables with bladder cancer survival in men and women in NSW to see if they can explain why bladder cancer survival is consistently poorer in women than in men. Bladder cancer is predominantly a disease of the elderly, the average age at diagnosis is 74 years, and has major impacts on quality of life. All 6,880 cases of bladder cancers diagnosed in NSW between 2000 and 2008 were linked to hospital separation data and to deaths. Cox proportional hazards regression models were constructed in those who did or did not undergo cystectomy. Sixteen per cent of bladder cancer patients underwent cystectomy (16 per cent of men and 15 per cent of women). Women who underwent cystectomy were 26 per cent more likely to die than men (Hazard Ratio (HR) 1.26, 95% confidence interval (CI) 1.00-1.59) after adjustment for age, stage, time from diagnosis to cystectomy, distance from treatment facility and country of birth. However, in those with a history of cystitis, the adjusted hazard was 55 per cent higher in women (HR 1.55, 95%CI 1.15-2.10) than men while, in the absence of this history, there was no difference in the hazard between women and men (HR 0.99, 95%CI 0.57-1.70). This apparent modification by cystitis of the effect of sex on bladder cancer outcome was not seen in patients treated only by resection: the adjusted HRs in women relative to men were 1.10 (95% CI 0.92-1.31) in those with a history of cystitis and 1.21 (95% CI 0.98-1.50) in those without. Women's poorer survival from bladder cancer than men's remains unexplained. The possibility, however, that some factor associated with a history of cystitis may contribute to or explain the poorer outcome in women merits further investigation.

HYPERTENSION, OBESITY, AND HYPERCHOLESTEROLEMIA AMONG URBAN INDONESIAN WOMEN

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Background; While women living in urban Indonesia have more access to social and human services than rural women, they can also be more exposed to some negative impacts that stem from urban living. This could mean increased risk of hypertension, obesity, and hypercholesterolemia, which are risk factors for chronic disease. **Objective;** To describe the pattern of association between hypertension, obesity and hypercholesterolemia among adult women in urban Indonesia. **Methods;** Secondary analyses of data from the 2007 Indonesia Family Life Survey (IFLS), involving 9,465 women aged 15 years and above, residing in urban areas in Indonesia. The prevalence of hypertension, obesity, and hypercholesterolemia were calculated for three different age categories of women. Fractional polynomial regression was applied to assess the pattern of association between age and systolic blood pressure (SBP), diastolic blood pressure (DBP), total cholesterol level, and Body Mass Index (BMI). **Results;** Prevalence of hypertension, obesity and hypercholesterolemia among urban Indonesian women were 37%, 23%, and 38%, respectively. The three conditions were more prevalent among women older than 50 years compared to the younger age groups ($p < 0.05$). However, fractional polynomial regression shows that the association between age and these conditions are non-linear. The predicted probability of SBP, DBP, BMI, and cholesterol level were inclined until a certain age, then demonstrated a decline prediction. **Conclusion;** Urban Indonesian women aged 50 years and older experienced greater burden of hypertension, obesity, and hypercholesterolemia. However, blood pressure, BMI and cholesterol level did not consistently increase across age. The high prevalence of hypertension, obesity, and hypercholesterolemia among older women could lead to a high prevalence of chronic disease. These findings highlight the importance of screening for chronic disease risk factors, particularly among older women, and targeting women in chronic disease prevention programs from early adulthood

ISSUES WITH HYPERTENSION MANAGEMENT IN THE ELDERLY

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Introduction: Hypertension is a common, manageable, chronic risk factor for cardiovascular disease and associated with significant morbidity and mortality. Optimal hypertension management is important, yet it is estimated that a significant proportion of elderly patients remain poorly controlled despite wide availability of antihypertensive medications. Understanding the current patterns of antihypertensive utilization is essential for ensuring quality use of medicines and optimising clinical care in elderly hypertensive patients. **Aims;** To identify patterns of antihypertensive medication use, including changes to treatment during hospitalisation, in elderly patients. **Design and Methods:** A retrospective, cross-sectional medical records survey of medicine use and blood pressure control in elderly (age ≥65 years) patients (n=503) admitted to a large tertiary teaching hospital in NSW from January to December 2010 was conducted. Blood pressure control was assessed according to the current Australian guidelines. **Results:** This study presents the results from the first 117 patients. Almost two thirds (62.4%) of patients had a documented history of hypertension. The mean age of the hypertensive patients was 81.3 years (range: 65.4-95.8) and 66 % (n=48) were female. The most commonly prescribed antihypertensives on admission (23.7%) and on discharge (24.8%) were ACEIs. During hospitalisation 45% of patients experienced changes to their antihypertensive regimen despite the majority of patients (n=82.2%) being admitted for non-cardiovascular related indications. Only one patient was admitted with for management of hypertension. Information on pre-admission blood pressure control was unavailable for most patients (83.6%) and for the patients for whom BP on admission was known, 35.6% were considered to be at target. On discharge, 63.9% of patients had a target BP reading. **Conclusions:** The hospitalised elderly represent a vulnerable population. Many patients experienced to changes to their antihypertensive regimens during hospitalisation despite a lack of long term information about blood pressure control.

CONCERN AND RISK PERCEPTION FOR OSTEOPOROSIS AND FRACTURE AMONG POST-MENOPAUSAL AUSTRALIAN WOMEN: RESULTS FROM THE GLOBAL LONGITUDINAL OSTEOPOROSIS STUDY IN WOMEN (GLOW) COHORT

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Aim: To identify factors associated with concern and perception of risks of osteoporosis and osteoporotic fractures and determine whether bone mineral density (BMD) testing influenced concern and risk perception. **Methods:** Study subjects (n=1082, age: 55-94 years) were female Australian participants of the Global Longitudinal study of Osteoporosis in Women (GLOW). Self-administered questionnaires were sent annually from 2007-2010. Study outcomes included 'concern about osteoporosis', 'perception of getting osteoporosis' and 'perception of fracture risk' compared to other women of similar age. The closest post-BMD testing questionnaires or baseline questionnaires were used for women with and without BMD testing respectively. Multinomial logistic regression was used for the analysis. **Results:** BMD testing, prior fracture after age 45, younger age and lower self-reported general health were significantly associated with being 'very' or 'somewhat concerned' about osteoporosis and having a 'much higher' or 'little higher' risk perception of getting osteoporosis and fractures. A poorer BMD result was associated with higher concern and higher risk perceptions. Other factors associated with concern about osteoporosis were the presence of comorbidities for those 'very concerned', having ≥ 2 falls in the preceding year for those 'somewhat concerned' and maternal osteoporosis for both responses. Factors associated with perception of osteoporosis risk also included maternal osteoporosis, presence of comorbidities and weight loss of ≥ 5 kg in the preceding year for 'much higher' and 'a little higher' responses. Low body mass index was associated with 'much higher' perception of osteoporosis risk. No additional factors were associated with perception of fracture risk. **Conclusion:** This study showed that women's concern and risk perception of osteoporosis and osteoporotic fractures were reasonably well founded. However, increasing age, height loss, smoking and drinking were not factors associated with concern and perception despite being known osteoporosis risk factors. These factors should be considered in planning for education and awareness raising programs.

Abstracts

Poster Presentations

PREVALENCE AND RISK FACTORS FOR ADVERSE DRUG REACTIONS WITH ANTIHYPERTENSIVE MEDICATIONS IN ELDERLY HOSPITALIZED PATIENTS: A STUDY DESIGN

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Introduction: Elderly population represent about 15% of the Australian population, yet the elderly consume at least 30% (one-third) of the prescribed medications with cardiovascular medications are the most commonly prescribed pharmacologic group. Nevertheless, medications are problems bound and adverse drug reactions (ADRs) are considered one of the major medication related problems that increases with advancing age. Ensuring the safety of medications especially those used among the elderly is essential for ensuring optimal clinical care. **Aims:** The aims of this study are to explore ADRs in elderly patients in hospital settings and to identify risk factors for ADRs associated with antihypertensive medications in the elderly. **Design and Methods:** This is study is a retrospective, cross-sectional survey of patients' medication notes admitted to a large Australian tertiary teaching hospital between January and December 2010. The study's main inclusion criteria are medical records for patients aged 65 years and older of both genders who have had a hospital stay of two days or more. Patients who are not receiving any pharmacological treatment will be excluded from the study. Eligible medical records will be reviewed by a pharmacist researcher using a purpose-designed data collection form. Validated Naranjo scale (ADR probability scale) and Halls criteria are used to determine the likelihood, causality, and preventability of potential ADRs. A modified ADRs trigger list will be used to assess in identifying undocumented ADRs. **Discussion:** This study will provide valuable information about antihypertensive medications use and related ADRs and identify risk factors associated with the increased risk of ADRs in this population. This work also acts as the basis for the development of an ADR risk assessment tool to improve the safety of antihypertensive medications in the elderly.

USING GERONTECHNOLOGY TO SUPPORT GOOD NUTRITIONAL HABITS IN THE ELDERLY

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The ageing of Australia's population is expected to put an increasing strain on the health and aged care infrastructure. There is a strong need to investigate ways to help keep the elderly population healthy and living at home to reduce pressure on these government services, including a focus on preventative health programs. One step that can have a positive impact for an individual's desire to experience active ageing, as well as for decreasing pressure on government services, is to explore ways to help keep the elderly well-nourished while living at home. Undernourishment in the elderly is common, and is one of the issues that can lead to frailty for this age group. Frailty increases the risks of falls and injuries and therefore impacts greatly on older people's ability to experience active ageing, whilst also increasing the need for care services. This paper discusses research which will investigate ways that Gerontechnology can be used to encourage healthy nutritional intake in the elderly, in order to maintain good health and enable active ageing. Within the Gerontechnology community it has been identified a gap in the area of involving the elderly in design and development of technology for their use, and therefore their needs and preferences in how they wish to use technology are often not accounted for. A focus of this research is therefore to include the elderly as stakeholders in a user-centred design process. The intended outcome of this project is to create an information system for providing support for healthy nutrition, which is acceptable to the elderly population. It is also envisaged that as a result of this project guidelines will be developed for successful inclusion of the elderly as stakeholders in future Gerontechnology projects.

NEURONAL LOSS AND PATHOLOGY IN LANGUAGE-ASSOCIATED REGIONS OF LOGOPENIC VARIANT OF PRIMARY PROGRESSIVE APHASIA

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Dementia is one of the biggest problems facing the ageing population in Australia and worldwide. Of the many different forms of dementia, Primary Progressive Aphasia (PPA) is one that chiefly affects language function, which significantly impairs the ability to communicate and, consequently, quality of life. The logopenic variant of PPA (PPA-lv) is the most recently described language variant, and presents with slowed speech, impaired naming and sentence repetition. The underlying neural substrates that distinguish PPA-lv from other types of PPA are still being determined. PPA-lv patients have cortical thinning on MRI in the supramarginal gyrus (BA40) and superior temporal gyrus (BA22). This study examines whether cellular changes in these regions distinguish PPA-lv from the non-fluent variant of PPA (PPA-nfv) and also from patients with Alzheimer's disease (AD). BA40 and BA22 cortical samples from 7 cases in each group, as well as normal controls, were obtained from the Cambridge and Sydney Brain Banks. Neuronal cell counts were performed on cresyl violet stained sections and immunostaining was performed using antibodies against TDP-43, tau and amyloid- β . Analysis of variance showed a significant and similar degree of neuronal loss in both regions in PPA-lv and PPA-nfv compared with controls and AD (controls and AD did not differ). Pathologically, PPA-lv had sufficient AD pathology for a definitive diagnosis, as shown in previous studies. Our novel results show that neuronal loss in BA40 and BA22 is more severe in the language variants of PPA when compared with AD. However, they also suggest that neuronal loss in BA40 and BA22 is not specific to PPA-lv, as it is present to a similar degree in PPA-nfv cases. We suggest that the additional neuronal dysfunction is due to the AD pathology on top of the neuronal loss in these regions. Such pathology is likely to be responsible for the more severe cortical thinning on MRI in these regions and the associated specific language deficits observed in PPA-lv compared with PPA-nfv.

THE ASPREE HEALTHY AGEING BIOBANK: TAKING THE LABORATORY TO THE PEOPLE

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The ASPREE Healthy Ageing Biobank aims to collect biospecimens from 10,000 healthy Australians who are 70 years of age or older, and who have agreed to participate in the ASPREE study. ASPREE (ASpirin in Reducing Events in the Elderly) is a double-blind, placebo-controlled clinical trial of low dose aspirin for primary prevention of major disease in the elderly. Healthy participants eligible for the ASPREE study have detailed clinical and demographic data collected at baseline, and will be followed annually to ascertain outcomes of interest, in particular cardiovascular disease, cancer and dementia events. Multiple aliquots of blood components and urine samples from each participant are frozen for future analyses. The biospecimens will enable evaluation of new predictive or early diagnostic biomarkers of older onset diseases or conditions, with the goal of being able to prolong disability-free and independent living in the elderly. The ASPREE Biobank is the only biobank in the world focussing on older, healthy persons. Unlike most clinical trials and biobanks which are situated in major cities, the ASPREE Biobank is strengthened by the participation of regional communities across Victoria, Tasmania and southern NSW together with the metropolitan areas of Melbourne, Hobart and Canberra. This offers Australians from regional and rural communities the opportunity to participate in the ASPREE Biobank, resulting in a more representative sample of the older Australian population. To enable quality sample collection and processing from as many participants as possible, three solutions have been implemented: 1. ASPREE Biobuses (mobile laboratories); 2. ASPREE Biobank couriers working together with pathology collection centres; and, 3. ASPREE Biobank regional processing hubs. This community-based approach is advantageous for studies involving older people who do not have the mobility or the confidence of younger participants to attend new environments, and provides a unique link between the research laboratory and the people.

FAMILY MEMBER EXPERIENCES DURING AN OLDER LOVED ONE'S DELIRIUM

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The research described in this poster explores the lived experience of family members who are with their older loved one during delirium. Based on phenomenology the study is concerned with describing the meanings of family member experiences during delirium in older people. Understanding the experiences of family members is important for the provision of support to family members and the appropriate involvement of family members in the older person's care. The importance of healthcare staff and services regarding family members as integral to quality care and supporting them is highlighted in contemporary literature. Despite this acknowledgement, the experience, role and concerns of family members are often unknown or overlooked during the care of older people. Family support strategies have been suggested by some authors however there has been little exploration of family member experiences during delirium as a basis for these strategies, highlighting the importance of this study. The preliminary findings of the study are presented in the poster. *Changing family portraits: Sudden existential absence during delirium* depicts family member experiences of being with their older loved one during delirium. Existential absence for family members is experienced as suddenly losing the familiar presence of their loved one as a person, and the arrival of a stranger's presence. These findings have the potential to increase recognition of the impact of older person delirium on family members, to increase recognition of the family within comprehensive care of the older person in the Australian healthcare system, and to inform further research related to family support and involvement in care during delirium. The study supports active ageing by understanding the impact of delirium on family members, often people who are older themselves, and suggesting the support they need to maintain wellbeing.

FALL RISK ASSESSMENT IN OLDER PEOPLE USING INERTIAL SENSORS

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Almost 30% of people above 65 years of age fall each year all over the world. This figure increases to 40% for people older than 80. Falls have the highest percentage of injury-related deaths and fall related injuries have the highest cost after vehicle injuries. The mortality rate of fall increases dramatically with age and 70% of accidental deaths in persons above 75 are caused by fall. Fall in older people have many severe outcomes. Fall is the cause of 10% of elderly rushing to the hospitals and 6% of further hospitalization. The fall consequences can be physical such as fractures, as well as social such as isolation and depression. It is proved that frail elderly fallers display a significantly slower walking speed than non-fallers. Gait is a complex motor phenomenon with many other measurable facets besides speed that might identify fall risk. Walking speed, cadence, stride length and stride time are important factors which are significantly different between fallers and non-fallers. In addition, balance plays a key role in fall prediction. Keeping balance, an automatic process in healthy people, can be challenging for the elderly while doing daily chores. In this study, an objective method to assess the fall of risk in older people using inertial sensors is proposed. The data deployed in the study is obtained through MTw Development Kit from Xsens technology. MTw is a small, highly accurate wireless inertial 3D motion tracker consisting of 6 inertial sensors. MTw has many benefits compared to similar inertial sensors. MTw kit is completely wireless and portable which makes it very practical and easy to use. Data is collected in the Windows software package MT Manager. This software allows configuration of the MTw's, real-time view of 3D orientation and sensor data, recording of data streamed from the MTw's through the Awinda Station and export to ASCII files for further analysis. The kinematic data is subsequently used, using an intermediate program coded in MATLAB. Using the data, a stochastic method, based on Gaussian Mixture Model is used to identify deviation from normal gait. The results obtained so far indicate that the proposed method can assess the risk of fall caused by aging.

THE MASTERS ATHLETE AS A MODEL OF SUCCESSFUL AGEING

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Australia's population over the age of 65 will almost double by 2030. Although research suggests the health of older Australians is improving, this period of later life is associated with increased levels of disease and disability as well as greater reliance on healthcare, aged care, and welfare. As this growing cohort faces elevated risk of disease, disability, and dependence, there is a great impetus to establish successful ageing (SA) guidelines. To date there has been no consensus on the definition or methods of measuring SA. Currently, SA is primarily viewed from two different perspectives: (1) defined as a state of being which can be objectively measured; (2) a process of ongoing adaptation. Despite this divergence in perspectives, the most evolved models describing SA are in agreement regarding the three domains within which SA can be measured: physiological, psychological, and social. Current evidence suggests that an individual may experience positive impacts in each domain via the adoption of health-enhancing behaviours that positively influence disease, functionality, longevity, and quality of life. The Masters athlete (MA) is a group of older adults who systematically train for, and compete in, organized forms of competitive sport specifically designed for older adults. This cohort has emerged as one of interest due to (1) their engagement in various health-enhancing behaviours; and, (2) the dramatic increases in Masters athlete sport participation over the past 25 years. However, the MA remains to be examined using a contemporary, multidimensional construct of SA. We propose a series of studies that will examine whether the MA is a model of SA across the physiological, psychological, and social domains.

THE ROLE OF ASPIRIN IN PROLONGING LIFE FREE OF MENTAL AND PHYSICAL DISABILITY: THE ASPREE TRIAL

HALL Jack¹, ORCHARD Suzanne¹, LOCKERY Jessica¹, NICHOLS Trisha¹, WOODS Robyn¹, MCNEIL John¹, on behalf of the ASPREE investigators^{1,2,3,4}

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Discovering ways to preserve the physical and cognitive health in the elderly is a research priority for Australia's ageing society. Evidence suggests that aspirin's anti-platelet and anti-inflammatory properties may help combat age-related conditions such as cardiovascular disease, dementia and cancer although the confirmation of such benefit in older persons awaits a definitive primary prevention trial. Aspirin trials conducted to date have focussed on cardiovascular benefit in people from the middle-age group and have not evaluated the bleeding risks. Older people, who have more to potentially gain from aspirin, are also at higher risk of side-effects, such as bleeding. The ASPREE (**AS**Pirin in **R**educing **E**vents in the **E**lderly) clinical trial is testing if 100mg of daily aspirin prevents or delays heart attack, stroke, dementia and some malignancies over an average of 5 years in otherwise healthy people aged ≥ 70 years. This large-scale, placebo-controlled (50:50) clinical trial will weigh the benefits of aspirin against the risks, integrated in the novel primary outcome of 'disability-free survival'. In Australia, ASPREE is primarily undertaken at metropolitan and regional general practices in the south-eastern states and territories. Funded largely by the National Institute on Aging (USA), Victorian Cancer Agency and NHMRC, ASPREE has recruited 70% of its target 19,000 participants (16,000 from Australia, 3000 from the USA) and has developed the infrastructure to conduct multiple ancillary studies into healthy ageing. Clinical practice will change world-wide as a result of ASPREE. If the trial shows net gain, GPs will recommend their healthy older patients take daily low dose aspirin. If the trial does not support a beneficial effect of aspirin, then many people will be saved from taking unnecessary medication. The results from ASPREE are expected in 2018.

AGE RELATED PHYSIOLOGICAL CHANGES IN ASTHMA

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Background: Asthma can be a life-long disease which has increased morbidity and mortality in older patients. In these patients, it has clinical similarities with chronic obstructive pulmonary disease (COPD) which is also associated with increased morbidity and mortality. What remains unknown is whether the pathophysiology of asthma changes with age, which may lead to a convergence between asthma and COPD in older people with airways disease. Airway hyperresponsiveness (AHR) is a key objective marker of asthma. The aim of this study was to compare the pathophysiological predictors of AHR in older asthmatics with young asthmatics and COPD subjects. **Methods:** Nineteen old (60-80 years) and 61 young (18-46 years) patients with asthma, and 31 patients with COPD (53-86 years) had measurements of lung function, airway responsiveness and airway inflammation. The multiple breath nitrogen washout was used to measure function in the conducting airways (Scond) and peripheral airways (Sacin). **Results:** In old patients with asthma, the independent predictors of airway responsiveness were gas trapping and abnormal peripheral airway function (model $r^2 = 0.57$, $p = 0.0001$). In young patients with asthma, the independent predictors of AHR were abnormal conducting airway function, inflammation, and airway obstruction (model $r^2 = 0.51$, $p = 0.0001$). In COPD, AHR was predicted by more normal peripheral airway function and gas trapping (model $r^2 = 0.35$, $p = 0.001$). **Conclusions:** The drivers of AHR are different between old and young asthmatics, suggesting that the pathophysiology of asthma changes with age. This is consistent with the development of more peripheral disease with age. However, this does not lead to the convergence of asthma and COPD, since AHR is determined by different underlying disease-specific processes in asthma and COPD.

IMPACT OF MEN'S SHEDS ON OLDER MEN'S HEALTH- A MIXED METHODS APPROACH

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The presentation is grounded in the author's methodology for a study of men's health as part of ongoing PhD research. Stress and social isolation in older men are on the rise worldwide and call for more attention from policy and decision makers as well as from all disciplines involved in men's health and wellbeing. Researchers in this field have been classically key actors in evaluating the impact of health promotion initiatives aimed at promoting social inclusion for older men. In this process, a unique challenge that is often encountered is the use of research designs that both capture the complexity of the lived experience and biological measures such as resting heart rate variability (HRV) and cortisol levels in single studies. In this presentation, the practical relevance of pragmatism in ageing and health as a research paradigm which allows use of both quantitative and qualitative research methods within a study is proposed. Opportunities for mixing qualitative and quantitative data are explored using an example of a study that investigates the impact of social inclusion provided by Men's Sheds on the health and wellbeing of the men involved. Finally, in order to challenge ageing and health researchers to move beyond paradigm wars and achieve data integration, practical strategies for mixing qualitative and quantitative data types are explicated.

THE SIGNIFICANCE OF SOCIAL NETWORKS/INTERACTIONS AND LOCALITY FOR THE WELLBEING OF OLDER PERSONS

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The aged population in Australia is expected to double in coming decades and the implications of this are vast and multi-faceted. To achieve successful strategic planning and policy management, recognition of the often locality specific needs of the ageing population is crucial. Social isolation and loneliness are frequently associated with ageing and can be dependent on a multitude of factors including gender, family networks, ethnicity, location, design and situations of care. This paper considers some of these issues whilst recognising the significant divide between rural towns and metropolitan areas, and the varying circumstances within these brackets. The central question that this research focuses around is identifying the various issues regarding socialisation in different locations and the factors that contribute to these to allow for practical recommendations for the future. An individual ageing in a rapidly growing sea-change community like that of Victor Harbor in South Australia, faces similar and different challenges to an individual in Jamestown; a smaller remote rural town in the Mid-North of South Australia. The services available in these areas vary as do the local community networks and attitudes of individuals. Public design also influences accessibility and wellbeing of older people and consideration of issues such as density and access arise in the metropolitan milieu. This research seeks to answer such questions through case study analysis in selected rural and metropolitan areas, involving semi-structured interviews with older individuals and stakeholders involved in decision-making around the care of those individuals. It is widely recognised that fragmentation between tiers of government occurs; some service gaps for older persons exist whilst other services are duplicated due to lack of collaboration and communication. Thus this research is significant in its aim to propose direction for future service provision that appropriately considers the individual and collective needs of the ageing population.

AN IMPACT OF THE AGEING SOCIETY ON THE LEVEL OF SERVICE AT AIRPORTS: A CROSS-CULTURAL AND FUTURE-ORIENTED PERSPECTIVE

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This paper discusses future international airport design standards coping with senior passengers' spatial needs and their cultural diversity. Australians over 60 will double in the next four decades, almost one third of the whole population, implying that the age structure of air passengers is changing. Despite people's physical ability levels gradually declining with age, studies on the air terminal design standards for senior passengers are still in an early stage. Given the increasing senior population and passenger traffic worldwide, it is important to examine the relationship among ageing, cultural values, and passengers' spatial needs in the air terminal. The level of service, represented by square metre per occupant, is used for the design standards for personal spaces. Even under the identical level of service, however, each passenger's perceived personal space may vary by one's cultural background as well, and so does his or her service satisfaction in the air terminal. This study will employ the Repertory Grid technique and semi-structured interviews to examine each passenger's perceived level of service and the role of one's age and cultural values, in his or her own language. For next two decades, migrants from Asia are expected to show the largest increase in Australia. Hence, a total of 30 younger and senior Korean passengers were chosen as representative of an Asian passenger group, for comparison with 30 younger and senior Australian passengers. Three Metrics analysis is applied to personal constructs on the grids, and then the Latent Semantic analysis on the data gained from the personal interviews is followed. Findings of this study are expected to raise the necessity of reviewing terminal design standards to cope with the changing age and ethnic structure of air passengers, and to examine the relationship between crowdedness within the air terminal and passengers' service satisfaction at international airports.

EXPLORING AGEING AND AGED-CARE NEEDS OF LESBIAN WOMEN

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Background: Research on lesbian, gay, bisexual and transgender (LGBT) seniors has identified that experiences of stigma and discrimination may result in feelings of invisibility and reduced likelihood of accessing healthcare services. Research that has examined the relationship between social determinants of health with sexuality in older lesbian women is scant. Therefore, the aim of this presentation is to explore how different forms of discrimination and other social factors impact on LGBT perceptions of ageing and aged-care services. A recent study will be utilised to support this presentation. **Methods:** The research employed a qualitative approach, comprising semi-structured interviews, a group interview and an email interview. Eleven individuals participated in the study. Participants were asked to share their experiences of discrimination, social networks, and thoughts about ageing and aged-care provision. The narrative data were analysed for emergent themes. **Results:** The majority of participants had limited savings and had no or little superannuation. As older lesbian women, they were more likely to experience sexism, ageism and sexuality discrimination. These social determinants restricted their social support and contributed to negative anticipation of aged-care services. **Discussion:** Maintaining independence, fear of nursing home admission, elimination of sexism, ageism and sexuality discrimination, legislation around relationships, person-centred services and promoting human rights are discussed in this presentation. **Conclusion/Implications:** This research may be of importance in explaining the influences of different forms of inequalities and how these relate to lesbians' perceptions of the ageing process. The findings provide aged-care providers and policy makers with a better understanding of how intersections of sexuality with other social determinants constrain decision-making.

INVESTIGATION OF THE ASSOCIATION BETWEEN ORAL HEALTH AND HEALTH OUTCOMES IN OLDER PEOPLE FOLLOWING A NECK OF FEMUR FRACTURE: A PILOT STUDY

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Background: Hip fractures can have a disastrous impact on an older person's life, reducing their independence and increasing the risk of early mortality. Most people who suffer a hip fracture will have comorbidities, such as malnutrition, dementia, or anaemia that increase the rate of functional decline following surgery to repair the fracture. Poor oral health is increasingly impacting on the oral health of older Australians as they retain natural teeth throughout life. The impact that oral health has on general health outcomes of patients following a neck of femur fracture has not been explored. **Methodology:** This project will be conducted over a 2-year period and will investigate the relationship between oral health and general health outcomes in patients aged 65 years and older, who have been hospitalised for a neck of femur (NOF) fracture at the Queen Elizabeth Hospital (TQEH), Adelaide. Where possible validated assessment tools will be used to collect general health data and a comprehensive oral assessment will be conducted at baseline and six months following the fracture. It is expected that data collection will start by the 1st of September 2013.

LOW-INTENSITY EXERCISE IMPROVES FUNCTIONAL FITNESS AND QUALITY OF LIFE IN COMMUNITY-DWELLING SEDENTARY OLDER ADULTS

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Evidence suggests that older people can gain significant health benefits not only from moderate- to vigorous-intensity exercise but also from low-intensity physical activity. However, the comparative efficacy of structured low-intensity range of motion and balance exercise regimens to improve functional fitness (FF) and quality of life (QoL) in sedentary elderly has received limited investigation. This study investigated the effects of two 12-week structured low-intensity flexibility and balance exercise regimens, Thai Yoga and Tai Chi, on components of FF and QoL in adults aged over 60. Thirty-nine participants apparently healthy yet sedentary community-dwelling older adults (29 women, mean age 67), were randomly allocated and counter-balanced to either Thai Yoga, Tai Chi, for 12 weeks, twice weekly for 90 minutes each session, or a Control group who received telephone counselling. FF was evaluated using the Senior Fitness Test battery. QoL was assessed using self-report measures that included the 36-item Short-Form Health Survey (SF-36), the Centre for Epidemiological Studies of Depression (CES-D), the Physical Activity Scale for the Elderly (PASE), and the Physical Activity Enjoyment Scale (PACES). Outcome measures were assessed at baseline, six, 12, and 24 weeks. The data were analysed using repeated-measures ANOVA. Despite the low-intensity of the exercise regimen, Thai Yoga participants significantly improved upper-body strength (28.8%), lower-body strength (28.4%), upper-body flexibility (64.1%), lower-body flexibility (103.8%), agility and dynamic balance (14.6%), aerobic endurance (11.3%), SF-36 vitality dimension (17.7%), and PACES (24.0%) with the beneficial effects were maintained 12 weeks after completion of the exercise regimen. These data provide the first objective evidence that low-intensity flexibility-balance exercise, has significant beneficial effects on the physical and psychological functioning in sedentary older adults, and that these benefits are comparable to those of multicomponent traditional exercise programs. The findings suggest that older people can improve their health and well-being through low-intensity exercise regimens.

PROTEIN SUPPLEMENTATION MAY IMPROVE PHYSICAL FUNCTION IN OLDER PEOPLE

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Sarcopenia is the involuntary loss of muscle mass associated with ageing and is a recognized geriatric syndrome which affects the quality of life and cost of care of the elderly. Protein supplementation improves muscle strength and function in well, older subjects undergoing resistance training. However, many elderly are unwell and unable to participate in exercise and the usefulness of protein supplementation on muscle mass and function in this group is not known. The aim of the study is to assess the evidence for the use of supplemental protein in the treatment and prevention of sarcopenia in older people with chronic disease or in elderly who are unable to perform resistance training exercises. A literature search of eleven databases was performed using keywords related to elderly, protein intake and muscle strength and function. All randomized controlled trials assessing the effect of essential amino acids (EAA) and branched chain amino acids (BCAA) published between 1990 and 2013 were included. The American Dietetic Association quality tool was used to grade study quality and quality assessment, and data abstraction was undertaken by 2 researchers. Fifteen trials were identified with a total of 1148 subjects with mean age over 60 years. Ten trials were of positive quality. Study limitations included inadequate reporting of inter-current treatments, including dietary intake and exercise. Six of the studies assessed frail or sarcopenic elderly with or without chronic disease and three of four studies using EAA showed significant improvement in muscle strength, physical characteristics or physical function in the supplemented participants. In contrast, five trials using BCAA in elderly subjects with or without liver disease found no effect. In conclusion there is some evidence that EAA supplementation improves physical function in the elderly, and this may provide an additional treatment method to reduce the functional decline associated with age.

THE FOCUS STUDY: FALLS IN OLDER PEOPLE WITH CATARACT – A LONGITUDINAL EVALUATION OF IMPACT AND RISK

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There is strong evidence of an increased falls risk associated with cataract, a primary cause of vision impairment in older Australians. Although cataract surgery is highly successful at restoring sight, un-operated cataract remains prevalent and lengthy waiting times for cataract surgery are common. The FOCUS study is a prospective, 24-month cohort study which aims to measure temporal changes in the rate of falls before first eye, between first and second eye, and after second eye cataract surgery. It will also assess important secondary outcomes of cataract surgery including quality of life, participation, mobility, driving confidence, physical activity and depression, and their predictors. Commencing August 2013, 717 participants aged ≥70 years with bilateral cataract will be recruited on recommendation for surgery at six public hospitals in Sydney, Melbourne, Perth and Adelaide. Participants will undergo assessment of visual function, quality of life, mobility (including falls), physical activity, driving and depression at Baseline, 3 months after first eye surgery and 3 months after second eye surgery or at 24 months, whichever is sooner. Falls will be self-reported using monthly calendars, with phone-based assessment of fall circumstances, injuries sustained and treatment received. Participants' health service utilisation during the study period will be examined via linkage with administrative data sets. McNemar's test will evaluate differences in the rate of falls at each time point. Generalised estimating equations linear regression analysis will be undertaken to determine visual and non-visual factors associated with falls risk and other secondary surgery outcomes. The findings of the FOCUS study may inform the optimal management of older people with cataract and control negative health impacts of cataract-related injury and falls. This paper reports study design and early baseline results.

WORD RETRAINING PROGRAMS CAN PROVIDE MEANINGFUL BENEFITS TO PATIENTS WITH SEMANTIC DEMENTIA

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Background and aims: Semantic Dementia (SD) is an incurable neurodegenerative disease characterized by significant, progressive impairments to naming and comprehension. Recent studies have shown, however, that SD patients can re-learn words via word retraining programs, given the relative preservation of day-to-day memory. How patients at different stages of the disease can maintain these words, and whether relearned words can be applied beyond the training task is not well understood and requires investigation. **Method:** Two patients (SD-mild and SD-severe) completed an intensive online word-training program involving daily repetitive practice of word-picture pairs of household items over a two-month period. A multiple-baseline-across behaviours (word lists) experimental design was employed, with picture naming ability assessed before, during and at monthly intervals following training. Generalisation of learning to other contexts was evaluated using alternative measures of expressive and receptive language skills: video scene description, word-picture-matching, and verbal comprehension tasks (completing actions around the house), pre- and post-intervention. **Results:** Both patients showed substantial improvements in picture naming ($p < .001$), achieving 95% and 88% accuracy respectively. Within 2 months post-training, SD-severe required further weekly learning sessions to maintain words. In contrast, SD-mild showed some reduction over time but could independently maintain performance above 80% accuracy. Improvements extended across other tasks for SD-mild (video description: $p = .001$, accuracy 85%; verbal comprehension: $p = .031$, accuracy 89%), and to a lesser extent for SD-severe (video description: $p = .03$, accuracy 57%; word-picture-matching: $p = .039$, accuracy 75%). **Conclusions:** Word training can deliver practical benefits, particularly in mild SD patients, with a significant proportion of words successfully applied to other tasks and recalled over time. With increased disease severity, ongoing practice may be required to maintain words, with the ability to apply knowledge to other contexts lessened. Results of this study provide important insights for therapeutic management of this disease.

DETERIORATION OF BALANCE IN AGEING MICE

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Background: Falls are a leading cause of injury among people over 65. Despite this, very little is known about the direct vestibular (balance) system contribution to age-related loss of balance. Here we use a mouse model of ageing to investigate the direct vestibular decline in balance associated with age. **Method:** All methods are approved by the University of Sydney Animal Ethics Committee. Mice (ages 1, 3, 9 and 13 months) were tested on two tests. 1. *Grip strength* – An automatic grip strength meter was used to measure forelimb grip strength of the mice. For this test, mice gripped on to metal wire and were pulled horizontally away from the wire until their grip was released. The amount of force exerted by mice onto the wire was recorded and normalised for weight. 2. *Balance Beam* – Mice were trained to walk along a balance beam and measurements of time to traverse (TTT) and time to start (TTS) were recorded for each mouse. The balance of mice was then isolated and challenged with a custom-built rotator that spun the mice for 20 seconds at 3 Hz (revolutions per second) and retested on the balance beam. **Results:** 1. *Grip strength* – 1- and 3- month-old mice were stronger than 9-month-old mice ($p < 0.01$). 2. *Balance Beam* – 1-month-old mice were able to traverse the balance beam faster than 9- and 13- month old mice ($p < 0.05$ and $p < 0.01$). For their time to start (TTS) the test, there was little difference between age groups. However after their balance was challenged, older mice took significantly longer to start the test ($p < 0.05$). **Conclusion:** Young mice recover more rapidly from the vestibular challenge than older mice. The decrease in balance performance of older mice following vestibular challenge shows a direct contribution of the vestibular apparatus to this functional decline.

ANTIHYPERTENSIVE MEDICATION UTILIZATION AND ADVERSE DRUG REACTIONS IN THE ELDERLY: STUDY DESIGN AND BASELINE CHARACTERISTICS

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Abstract

Adverse Drug Reactions (ADRs) may result in significant burden to both individual patients and health systems. A number of risk factors have been identified for ADRs, and the elderly have long been recognised as a high-risk group for medication misadventure, including ADRs. Previous studies have explored the role of high-risk medications such as digoxin and warfarin in ADRs however little work has been done on the contribution of antihypertensive medications to ADRs in the elderly. Hypertension is one of the most common cardiovascular conditions and antihypertensive medications are considered among the most commonly prescribed medications in the elderly. A cross sectional observational study of patients aged 65 years and over, admitted to a major metropolitan teaching hospital during 2010 was conducted to explore the role of antihypertensive medication in adverse drug reactions. This paper presents the study design and baseline characteristics of the study population. The study population comprised 503 patients. The mean age was 80.3 years and 59% of the study population were female. Over two thirds of patients (69.1%) had a documented diagnosis of hypertension in their medical record and 67.3% were using antihypertensive medications on admission to hospital.

Rationale

Any individual using a medication is at risk of experiencing an adverse drug reaction (ADR). Adverse drug reactions are defined by the World Health Organization (WHO) as any noxious and unintended response to drugs occurring at doses normally used for the prophylaxis, diagnosis or therapy of disease, or for modification of physiological function (WHO, 1972). It has been estimated that 15% of primary care visits (Pretorius, Gataric, Swedlund, & Miller, 2013) and 5-7% of hospital admissions are a consequence of an ADR with a further 10-20% of all hospitalized patients experiencing an ADR during their admission (Kongkaew, Noyce, & Ashcroft, 2008).

ADRs represent a significant burden, not only to the health of the individual patient but also to the health system. An estimated 140,000 fatalities occur annually in the United States of America (US) as a consequence of ADRs (Ventura et al, 2010) with significant economic implications. The cost of ADRs in the US was estimated to be more than \$30 billion, or 5% of total hospital running costs per annum (Tangiisuran, Gozzoli, Davies, & Rajkumar, 2010).

Multiple factors have been identified as being associated with an increased risk of ADRs. The elderly have been identified as a high-risk group with respect to ADRs. A number of factors such as changes in pharmacokinetics and pharmacodynamics, and increased morbidity and number of medications have been

shown to play a role in this increased ADR risk. Individual conditions and specific medications also have been identified as increasing the risk of an ADR. However, the association between the use of antihypertensive medications and ADRs has rarely been studied.

Hypertension is one of the most common cardiovascular conditions and antihypertensive medications are considered among the most commonly prescribed medications in the elderly (Caughey, Vitry, Gilbert, & Roughead, 2008). The elderly have a higher sensitivity to the adverse effects associated with many of the antihypertensive medications and thus it could be expected that the use of these agents could be associated with an increased risk of ADRs.

The aim of this paper is to present the design, methods and baseline characteristics of a study exploring the role of antihypertensive medications in ADRs in elderly patients admitted to hospital.

Study design and methods

Study design

A retrospective observational study was conducted.

Study population

A random sample of all patients aged 65 years or older admitted to a large metropolitan teaching hospital between January 1st 2010 and December 31st 2010 was included in the study. The inclusion criteria were admission duration of ≥ 48 hours and the use of at least one medication, either on admission or during hospitalization. A minimum admission duration of 48 hours ensured that the patient was admitted to a ward and not just treated in the emergency department. For patients with multiple admissions during the study period, only the first admission was included in the study.

Data collection

Data were extracted from medical records by a single pharmacist-researcher using a pre-determined case record form to ensure consistency. Data collected include demographic characteristics, admission history, blood pressure control prior to and during hospitalisation, and medication use. Frailty was assessed using the Rockwood frailty scale (Rockwood, Stadnyk, MacKnight, McDowell, Hébert, & Hogan 1999) and the Charlson Comorbidity Index was used to quantify comorbidities (Charlson, Pompei, Ales, & MacKenzie, 1987). Medications prescribed on admission, discharge, and at the time of any actual or potential ADRs were recorded.

Hypertension and Antihypertensive medications

Patients were considered to have a diagnosis of hypertension if they had it recorded as a documented diagnosis in their medical records (current admission or past medical history). Blood pressure targets were determined according to the current Australian guidelines (National Heart Foundation Australia, 2008). Patients with a diagnosis of hypertension were considered to have controlled blood pressure if their systolic and diastolic blood pressure met the treatment target appropriate for their clinical condition.

Medications were classified by the Anatomical Therapeutic Chemical (ATC) classification (WHO, 2012). The following drug classes were considered antihypertensive medications based on the current Australian Hypertension guidelines (National Heart Foundation Australia, 2008): Angiotensin converting enzyme inhibitors and angiotensin receptor blockers (ATC class C09), beta blockers (ATC C07 class excluding sotalolol), calcium channel blockers (C08), thiazide diuretics (C03A and C03E) and other agents (clonidine, hydralazine, methyldopa, moxonidine, prazosin) (C02).

These drugs are indicated for a number of cardiovascular and renal conditions; however for the purposes of this study, they were included as antihypertensive medications even if used in patients without a diagnosis of hypertension as we were interested in ADRs associated with the use of these medications for any indication.

Identification of adverse drug reactions

Adverse drug reactions were defined as per the WHO (1972). A trigger list based on published literature was used to identify any potential ADRs (Forster et al., 2011). The triggers were used to identify any signs or symptoms that may indicate that a patient has experienced an ADR. The Naranjo and Hallas Scales were used to classify the likelihood, causality, and preventability of each potential ADR identified (Hallas et al., 1990; Naranjo et al., 1981). Any potentially ambiguous ADRs identified via the trigger list were independently evaluated by a second pharmacist-researcher with respect to the Naranjo and Hallas classifications.

Sample size

Based on the literature, the estimated prevalence of ADRs in elderly hospital patients has been reported to range from 3.4% to 30%. Due to the wide variability in the reported prevalence of ADRs in the elderly, the lower range of 3.4% ($P = 0.034$) was used to calculate the sample size. An estimated sample size of 437 patients was calculated (Naing, Winn, & Rusli, 2006). However, to allow for incomplete data an additional 10% of records were added to the sample size, and therefore, a total of approximately 500 medical records were included in the study.

Data analysis

Data were entered into a custom built Microsoft Access database for manipulation and descriptive analysis. SPSS version 20 was used for all other statistical analysis.

Ethics approval

The study was approved by Northern Sydney Central Coast Health (NSCCH) Human Research Ethics Committee (HREC) (protocol number 1105-147 M).

Results

In total 503 patients were included in the study. The majority of participants were female and female participants were slightly older than male participants (81.4 versus 78.7 years). Most admissions were unplanned and non-surgical (Table 1). Of the surgical admissions orthopaedics was the most common admission specialty, while of the medical admissions the most common specialties were cardiology and general medicine. Cardiovascular medications were the most commonly prescribed medication group. Almost 70% of patients had a diagnosis of hypertension documented in their medication records and 67% of patients were taking an antihypertensive medication on admission.

Table 1: Selected characteristics of participants (n=503)

Patients characteristics	
Age	
Mean (years)	80.3
(SD, Range)	(8.2, 65.1-100.7)
Gender	
(% female)	58.8%
Admission characteristics	
(% patients)	
Admission type	
Planned admission	12.1%
Admission specialty	
(% patients)	
General medical	17.3
Geriatric	8.6
Cardiology	22.5
Neurology	8.9
Hematology/ Oncology	1.4
Other medical	4.4
Orthopedic	12.4
Other surgical	3.0
Unknown	7.0
Length of stay	
Mean (days)	10.2
(SD, Range)	(9.2, 2-89)
Medication utilization	
Number of medications on admission	
Mean	7.1
(SD, Range)	(3.9, 1-27)
Medications on admission by body system (ATC level 1)	(% patients)
Alimentary tract and metabolism (A)	70.9
Blood and blood forming organs (B)	37.3
Cardiovascular (C)	82.7
Dermatological (D)	5.0
Genitourinary system and sex hormones (G)	8.6
Systemic hormones (excluding sex hormones and insulin) (H)	16.3
Anti-infectives for systemic use (J)	10.0
Antineoplastic and immunomodulating agents (L)	6.4
Musculoskeletal (M)	27.1
Nervous system (N)	69.9
Antiparasitic (P)	0.6
Respiratory (R)	19.5
Sensory (S)	25.3
Hypertension related characteristics	
(% patients)	
Documented diagnosis of hypertension	69.1
Antihypertensive medication use on admission (C02, C03A, C03E, C07, C08, C09)	67.3

Implications for practice

From the data collected the role of antihypertensive medications in ADRs in elderly patients admitted to hospital, and ADRs risk factors associated with the use of antihypertensive medications will be explored. These findings may aid clinicians in improving medication safety among the elderly to ensure optimal care for this vulnerable population.

Summary

This paper presents the design and rationale for a cross-sectional observational study in the elderly population presenting to a hospital setting. The study will explore the use of antihypertensive medications, inpatient management of hypertension and the role of antihypertensive medications in ADRs in elderly patients admitted to hospital.

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LONG TERM CARE INSURANCE: A SURVEY OF INSURER ATTITUDES

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Abstract

Financing long term care for the aged is a growing challenge in Australia as for other countries with an ageing population. One potential component of any financing system is private, voluntary insurance. This exists in the United States of America (USA) and France, among other countries, but is non-existent in Australia. The results of a recent survey of Australian financial services providers exploring possible reasons for this are presented in this paper. Questions of insurability, supply- and demand- barriers and outlook for the future are addressed and analysed both quantitatively and qualitatively. The survey consisted of an online component supplemented by personal interviews. The views of financial services providers are vital to establishing what changes might be required in order to make private, voluntary long term care insurance viable in Australia, or indeed to determine if this is not a likely outcome under most reasonable scenarios. There is insight for policy makers regarding the views of providers on the role that government could play. Indeed a multi-stakeholder collaborative approach is seen as essential to overcoming the significant barriers currently perceived by providers.

Rationale

Financing long term care for the aged is a growing challenge in Australia (Australian Treasury, 2010; Ergas & Paolucci, 2011) as for other countries with an ageing population (Colombo, Llena-Nozal, Mercier, & Tjadens, 2011). One potential component of any financing system is private, voluntary insurance. This exists in the USA and France, among other countries, but is non-existent in Australia (Browne, 2011; Dale & Hanna, 2012; Elliott, Golds, Sissons, & Wilson, 2012).

The views of financial services providers are vital to establishing what changes might be required in order to make private, voluntary long term care insurance viable in Australia, or indeed to determine whether this is not a likely outcome under most reasonable scenarios. Thus it was decided to survey Australian financial services providers to understand their position.

Methods

The survey consisted of an online component supplemented by personal interviews.

Participants were recruited mainly from the Life Board Committee of the Financial Services Council and the Life Insurance and Wealth Management Practice Committee of the Actuaries Institute. Relevant persons known by the researcher to have an interest or experience in the topic were also approached. This constituted an initial group of approximately 40 persons, with the desired representation of life insurers, life reinsurers, financial services providers and financial services consultants.

Human research ethics approval was obtained in September 2012 from the Humanities and Social Sciences Delegated Ethics Research Committee of the Australian National University. The research was classified as relatively low risk.

The online survey was designed and pilot tested, then launched in October 2012. The survey closed on 30 November 2012. Responses from 26 participants were received. Six participants agreed to a personal follow up interview. This response rate was in line with that anticipated by the research plan.

Questions of insurability, supply- and demand- barriers and outlook for the future were posed and responses analysed both quantitatively and qualitatively. The supply- and demand- barriers in particular were sourced from the analysis of Berry (Berry, 2011). This paper reports only the key results from the online component of the research.

Results

Low awareness of aged care arrangements, including financing and recent reform

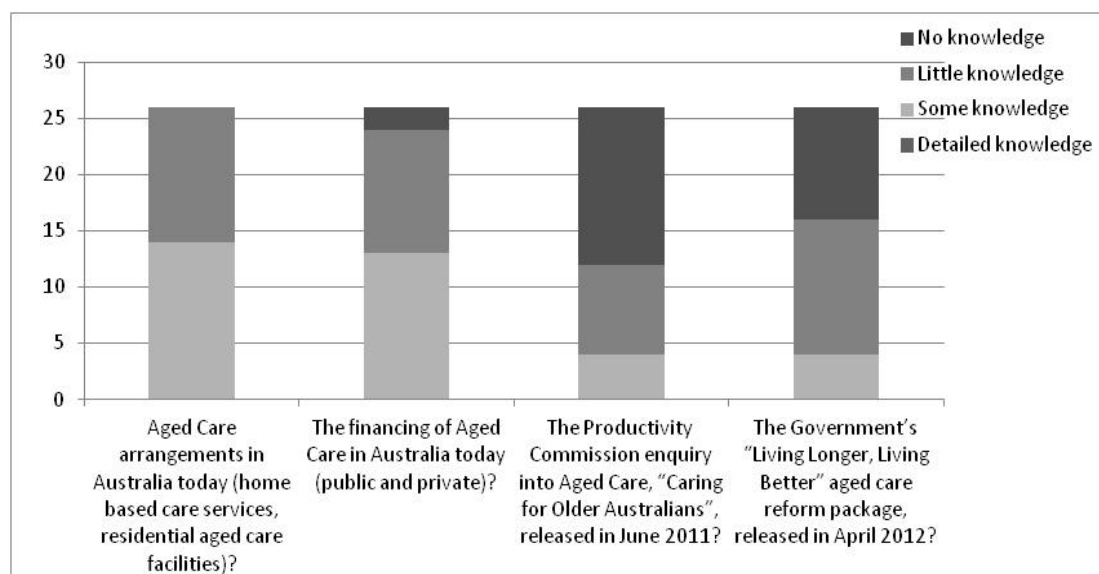


Figure 1 - Self-rated knowledge of aged care and aged care reform in Australia

Participants were asked to rate their knowledge of aged care in Australia. Results are shown in Figure 1. Participants were targeted, yet they showed a level of knowledge no higher than that of the interested general public (National Seniors Australia, 2011), with none claiming detailed knowledge and their level of knowledge decreasing as the area became more specific. To some extent this is unsurprising: until there is an insurance product there will be little awareness, but without awareness, will there ever be an insurance product?

In principle support due to insurability and growing need

It was important to establish the view of providers regarding the insurability of the risk of needing long term care, as some (Barr, 2010) have argued the risk is not insurable in a private, voluntary market setting. As only 4 of the 26 respondents stated that they considered the risk to be uninsurable we can conclude that respondents do not share this view.

Seventy-three percent of respondents answered positively to the question: “Do you think a private, voluntary insurance product which paid a regular benefit when the insured reached a defined level of Aged Care need could be a worthwhile product in the Australian context?” The reasons provided showed clear recognition of a growing financial need as well as the influence of the ageing population.

Demand-side barriers even stronger than supply-side

Respondents also raised clear objections to the development of a market in Australia on the grounds of limited consumer demand, due in part to a perception that the State will provide, leading to their view that there is a need for government intervention in order for the situation to change.

When explicitly exploring supply-side barriers (ranked using weighted average of the responses), respondents identified limited market profitability due to current market size, regulatory constraints or uncertainty and uncertainty over future costs of long term care provision as most significant from the list provided. Spontaneous comments added perceived expense and the lack of a long term outlook from many stakeholders to the list of barriers to supply.

On the demand-side respondents were being asked to rank their views on consumer behaviour and perceptions. Complexity and high cost of insurance products was ranked most highly: I believe this is providers’ view of consumer perceptions, not that providers themselves believe their products are unnecessarily complex or expensive. Following this ignorance of the risk and a belief that long term care is funded entirely by the state were the next most highly ranked. The lowest ranked demand-side barriers were the bequest motive and a distrust of financial services.

The long term nature of the risk and the general level of underinsurance in the Australian population were raised spontaneously by respondents as barriers.

Outlook and the role for government

The last section of the online survey addressed respondents’ views on the likely influence of recent policy changes and longer term demographic trends on the prospects for long term care insurance in Australia.

Firstly they were asked to consider whether, in their opinion, the introduction of the Living Longer, Living Better package (LLLB), which introduces an increased user pays component to care costs for consumer, would change the likelihood that insurance products develop.

Nine participants were undecided regarding the likelihood that insurance products would develop as a result of the introduction of the LLLB package. However, of those who had a firm view, those who felt that the recent policy changes would be a favourable influence outnumbered those who did not by three to one (46.2% versus 15.4%).

At this point the correspondence between awareness of the LLLB proposals and views on their likely influence was explored. The striking result was that all those who felt the package would not make development of insurance more likely all had “little” or “some” knowledge of the proposals. Those who had “no” knowledge were evenly split between “Don’t Know” and a positive outlook on the influence of the package. Perhaps awareness of the proposed cap on annual and lifetime care fees, which should have the effect of reducing the potential financial exposure of individuals to the risk of extended aged care, is the cause of this pattern, outweighing the influence of proposed increases in the user-pays elements.

The concluding remarks provided by two respondents summarise the situation well, while making a positive suggestion for the future: *“While the concept is a good one, commercial reality is such that it would take a lot for LTC to gain any traction in Australia”* and *“You could investigate whether long term care insurance should be made a compulsory part of the superannuation system.”*

These comments highlight the receptiveness of respondents to the concept of an insurance solution: this is not the barrier that some commentators have stated it to be. However the challenges are significant and hence significant effort from all concerned parties is believed to be required in order to overcome these challenges.

Implications

There is insight for policy makers in the views of providers on the role that government could play. Indeed a multi-stakeholder collaborative approach is seen as essential to overcoming the significant barriers currently perceived by providers.

Despite a fairly low level of awareness of aged care arrangements and the aged care reform currently underway, the research indicates an underlying level of in principle support from the financial services industry for the development of long term care insurance in Australia, should the conditions be favourable. Respondents believe the risk is insurable and that there is a growing financial need. However, the lack of a market at present can be explained by the many hurdles that currently exist. There are supply side barriers, but the demand side barriers are even more significant. There is a high degree of scepticism regarding consumer demand. Respondents point out that Australians in general are already underinsured. Aged care risk is effectively last on a long list of life-course risks that could be insured or prepared for, and individuals are under many other financial pressures to provide for themselves and their families, for example with respect to housing, education and retirement income, let alone insurance needs.

Two paradoxes emerged from respondents’ comments. One is a function of age, the other of wealth: those who are older and closer to the point of needing care, may find insurance unaffordable at that stage. Further those who can potentially afford insurance are also more likely to be able to pay for care directly. Neither of these bode well for the spontaneous development of a private, voluntary insurance market for long term care needs.

The role for government covers the dimensions of the need for clarity about the long term intentions of government with respect to its role in financing aged care and the use of incentive structures and/or compulsion in the achievement of policy goals.

This research suggests that insurers are unlikely to attempt to develop an insurance product until they are confident that the necessary groundwork has been laid by government.

Summary

This survey contributes insight from the point of view of Australian financial services providers regarding the absence of a private, voluntary form of long term care insurance in this country. It adds to the understanding of the reasons why such a product is not currently offered and in particular highlights what might need to change in order for a market to become viable. Changes will be required from both the supply- and the demand-side with a role for government as an enabler foreshadowed and indeed welcomed by industry.

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THE CHANGING ARENA OF AGEING: USING CRITICAL DISCOURSE METHODS TO ANALYSE CURRENT POLICY DIRECTIONS

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Abstract

Population ageing has contributed to a rapidly changing policy environment, requiring researchers and practitioners to become more actively and critically involved in examining policy. While policy analysis can take many forms, one important way is through use of critical discourse analysis, which can be used to study the impact of language within its sociopolitical context. This paper explores the use of critical discourse analysis in ageing policy, utilising a study of spousal caregiving as an exemplar. Here, we present some of the advantages and challenges associated with using this approach in order to better understand the impact of policy on the lives of older people.

Rationale

The significant demographic shift of population ageing has prompted extensive policy reform at both national government and international economic levels (Bessant, Emslie, & Watts, 2011). In Australia, a major Productivity Commission Inquiry into aged care was conducted in 2011. This resulted in the Living Longer Living Better reform package being released in 2012, which presents significant change in the provision and delivery of aged care services for older Australians. In a rapidly changing policy environment, it becomes increasingly important for researchers and practitioners to ensure a critical understanding of the policies affecting older Australians and their families.

Theoretical and methodological approaches to policy analysis have emerged from a range of disciplines, including economics, law, health, welfare, sociology and psychology (Carlson, 2011). This has resulted in diverse and constantly evolving approaches to policy analysis, many of which can be applied to the analysis of social policy. While discourse analysis has long been utilised by linguistic experts, there is an emerging field of researchers recognising the benefits of critical discourse analysis in understanding social phenomena (Marston, 2004). It is increasingly being utilised as a method allowing researchers to critically review policy, speech and other texts within the context of changing social and political environments.

This paper explores the use of critical discourse analysis in relation to ageing policy, with particular attention to critiquing policy reforms as they relate to spousal caregivers (Cash, Hodgkin, & Warburton, 2013). In particular, we will consider some of the advantages and challenges of using this approach in social policy research, and show how this can provide a critical understanding of language and how policy frames key concepts of power, equality and choice for older Australians.

What is Critical Discourse Analysis?

Discourse analysis has long been used within linguistic studies to explore the function and structure of language (McCloskey, 2008), though this often had limited application in understanding social issues. Critical discourse analysis (CDA) moves beyond the linguistic level to study the impact of language on social phenomena (van Dijk, 1993; Wodak & Meyer, 2009). This increases the accessibility of discourse analysis to social researchers, providing a method to analyse language use within its social and political context (Fairclough, 2010; Marston, 2004). As such, it is well suited to the study of policy, as it can be used to deconstruct policy texts to reveal assumptions and subject positions (Marston, 2004).

There are several approaches to CDA that can be distinguished from one another by the linguistic theory applied and the type of data analysed. Despite some variations in focus, they all fundamentally evolve around common central principles of CDA in seeking to understand social problems and power relations by mediating links between text and society (Wodak & Meyer, 2009). CDA can essentially be used to expose, understand and address social issues and inequality that may be, sometimes covertly, communicated in language and text (van Dijk, 1993). It can assist in understanding the ways power is exercised in social settings by enabling a scrutiny of how texts are utilised to promote a specific ideological agenda (Fairclough, 2010).

In addition to macro level sociopolitical focus, CDA considers discourse at multiple levels, including how the discourse is practiced and also the advantages of linguistic focused textual analysis (Fairclough, 2003). This micro layer can be used to consider *assumptions*, *presuppositions*, *absence* and *language* used within the policy. It also takes into account hegemony, through the analysis of discursive strategies which can maintain social inequality and power imbalance (van Dijk, 1993). This critical method allows social researchers to consider principles of equality and social justice in policy and practice and opens up alternate possibilities for action and policy intervention (Marston, 2002).

CDA in policy analysis

Critical discourse analysis was used in a recent study of spousal caregiving which analysed three key contemporary documents (Cash et al., 2013). As an initial venture in using CDA, two challenges stood out. Firstly, approaching CDA for the first time requires navigation of a vast amount of available literature. Despite extensive texts discussing principles and examples of CDA, the theoretical concepts of discourse analysis are complex, making it difficult to establish a common understanding or systematic approach (McCloskey, 2008), with few succinct overviews of the different approaches or clear guides to assist in getting started. Engaging with complex linguistic jargon as a novice can be challenging, making it difficult to establish the most appropriate style to employ.

The approaches of Fairclough and van Dijk were ultimately drawn on in this study of spousal caregiving, as they offered an explicit focus on sociopolitical context and hence the ageing reform environment. Fairclough in particular provides a systematic framework to consider the connection between text and social practice, offering a three dimensional approach to analysis. In addition to micro level textual analysis to examine content, structure and meaning, this framework also incorporates broader sociocultural and practice dimensions which seek to explain the relationship between discursive practices (the production and interpretation of the text) and social context (Fairclough, 2003, 2010; Marston, 2004; McCloskey, 2008).

The second challenge related to choosing key documents and sections of documents to include in analysis, and having a strong rationale for this choice. As a critical method to explore language, it is not possible to analyse large volumes of policy documents, with size of sample being less relevant than the selection of adequate data to provide representation of the discourses and discursive practices at play (McCloskey, 2008). The decision of what to include and exclude from analysis can be assisted by creating a clear set of criteria; for example, only including sections which discuss key terms pertaining to the research question. Identifying sections for exclusion, such as those focusing on residential care in a project of community based care, can also assist in narrowing the focus to relevant data for analysis.

Having made those decisions, it is possible to draw interesting findings and develop an increased awareness of the impact broader paradigms have on policy. This is particularly relevant to ageing policy, which in recent years has arguably been determined by neoliberal principles, fiscal uncertainty and concern about the health costs of an ageing population. Thus, in relation to caregiving, overt policy statements about the reliance on informal care to reduce burden on formal care services draws attention to the economic rationale and justification as being common sense, rather than considering the potential for social and financial exploitation of carers. This displays the general acceptance of dominance by broader

health systems, which are dependent on the cooperation and contribution of informal caregivers. It also demonstrates how power and social inequality can be maintained through discursive strategies.

An advantage to CDA is its ability to consider modality, such as the use of emotive tone and the impact of this on the reader. Examples of emotion laden statements being placed before negative comments to offset or justify the undesirable reality were observed during analysis. This is evident in statements such as “most carers provide care out of love and believing they can provide a better quality of life for their family member or friend than anyone else. In many cases carers provide care because the demand for formal care services far exceeds supply and there is no alternative” (Commonwealth of Australia, 2011, p. 17). The connotation that love should be the primary motivation for providing care creates a powerful emotive discourse for carers about socially acceptable responses and actions. In order for older persons to remain at home there is usually the need for either formal or informal support, so statements which establish love as the primary reason for caregiving fail to acknowledge the complexity and underlying expectations of informal caregivers and the lack of available formal supports as an alternative.

CDA also enables analysis to focus on presuppositions and unquestioned assumptions made in policy documents, such as the availability of informal caregivers. The assumption within policy that all caregivers wish to take on and carry out informal caregiving roles conflicts with recent Australian data to the contrary (Australian Bureau of Statistics, 2008). It is interesting within analysis to consider not only the language used in the text, but also what is absent or not discussed within policy documents. The choice to care or not is absent from all of the documents included in analysis, an omission that might escape notice and therefore not be scrutinised. CDA also considers the lexical choice of words, which can demonstrate the underlying position of policies, such as portraying caregiving as a duty rather than something which can be chosen. The deliberate selection of the word responsibility and the absence of the word choice provided an interesting point for consideration.

CDA is an interpretive method, which can initially be a complex and technical process to those not from a linguistic background. Being a highly interpretive process, CDA acknowledges that multiple interpretations can arise from the data (Fairclough, 2003). Findings need to be rigorously supported by the data, with the reliability and validity of findings relying on the strength and logic of the researcher’s argument. These analysis techniques, however, allow consideration of inequity and the potential outcomes of this. The assumptions within policy can be so strongly held, such as the assumption that family caregivers have and will continue to provide care, that entire reviews and reforms are based on this premise. Active involvement in critical policy analysis allows us to consider the impact of reform across systems.

Implications

In order to understand social problems, it is both important and necessary to consider the broader social and political context in which they exist. Social welfare commentators such as Esping-Andersen (2009) have highlighted that any analysis of population ageing should avoid exclusive focus on immediate issues and instead look beyond these concerns to consider broader impacts on social and economic structures. Critical discourse analysis provides an innovative approach to exploring the impact of language on policy, practice and individuals, as well as the opportunity to contribute to discussion on these broader considerations and their impact on the formulation of social policy.

Policies are affected by ideological influences such as neoliberalism, which essentially attempts to transfer economic principles and values to the social world. While this might seem logical to governments attempting to escape predicted financial strains of population ageing, it is crucial that we do not lose sight of the human factor, and of the impact these policy directions have at the individual, family and community level. The challenge is to maintain an awareness of how these discourses and ideologies are filtered into social policy and subsequently practice. Given the changing context of community values, attitudes and structures, it is important that we consider grounding policy for an ageing Australia in social reality if it is to work well (Bartlett, 2003).

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THE SIGNIFICANCE OF SOCIAL NETWORKS/INTERACTIONS AND LOCALITY FOR THE WELLBEING OF OLDER PERSONS

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Abstract

The older population in Australia (65+) is expected to double in coming decades, creating many multi-faceted implications. Social isolation and loneliness are frequently associated with ageing and can be dependent on a multitude of factors including gender, ethnicity, housing and neighbourhood design, family networks, situations of care, and location. This paper summarises research currently being undertaken at the University of South Australia within the school of Natural and Built Environments. The central research objective is identifying the various issues for socialisation and wellbeing for older Australians in different locations. An individual ageing in a rapidly growing sea-change community, faces both similar and different challenges to someone in a smaller remote rural town or a very large city. The services available in these areas vary as do the local community networks, and individual attitudes and life courses. Public design also influences accessibility and wellbeing for older people and consideration of issues such as density and access arise in the habitus milieu of Australia. This research seeks to investigate these circumstances through case study analysis in selected rural and metropolitan areas, involving semi-structured interviews with older individuals and stakeholders involved in decision-making around the care of those individuals. Whilst in some localities, service gaps for older persons are apparent; other services are duplicated due to lack of organisational collaboration and communication. Thus this research is significant in its aim to propose direction for future service provision that appropriately considers the individual and collective social needs of the ageing population.

Introduction: ageing globally, in Australia and in South Australia

Australia's population is ageing at an unprecedented rate, parallel to global population trends. The ageing population is largely ascribed to increased longevity and, in Western countries, to the post-World War Two baby boom. Since 2011 these population cohorts have begun to enter the over 65 age group (Anderson & Hussey, 2000; Rowland, 2003). In 2000 the median global age was 26.6 years and this has been predicted to reach 37.3 in 2050 and 45.6 by the year 2100 (Lutz, Sanderson, & Scherbov, 2008). This trend will continue as long as mortality and fertility rates remain in decline.

Ageing will have extreme impacts on the work-force; in Japan for example, by 2050 according to predictions, 1.4 working aged persons will exist for every older person. Compared to the global median, the Australian median age of 37.1 years is high; this has increased by 4.7 years since 1991 (ABS, 2011). Further to that, the population cohort over the age of 85 years has almost doubled in that time. This shift will generate enormous pressure for age and health related services and exacerbate demand on financial support through pensions and welfare schemes.

Older cohorts are generally over represented in rural areas in most states and territories in Australia (Davis & Bartlett, 2008; EPSA, 2011). South Australia has one of the oldest populations in Australia (ABS, 2011), it has been chosen as an appropriate setting for investigation of in-depth case studies in a selection of settings, from the inner urban to remote. The state offers a range of locality settings to aptly represent these varied living scenarios and offer insights into the locally specific issues faced by older people in Australia. The cases investigated through this research range from a regional 'sea change' town, to urban local government areas characterised by low and high socio-demographic ranking. There is a lack of Australian literature offering comparisons between rural and metropolitan settings from a social planning and ageing perspective. Using a phenomenological methodological approach, this research aims to reveal detailed insights into the opportunities and limitations for older people in varied circumstances. Thus this paper highlights the relevance of research that seeks to avoid generalisation but tell anecdotal stories

about ageing, and the impact locality has on social outcomes for older people. The research seeks to highlight the differences and similarities and relay both comparisons and summations on a case by case basis, with an ultimate aim of offering recommendations that are locality specific. This will be achieved through the investigation of the impacts of physical location on community outcomes and relaying of individual perceptions around loneliness and community opportunities. The influence of varied demographic characteristics will be built into this investigation, along with the role of carers and family members, and local service provision in the experiences of loneliness and isolation for older people.

Social isolation, loneliness and wellbeing

Both social isolation and loneliness are prominent issues for ageing. Whilst social isolation is defined by low levels of contact with others, loneliness is the perceived negative emotions resulting from that isolation (Chappell & Badger, 1989; Grenade & Boldy, 2008; Havens, Hall, Sylvestre, & Jivan, 2004; Van Baarsen, Sniijders, Smit, & Van Duijn, 2001). Wellbeing, quality of life and improved physical and mental health are negatively impacted by social isolation and loneliness (Patulny, 2009). The experience of these however, can be significant at different times throughout the life course and can be aggravated by many variables including; gender, being widowed, childlessness, living situations having other health related problems or experiencing grief (Grenade & Boldy, 2008; Shahtahmasebi & Scott, 1996). Measuring, predicting and preventing loneliness and/or social isolation is difficult, however understanding more about what can be done to avoid their onset can be captured by investigating the lived experience of older people through qualitative research methods (Denzin & Lincoln, 2007; Matthews & Ross, 2010). Understanding what helps older people mitigate loneliness and isolation in various settings can assist greatly in promoting wellbeing (Koopman-Boyden & Waldegrave, 2009). Location and the ability to integrate socially in local communities as well as with long distance contacts are two integral elements of this interaction. It should also be noted that the Baby Boomers have different expectations and values to previous generations, bringing with them a challenging set of implications for service delivery (Bartlett, 2003).

Older people in the metropolitan and rural milieu

Many people in older age socialise and seek support through local community groups, clubs and associations (Findlay, 2003; Grenade & Boldy, 2008). Some literature suggests that Australian rural communities typically score very high on counts of bonding social capital, which encompasses trust affiliations between community members, but low on counts of bridging social capital, which encompasses the trust between community members and government groups and also new and unfamiliar groups and individuals (Davis & Bartlett, 2008; Onyx & Bullen, 2000; Ziersch, Baum, Darmawan, Kavanagh, & Bentley, 2009). Thus rural communities tend to foster camaraderie, particularly for longstanding locals. Many rural populations are ageing more rapidly than their metropolitan counterparts due to youth out-migration (Argent & Walmsley, 2008; Davis & Bartlett, 2008; EPSA, 2011). This results in strained service provision and diminishing local workforce participants in many smaller and remote towns. For older people in the community this means there is a smaller workforce available to facilitate local aged and health care services, or progress physical community infrastructure development like transport and footpaths (Davis & Bartlett, 2008; Humphreys, Wakerman, & Wells, 2006).

HACC (Home and Community Care) is a national program for providing in-home care in rural and metropolitan areas that has been highly regarded for its promotion of service equity and enabling older people to 'age in place' (Keleher, 2003). There is some acknowledgement that the national strategy for ageing in Australia has failed to focus on flexible policy with scope to address the unique needs of older people ageing in remote and isolated situations (Conley, Venz, & Watkins, 2009). The current service approach towards 'ageing in place' has gained momentum for some decades now and is founded on the notion that familiarity with both home and neighbourhood and inherent connections enable autonomy; most older people prefer to remain independent within their home community for as long as possible (Jeong & Stein, 2003; Lehning, Scharlach, & Dal Santo, 2010). Jeong and Stein (2003) also consider the prospect that ageing in place can deepen isolation, particularly as individuals become less mobile and in some instances are reluctant to request help. The issues faced by older persons in rural communities are

multifaceted and depend on distance, mobility, family and kinship ties, and local services just to name a few (Bartlett, 2003).

Urban localities provide opportunities and limitations for older people that have both similarities and differences to rural living. Some suggest that urban localities can exacerbate loneliness (Amin, 2006; Kweon, Sullivan, & Wiley, 1998; Lupi & Musterd, 2006; Putnam, 1995). Due to denser population distributions, urban environments can provide greater access to services and greater frequency and options around community groups, organisations and other social opportunities. However, as discussed by Kweon et al. (1998), noise, public amenity access and dilapidated or high rise built environments in urban or inner city neighbourhoods can instigate social withdrawal for some older people.

It cannot be assumed that every older person wants to be socially engaged, but assisting in the facilitation of social engagement can encourage overall improved wellbeing. 'Age friendly' design elements impact the propensity for older people to engage in their local community, particularly with the spaces and services outside of the home (WHO, 2007).

Impact of public design on lifestyle and engagement

For the very frail aged in particular, public design and service quality contribute vastly to social integration within local communities. The World Health Organisation (WHO; 2007) developed a global guide to 'age friendliness' framed around the promotion of active ageing which acknowledges that health, participation, lifelong learning and security need to be fostered to facilitate active ageing and engage older people in community life. WHO reviewed 33 cities worldwide and consulted with focus groups about eight priority elements of city living for older people. Those elements incorporated 'outdoor spaces and buildings, transport, housing, social participation, civic participation and employment, communication and information, and community support and health services' (WHO, 2007). The social participation findings are particularly relevant to the scope of this research. These highlighted the significance of social participation for older people with family, friends and community groups; for personal wellbeing and confidence. They also outlined crucial characteristics that can limit such social engagement; including transport access, social and public facility access and access to information about community activities.

Concerns highlighted in the discussions included personal safety (particularly at night), access to public/community buildings for the mobility challenged, confidence in the location and availability of amenities such as toilets, adequate seating, healthy air quality, and affordability of certain social events and activities (WHO, 2007). An emergent theme was that social interaction is easiest when it is frequent and close to home. Intergenerational, intercultural and intercommunity integration are also recognised as important for older persons to avoid homogenisation of social interactions (WHO, 2007).

Summary

This paper discusses some issues underpinning current PhD research at the University of South Australia exploring the impact of social interaction, community integration and location on the wellbeing of older people in both rural and metropolitan settings. Many factors influence well-being but social isolation and loneliness are known to be detrimental and certain older individuals are at greater risk of experiencing these than others. Proximity to and availability of services and social groups can be core in mitigating loneliness and isolation. Furthermore, public design has a role to play. 'Age friendliness' has been thoroughly investigated by WHO, highlighting concerns around security, amenity access, and building access that can deter engagement in community activities for older people. Greater understanding of the wide-ranging concerns for ageing and socialising is important to avoid generalisation. Empirically, it is suggested that rural communities have stronger social fabric, but there are negative aspects to rural living in older age, such as lack of social opportunities and services. Cities and suburban areas offer other implications for ageing; some older people can feel overwhelmed and alienated in bustling metropolitan settings but they have greater access to services and support. Nonetheless, there are many issues influencing the social outcomes of older persons. Gaining a greater understanding of these issues through

in-depth discussions is integral as a means of adequately shaping local policy decisions for a future population that is remarkably older than that of the present.

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DEVELOPING A MEDICATION MANAGEMENT RESOURCE FOR ETHNIC MINORITY INFORMAL CAREGIVERS OF PEOPLE LIVING WITH DEMENTIA

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Abstract

This paper outlines the motivation for and the development of a medication management information resource for Australian ethnic minority informal caregivers of people living with dementia. The aim of this project is to enable ethnic minority informal caregivers to safely and effectively manage medications for their care recipient living with dementia in the community setting.

A large number of Australian informal caregivers of people living with dementia are from ethnic minority backgrounds. Medication management is a common, but often times complex, daily task undertaken by many informal caregivers. Since many of the caregiver's medication management responsibilities increase as the cognitive capabilities of their care recipients' decline with advancing dementia and no comprehensive dementia specific medication management information resource currently exists we felt it important to develop a useful, accessible information resource for informal caregivers in this role.

The development of this medication management information resource occurred in two stages; the first stage involved a qualitative study to gain insight into the perspectives and the information needs of these ethnic minority informal caregivers as they manage medications for their care recipient. The results and main themes identified in this first stage were then used to inform the second stage of the study which involved the development of the medication management information resource, to be available online in both English and Italian. These are nearing completion and will be evaluated before becoming generally available online. It is anticipated that this information resource will provide family caregivers of people with dementia information and support in this role.

Rationale

In Australia, the number of informal caregivers of people living with dementia (PLWD) and residing in the community setting is growing (AIHW, 2012). It has been estimated that the 298,000 Australians living with dementia in 2011 will increase to 400,000 by 2020 (AIHW, 2012), which suggests that the number of informal caregivers of PLWD will also grow. Given Australia's multicultural heritage, a large number of informal caregivers and community dwelling PLWD are from ethnic minority backgrounds. A 2009 national survey of disability, ageing and carers recorded that 24% of PLWD were born in countries outside Australia. This diverse group of PLWD were more likely to be cared for at home, by their relatives, making up 33% of the community-dwelling PLWD (ABS, 2010; AIHW, 2012).

Medication management is a daily task carried out by the majority of informal caregivers of PLWD. A recent US based study estimated that 54% of informal caregivers manage medication during the earlier stages of their care recipient's dementia. This increases to 90% reporting medication management responsibilities as the care recipient's cognitive decline increases in the later stages of dementia (Thorpe, Thorpe, Kennelty, Gellad, & Schulz, 2012). This care management role is important as it helps to improve health outcomes for the care recipient (Arlt, Linder, Rosler, & von Renteln-Kruse, 2008). However it may lead to caregiver stress because it often requires considerable knowledge to undertake correctly and effectively (Carter, Moles, White, & Chen, 2013). For example, informal caregivers are often expected to undertake many of the following medication management roles without any formal training (Brodaty & Green, 2002; Smith, Francis, Gray, Denham, & Graffy, 2003; Travis, Bethea, & Winn, 2000):

- administering multiple medications according to appropriate schedules (sometimes against the care recipient's wishes) in a safe and effective manner;
- avoiding medication errors and possible drug interactions;
- providing feedback to health professionals regarding the medication's effectiveness and/or side effects;
- sometimes making judgements regarding when to withhold, increase, decrease or discontinue a medication;
- maintaining continuous supplies of medications and communicating with both the care recipient and health care providers about medications;
- checking prescriptions for accuracy and querying changes in medications;
- granting or refusing consent for newly prescribed medications on behalf of the care recipient who is no longer able to make these decisions.

Other important factors identified in the literature which contribute to the stress and complexity of this role include unhelpful health systems and practices which are difficult to negotiate (Francis, Smith, Gray, & Denham 2006; Smith et al., 2003) and a lack of information available for this role (Reinhard, Levine, & Samis, 2012).

In addition to these multiple medication management roles regularly undertaken by informal caregivers of PLWD, Duane, While, Beanland, and Koch (2011) describe further medication management roles which are assumed by ethnic minority informal caregivers. These include: accessing health care providers who speak the same language and/or providing culturally appropriate services; acting as interpreters and/or accessing interpreter services; and, where possible, accessing relevant translated medication information.

Given the complexity of the medication management role, the lack of information available to informal caregivers, and the likely additional difficulties facing some ethnic minority informal caregivers to undertake their roles safely and effectively, this exploratory research study was undertaken in two stages. The aim of the first qualitative stage was to gain insight into the perspectives and the information needs of Illawarra based ethnic minority informal caregivers as they manage medications for their care recipient living with dementia. The results and main themes identified in this first stage were then used to inform the second stage of the study which involved the development of the medication management information resource, to be generally available online in both English and Italian.

Stage 1: Qualitative phase

Methods

This first stage of the study was carried out over a four-month period from July to October 2012. Potential participants from a number of ethnic minority backgrounds, representative of the largest groups of older adults in the Illawarra from non-English speaking countries (Broadley, Mihajlovic, Paschalidis-Chilas, & Perry, 2009), were contacted and invited to take part in the study via local informal caregiver support groups, via word of mouth, or via contacts known to the research team. Qualitative methods, including three focus groups and seven individual one-on-one interviews, were used for data collection purposes. The focus group and interview questions included six open-ended questions, developed by the research team, that were informed by evidence in the literature and addressed the research aim. The questions covered informal caregiver medication management experiences, medication information sources currently used by informal caregivers, and the most preferred content and/or format for any future information resources to be produced. Verbal responses to the focus groups and one-on-one interviews were transcribed verbatim and thematically analysed by three independent qualitative researchers.

Results

Tables 1 and 2 summarise the demographic data of the 22 focus group participants and the seven one-on-one interview participants from six different ethnic minority groups who participated in the study. The majority of these participants (26 out of 29) were female informal caregivers.

Table 1

Demographic Data for Focus Group Participants

Nationality	Number of Caregivers	Gender	Carer Status
Italian	6	All female	Spouse caregivers
Macedonian	11	8 female, 3 male	Spouse caregivers
Portuguese	5	All female	4 spouse caregivers, 1 adult child caregiver

Table 2

Demographic Data for Semi-structured Individual Interview Participants

Nationality	Number of Caregivers	Gender	Carer Status
Italian	2	Female	Adult child caregivers
Greek	2	Female	1 adult child, 1 spouse caregiver
Dutch	1	Female	Spouse caregiver
Croatian	1	Female	Adult child caregiver
Macedonian	1	Female	Adult child caregiver

The key themes identified in this first stage of the study describe the informal caregiver's medication management role as a source of stress, especially as their care recipient's cognitive abilities started to decline.

"We were finding too much on the floor, not only from hers but also from his. And there were occasions when he was taking hers. He took her medication instead of his. Oh it was just horrendous, it was just horrendous" (Greek adult child caregiver)

They also suggested that their medication management role often led to conflict between themselves and their care recipient as they tried to limit the care recipient's autonomy over medication management and/or tried to get their care recipient to be more compliant with taking their medications.

"He just says 'oh don't worry about it (the medication) its Ok, it's under control' cause I'm not allowed to take control" (Dutch spouse caregiver)

"She's decided that when Dad is trying to give her the medication he's trying to poison herand that's when she would have the biggest tantrums" (Italian adult child caregiver)

For these reasons, the informal caregivers often adopted strategies such as supplying medications in medication aides (e.g., blister packed medications), and hiding (sometimes crushed medications) in their care recipient's food.

The participants in this first stage of the research study suggested that even though they were currently accessing medical practitioners, community pharmacists, caregiver support groups and the internet for

their medication information needs, they felt that many of their information needs remained unmet. They maintained that there was a lack of access to appropriate medication information in any format, visual, verbal or written. They also suggested that the limited information currently available did not always cater for those with diverse literacy levels and was certainly not always available in different languages.

“I go to a chemist where there is a Portuguese girl. We understand each other. It’s the other ones I can’t understand a word. I like to go in when she is working but she only works one day a week”
(Portuguese spouse caregiver)

Stage 2: The development of the medication information resource

In addition to using the themes identified in the first qualitative stage of the study, we conducted a review of current paper-based and online medication management information resources available for informal caregivers of PLWD within Australia to inform the development of a medication information resource. Material was sourced from a variety of providers including the Australian Government, Alzheimer’s Australia, the National Prescribing Service, community pharmacy help-sheets, the Royal District Nursing Service, Independent Living Centres and Carers Australia. This review found that medication management information for informal caregivers is fragmented, not comprehensive and difficult to access. Of this material, only selected information resources are currently available in various community languages.

The findings from both stages were used to guide the development of a comprehensive, medication management information resource for informal caregivers of PLWD. This resource addresses issues specified by the informal caregivers as being important during stage 1 and also provides links (where appropriate) to the additional information currently available from the aforementioned providers. To ensure that the information is easy to read and understand, health literacy guidelines (US Department of Health and Human Services, 2009) were used to help develop the resource and visual, written and audio content were included. In addition, the clarity and usefulness of the written English content was pretested with a small number of informal caregivers and health professionals before having the material translated into Italian.

Evaluation of both the English and Italian versions of the online resource is currently underway to ensure its usability and relevance to informal caregivers before making the resource generally available online. An adapted version of the ‘Quality checklist for reviewing health information’ (Centre for Health Promotion, 2006) is being used to structure the evaluation process. It is anticipated that further languages and other formats such as a DVD version will become available to improve the accessibility of the resource in the not too distant future.

Summary

This information resource will provide ethnic minority informal caregivers of PLWD accessible, easy to understand information which should be able to support them in their medication management roles. Health professionals will also be able to access and recommend this information resource for their ethnic minority patients living with dementia in the community setting and their informal caregivers. Overall it is anticipated that this resource will help ethnic minority informal caregivers to continue to provide safe and effective medication management for their care recipient living with dementia.

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THE METHODOLOGICAL CHALLENGES OF CONDUCTING OLDER PERSON RESEARCH IN AN ACUTE CARE SETTING: REFLECTIONS FROM A FOCUSED ETHNOGRAPHER

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Abstract

This paper outlines the fieldwork experiences of a Nursing PhD research student undertaking a study using a focused ethnographic approach in acute hospital settings. The aim is to discuss the methodological challenges found during the study that were associated with fieldwork involving registered nurses (RNs) and older patients within acute care. The study explored the clinical practice of RNs in the assessment and management of pain in older people. Methods included non-participant observation, document review, semi-structured interviews with RNs and older inpatients over a period of six months. Topics covered in this paper are the methodological challenges associated with a focused ethnographic approach, the practical aspects of undertaking fieldwork, and the roles that a researcher is required to assume.

Rationale

This paper outlines the fieldwork experiences of a Nursing PhD research student undertaking a study using a focused ethnographic approach in acute hospital settings. The aim is to contribute to the emerging researcher knowledge base regarding practical experiences of undertaking research in acute care settings. Emphasis is placed on the importance of being aware of the practical aspects a researcher may experience and the potential barriers that they may face.

Focused ethnography is a style of ethnography that describes a specific social process that occurs over a limited period of time (Boyle, 1994; Higginbottom, Pillay, & Boadu, 2013). An ethnographer aims to collect, describe, and explore how people will interpret an experience and mould their behaviour (Aamodt, 1991; Morse, 2007). Fieldwork that involves ethnographic methods as described in textbooks rarely encapsulates the variety and actual experiences of the researcher in the field, particularly in regards to the level of immersion required of a researcher.

When undertaking a focused ethnographic study within your own profession, methods used require the maintenance of a separation between professional and researcher roles, regardless of the setting and level of immersion. The point of ethnography is to get as close to 'being as one' in order to experience what it is like for the participants and to become acculturated in order to socialise comfortably within the context of the study (Madden, 2011; Santiano et al., 2008). However, it is noted that complete cultural and social immersion or 'going native' means that the researcher can no longer remain as an ethnographer. For example Slatyer (2013), in her nursing PhD, found that using a method of full participant observation within her professional field resulted in over immersion. This stemmed from reliance by others on the non-clinical contribution made by her, which reduced their work load and required a change of methods mid-way through the fieldwork (Slatyer, 2013). Therefore, the role assumed when conducting studies within your profession can direct the focus away from your research and this is particularly a danger when using ethnographic methods. A respectful distance is required so that the researcher can question, in an

unbiased manner, the behavioural quirks and existing social order of the participants and their workplace (De Laine, 2000).

The role that I assumed for the study was determined before I entered the field. As a researcher I maintained a constant, regular and frequent presence in the fieldwork sites, either in the morning or late evening. The study by Santiano et al (2008) outlined the need for having a constant presence within hospital environments to facilitate an ongoing connection. My role was that of partial immersion to develop acculturation into the social setting of the wards (Madden, 2011). From reflection based on my previous ethnographic research experience in acute care, I found there is a requirement when undertaking research within my professional field that I needed to be viewed solely as a researcher and not as a co-worker (Harmon, 2010). To maintain a high profile I would introduce myself to staff, put up information posters, and conduct in-services to provide information about the study and my purpose for being there. To clearly outline my researcher identity I wore smart casual clothes with a badge identifying myself as a researcher (Santiano, et al., 2008). I verbally clarified that I was present only within a researcher role and this was clearly stated in the information sheet provided to all participants. I was clear to delineate myself from being a source of information by deferring questions that were not about the study to others.

Although I am a RN, I was not employed within any of the study's participating hospitals or wards. The consequent ethical implications of being present as only a researcher also meant that I did not provide any nursing care, as the older patients had consented only to my presence for research purposes and not to receive any form of nursing care from me. In the event of any emergency situations arising, I had a pre-conceived plan before entry to any facility to follow the policy/procedure of the hospital and not assume any clinical nursing role.

Methods

Ethical approval based on the national NHMRC guidelines was gained from the area health service in which the study was located. Methods used were non-participant observation and semi-structured interviews (Madden, 2011) with RNs conducting pain assessment and management processes. Non-participant observation originates from anthropology, where fine detailed aspects can be documented of a social situation that the researcher is not part of and can be used for short periods of time to focus on specific actions (Leininger, 1994). After gaining consent from both participants (the RN and the older person/patient), I followed the RN while they were providing care to the older patient. Focused attention was paid to pain assessment and management processes. Each non participant observation period was followed up with a separate semi-structured interview with the RNs and cognitively intact older people. I also undertook a document review of the patients' medical notes on the day that fieldwork was conducted.

A reflective journal was also kept separately to the field journal. The purpose of the reflective journal was to provide reflexivity to enhance the study's rigour. Engaging in reflexivity enables the researcher to identify any bias that they may inadvertently place on the field work process.

Fieldwork was undertaken in two hospitals within the same area health service and across eight acute care wards. Nine RNs and 42 older patients participated in the study. There was a total of 24 non participant observation periods followed up by 23 semi-structured interviews with the RNs (one RN interview was lost due to Easter). The RNs were interviewed regarding their interactions with the older patients relating to their observed pain assessment and management procedures. Eleven older patients who were cognitively intact also participated in semi-structured interviews. A typical day in the field lasted more than ten hours and yielded copious amounts of data. The results of this study are presented elsewhere.

Methodological challenges and discussion

Recruitment of participants took two months and the fieldwork was carried out over a period of six months. Due to a delay in ethical clearance, seasonal holidays affected the course of the fieldwork and participant recruitment did not occur until January (after the Christmas break). Public holiday periods (e.g. Easter) also delayed some of the fieldwork. It was noted that, despite undertaking the research within a setting that provides continuous care, a researcher needs to be mindful of the time of year when recruiting and conducting fieldwork.

Gatekeepers are individuals within a setting who may inadvertently or intentionally block a researcher's access to potential participants (Berwick, Ogle, & Wright, 2003). It is noted by Berwick et al., (2003) that to turn a gatekeeper into a supporter requires identification, networking and direct communication with them. Identification of potential gatekeepers within each ward was a significant determining aspect if the research was to go ahead on a given day (Berwick, et al., 2003). I found that every ward was different, but that all were very busy due to the hectic nature of acute care ward activities. First thing in the morning is particularly busy due to staff changeovers and doctors' rounds. To ensure the wards adopted a supporter role, liaison occurred the day before any fieldwork was to take place. This approach assisted key contact people to become supporters of the study, rather than seeing it as an unanticipated interruption to their normal activity and lowering their view of the priority of the research and effectively turning them into a gatekeeper.

Conducting research in your own professional area can be difficult from being overly familiar with the setting and viewing others through a preformed mental predisposition or cultural lens (Madden, 2011). This can result in the researcher overlooking structures or behaviours and missing facts that are of ethnographic importance (Madden, 2011). I constantly took detailed notes, which I reviewed to ensure I was not writing aspects from a preordained or selective viewpoint; I aimed to document each situation in full detail as it unfolded. Non-participant observation involves listening, looking, drawing pictures, following and communicating with others. This can be difficult to do on night shifts due to low light situations and, as a researcher, you are outside of your normal sleep/wake hours.

Each of the eight wards required a different researcher role. I created two main roles: a social role where I walked and talked to staff about my research; and a role when collecting data. De Laine (2000) indicated the need to have informal and formal roles. A formal role is assumed when undertaking the actual fieldwork and the informal role is to maintain a presence and recruit participants (May & Finch, 2009). I would verbally clarify which role I had assumed when present on any of the eight wards.

Semi-structured interviewing is an important aspect of the study as this facilitates the formation of prolonged relationships for follow-up clarification and discussion of sensitive issues (Crawley, 2010). In my study, the topics for conversational questioning were formulated on the previous observational period. Crawley (2010) noted that flexibility is required in the location and timing for conducting interviews in hospital settings. Significant negotiation was undertaken regarding the timing and location of all of the study's interviews. The RNs preferred to do the interviews in their own time and that was accommodated within their work location. These nominated times were usually at the end of their shift, during a meal break and before the midnight round. The length of time they allocated was 30 minutes and this meant that there was a possibility that depth could have been compromised within the data gained. Due to the RNs allocating a time frame for interviews, the informality of the interview was also compromised at times, particularly when the RNs were 'clock watching' and, as such, were not completely at ease within the situation.

The time constraint placed by the RNs on their interviews meant prioritisation of discussion order occurred in the interview. I often had a line of discussion regarding aspects covered in previous interviews that I wished to follow up to gain more insight into aspects of the observed procedures. For a researcher this means that an array of topic priority for discussion may be required before asking questions of the preceding observation period to allow for follow up of previous interview material. This required structuring of the interviews so that they were experienced as a comfortable exchange between the participants and me. This is a proficiency that I had learnt during my previous studies (Harmon, 2010), and I honed this skill further during the course of this study from the on-going relationships that I developed with the participants.

Semi-structured interviewing of the older patients also required negotiation around the timing of the interview, but for different reasons (Berkman, Leipzig, Greenberg, & Inouye, 2001). Older people were often unable to participate in an interview for more than 30 to 40 minutes due to their reason/s for admission (e.g. fatigue associated with ill-health or surgical procedures). It is important to arrange a time with them during the day that is convenient and doesn't clash with visitors or rest periods.

A focused ethnographic approach requires intensity for data collection and this will mean the incorporation of a multitude of data collection procedures (Higginbottom, Pillay & Boadu, 2013). The analysis of data then requires a researcher to engage in an iterative, cyclical and self-reflective process which is undertaken throughout the data collection period (Higginbottom, et al., 2013). This meant that a lot of time was required in between observation days when I was not in the field to allow for the ongoing data analysis, but there was also the need to maintain the momentum and continuity of observations. I used the software program 'Nvivo', to assist with the copious amounts of data gained, in order to be able to systematically analyse the data.

Conclusion

Focused ethnography can be used within multiple sites for exploration of care delivery. Research in your own profession and within acute care can be challenging. When conducting research within your own profession, it is imperative that, before entering the field, clarity exists for what your role/s will encompass when conducting research. A researcher must be mindful to maintain appropriate contact with the wards and the participants as supporters of the research. This requires effective communication, appreciation of the busy nature and the priorities of acute care service delivery and flexibility. When undertaking interviews, negotiation is required for the timing and location of the interview. It is important to have some of your topics for interview discussion prepared before you enter the field, in case a participant has time constraints. Inclusion of older people in research within acute care also requires a respectful approach and awareness of the situation surrounding their admission. In summary, if you keep in mind the few simple recommendations outlined above, which are applicable regardless of your profession, undertaking research in acute settings with older people is possible and can be a deeply rewarding experience.

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WORD RETRAINING PROGRAMS CAN PROVIDE MEANINGFUL BENEFITS TO PATIENTS WITH SEMANTIC DEMENTIA

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Abstract

Semantic Dementia (SD) is an incurable neurodegenerative disease characterised by significant, progressive impairments to naming and comprehension. Recent studies, however, have shown that patients with SD can re-learn words following training. How patients at different stages of the disease can maintain these words, and whether relearned words can be applied beyond the training task is not well understood and deserves investigation. Two patients completed an intensive online word-training program involving daily repetitive practice of word-picture pairs of household items over a two-month period. The first participant presented with milder symptoms, while the other showed severe impairments. A multiple-baseline-across behaviours (word lists) design was employed, with picture naming ability assessed before, during and at monthly intervals following training. Generalisation of learning to other contexts was evaluated using video scene description, word-picture-matching, and verbal comprehension tasks (completing actions around the house), pre- and post-intervention. Both participants showed substantial improvements in picture naming ($p < .001$), however, within 2 months post-training, the participant with more severe symptoms required further weekly learning sessions to maintain words. In contrast, the participant with milder impairments showed a small reduction over time but in general could independently maintain performance. Improvements extended across other tasks for the first participant (video description: $p = .001$; verbal comprehension: $p = .031$), and to a lesser extent for the second participant (video description: $p = .03$; word-picture-matching: $p = .039$). Word training was able to deliver benefits to both a mild and a severely impaired patient with SD. Transfer of knowledge to other contexts and maintenance of gains was observed at both impairment levels, but lessened with increasing disease severity.

Rationale

Semantic Dementia (SD) is an incurable neurodegenerative disease which causes marked and progressive impairments in naming and comprehension of words (Gorno-Tempini et al., 2011). These deficits disrupt everyday abilities (Mioshi et al., 2007) and cause distress (Medina & Weintraub, 2007). Unlike other forms of dementia, however, SD patients show preservation of non-language domains, such as everyday memory, visual memory, attention, visuospatial skills, and problem solving (Hodges et al., 1999). Brain imaging studies show selective damage to the temporal lobes, with sparing of other areas of the brain, including the posterior hippocampus and other structures within the memory network (Agosta et al., 2010). Thus, recent studies have shown that SD patients are capable of re-learning forgotten words, despite their dementia (Carthery-Goulart et al., 2013). The maintenance and generalisability of these re-learned words to contexts beyond the training task, however, has been questioned (Lambon Ralph & Patterson, 2008). In several studies, losses in naming ability are seen within a few months of ceasing practice (Savage, Ballard, Piguet, & Hodges, 2013; Snowden & Neary, 2002), with exceptions difficult to explain (Heredia, Sage, Lambon Ralph, & Berthier, 2009). No studies yet have focused on what kind of training regime is necessary to maintain performance. Evidence for generalisation has been largely anecdotal (Heredia et al., 2009; Jokel & Anderson, 2012), or has shown mixed results (Mayberry, Sage, Ehsan, & Lambon Ralph, 2011). In addition, how disease stage impacts upon maintenance and generalisation is not well understood. The current study aims to explore these issues through the detailed study of two SD patients, with differing disease severity, who completed a word-training program.

Methods

Participants

Two 64-year-old male individuals were recruited from the Frontotemporal Dementia Research Group clinic at Neuroscience Research Australia. Clinical criteria for a diagnosis of SD (Gorno-Tempini et al., 2011) were met via a multi-disciplinary assessment and structural brain imaging. Both participants reported experiencing language difficulties for more than 6 years, and showed the expected pattern of bilateral anterior temporal lobe atrophy (left > right) on brain MRI. On neuropsychological assessment, visuospatial skills, non-verbal memory and basic attention were preserved, but marked deficits were seen on language tasks involving picture naming or spoken word-picture matching. Based on these results, the first participant was classified as showing mild semantic deficits, while the other demonstrated severe impairments. The study was approved by the Human Research Ethics Committees of South Eastern Sydney Illawarra Area Health Service and the University of New South Wales and both participants gave written informed consent.

Research design

A multiple-baseline-across behaviours (word lists), single subject design was employed. This approach provides experimental control through the sequential implementation of therapy to lists of words, while measuring against an untrained, control list over the same period (Perdices & Tate, 2009). The target behaviour monitored throughout the intervention was picture naming accuracy for each word list, which was assessed over multiple sessions before, during and following training.

Word training procedure

Each participant engaged in an individually tailored program, comprising approximately 100 household items (e.g., food, appliances, etc.) divided into three words lists, matched for word frequency, frequency of use (daily, several times per week, weekly, monthly, seasonally), baseline naming performance, and category. Digital photographs of all items were collected. Training for List 1 was provided for 5 days/week for an initial 4 weeks, followed by training of List 2 for 4 weeks, with List 3 left untrained. The intervention was delivered over the internet on the participants' home computer using custom built software, providing the researcher with control over the accessibility and content of each session. Treatment sessions took on average 18.5 minutes to complete and involved a repetitive practice of pairing the photograph of the target item with the item label, presented both in written format and via an audio recording of the spoken word. Participants were instructed to repeat the word before moving on to the next stimulus, with items presented twice in each session. After the initial period of training, performance was monitored weekly for 8 weeks and then at monthly intervals. When clear evidence of decay arose, and/or the participants were keen to recommence practice, weekly revision training was introduced.

Measures

To measure learning and maintenance, picture naming performance was assessed by presenting each photograph one at a time and giving the participant 10 seconds to provide the correct word. Approximations or distortions were scored as incorrect.

To measure generalisation, 3 alternative tasks were administered pre and post-intervention (see below). Each task included approximately 20 trained and 10 untrained items:

1. Video description: participants watched a series of short videos depicting household scenes (e.g., setting the dinner table) and then described the scene in detail. Every item correctly named received a score of 1.
2. Verbal comprehension: a series of sentences, each containing one target word, was read aloud, requesting the participant to complete an action in the home. Sentences were carefully worded to provide no additional clues (e.g., "Could you please take out 2 plates?"). Items were only scored as correct (1 point) if the action was completed correctly without any further information.

- Word Picture Matching (WPM): a series of 3 x 3 arrays of photographs were shown and participants were asked to indicate which picture matched the word spoken by the examiner. Arrays contained alternative versions of the target item and semantically or visually related foils.

Statistical analysis

Results were analysed at an individual case level, using McNemar's Test for related samples to evaluate change from pre-treatment to post-treatment scores for both trained and untrained words (with $p < .05$ used to indicate statistical significance).

Results

Learning

Both participants showed significant improvements naming trained pictures post-intervention ($p < .001$), achieving 95% and 88% accuracy respectively. Over the same period, no significant improvements were seen on the untrained lists ($p > .07$).

Maintenance

After training ceased, the participant with milder symptoms showed good retention of words during the first month, but some reduction in performance between immediate post-intervention and the 2-month assessment ($p = .039$). As a result, 4 revision sessions comprising 15 forgotten words from the training lists was implemented for 1 month. No further revision was given. At 6 months post initial training, naming was again consistent with the immediate post-treatment levels ($p = .508$) - see Table 1.

By contrast, within 6 weeks of ceasing daily practice, the second, more severe participant showed rapid, significant losses, requiring weekly training sessions of both lists to maintain words ($p < .001$). With ongoing weekly practice, at 6 months post initial training, he achieved an equivalent performance to his immediate post results ($p = 1.00$) and to the first participant.

Table 1: Naming accuracy on trained words (Lists 1 & 2 combined; $n = 64-66$ words)

	Final baseline	Immediate Post	1 month	2 months	3 months	6 months
Participant 1 (mild)	55%	95%*	92%	83%**	84%	89%
Participant 2 (severe)	26%	88%*	70%**	56%*	76% **	89%

* $p < .001$; ** $p < .05$

Generalisation

Significant improvements post-intervention were also observed on other language tasks. Both participants showed significant increases on the ability to produce the target word seen in the video clips ($p = .001$, accuracy 85%; $p = .03$, accuracy 57%). Improvements on single word comprehension were also evident, with increases on verbal comprehension for Participant 1 ($p = .031$, accuracy 89%), and on WPM for Participant 2 ($p = .039$, accuracy 75%). No significant improvement was found for the first participant on the WPM task due to his strong performance at baseline.

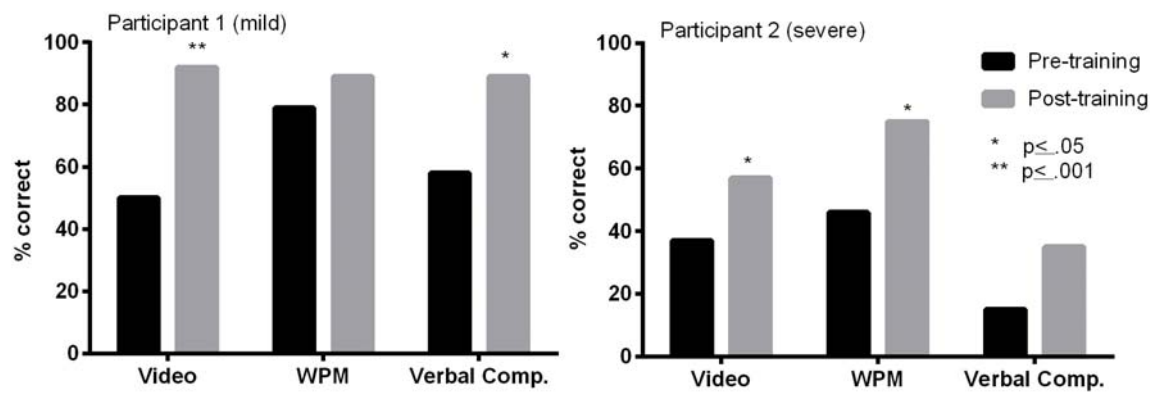


Figure 1: Generalisation results comparing pre- and post-intervention performance

Implications for policy and practice

The results of this study indicate that simple word retraining programs can improve both word retrieval and single word comprehension, even in patients with severe semantic impairments. Such treatment can be delivered at home, with clinician involvement in the design and monitoring stages, making it a viable approach with respect to cost and resources. Re-learning can be achieved within a few weeks of intense practice, and maintained for over 6 months if the appropriate revision schedules are implemented. In mild patients, this may include revision at intervals; for severe patients regular weekly practice appears necessary.

Summary

This study is the first to demonstrate how benefits of word retraining can not only be maintained with appropriate schedules of revision, but also applied to other contexts, providing practical help to patients with Semantic Dementia. Word retrieval problems were reduced equally in patients with both mild and severe semantic impairments, using simple methods of associative learning on the home computer. Although results were achieved within 4-8 weeks, some level of ongoing revision is necessary to maintain word knowledge. Transfer of knowledge to other contexts was observed at both impairment levels, but is lessened with increasing disease severity.

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