Transitional care from hospital to home:

Using tele-health nursing interventions

Brisbane, Australia

Professor Mary Courtney
Head, School of Nursing, Midwifery and Paramedicine

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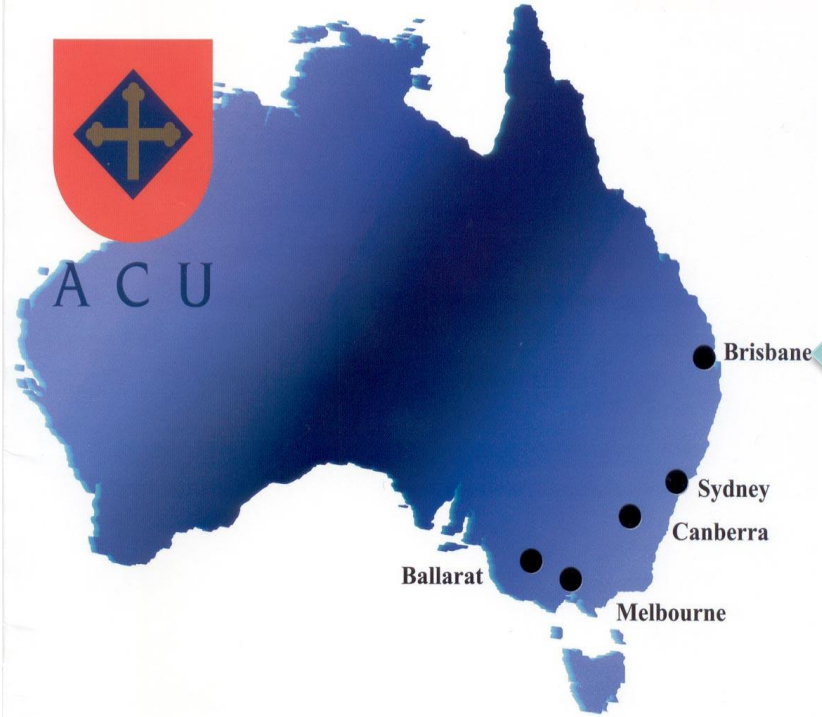
- 6 campuses
- 25,000 + Enrolments
- 13 Research Centres
- 89 student nationalities



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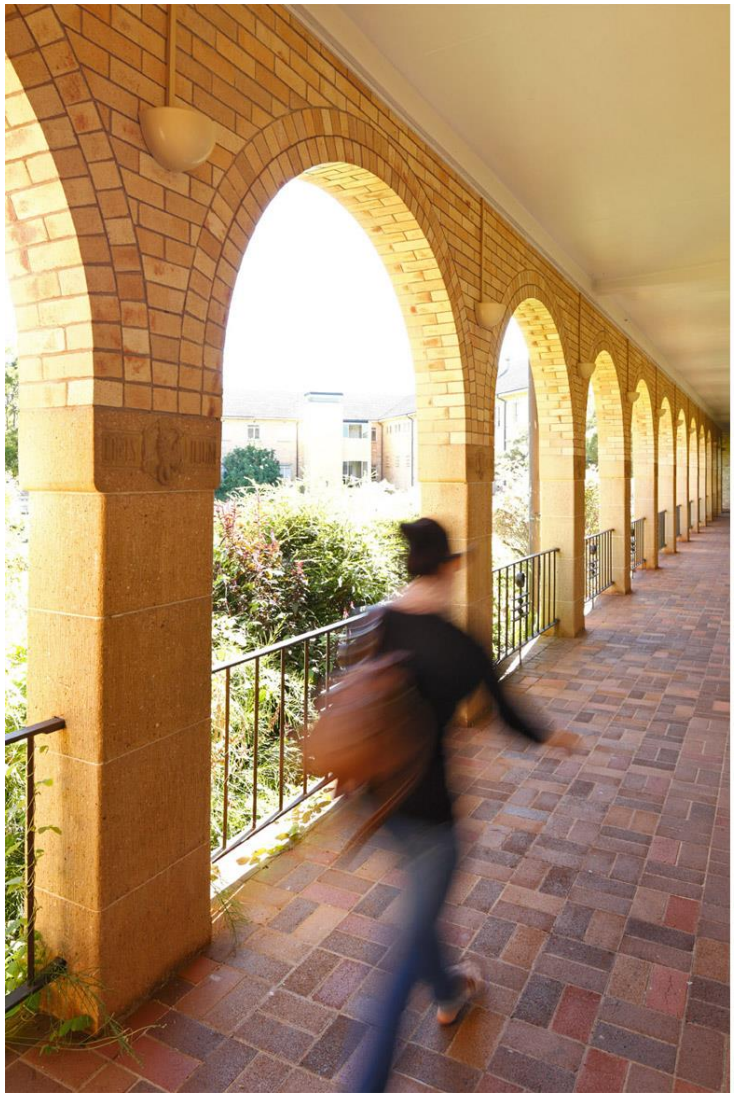

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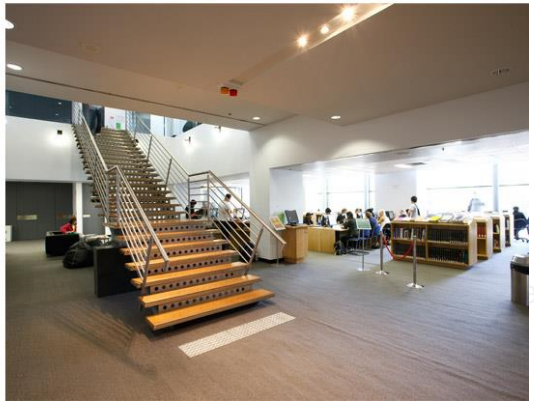

Transitional Care Programs for Chronic Disease Management

Evidence indicates for patients with chronic disease:

- **individualised discharge planning and in-home follow-up by nurses**

reduces readmissions

and

improves health outcomes

Transitional Care Programs for Chronic Disease Management

Evidence indicates for patients with chronic disease:

- **exercise programs can**

reduce functional decline

and

improve health, well-being and confidence

Chronic Disease Health Service Usage

- Older people with chronic diseases have:
  - higher rates of hospital admission
  - longer length of stay
  - higher rates of readmission
  - multiple co-morbidities
- During hospitalisation older people experience significant
  - functional decline
  - leading to loss of independence
  - increased use of emergency health services

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Multidisciplinary Transitional Care Service

OUR CHALLENGE:

To design, deliver and evaluate a

multidisciplinary transitional care service on

emergency health service use and independence

in activities of daily living in community-living older people.

STUDY 1

Comprehensive discharge-planning & in-home follow-up for hospitalised older adults incorporating exercise strategies to avoid de-conditioning & reduce risk of hospital re-admission (2008-2010)

Funded: Australian Research Council (Discovery)
RIO1

Methodology

A randomised controlled trial to evaluate the effectiveness of a comprehensive discharge planning and case management nurse in-home and telephone follow-up intervention on:

- Unplanned health service visits and readmissions
- Functional ability
- Health and well-being
- Quality of life

Participants

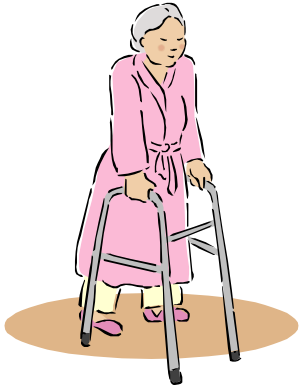
A sample of 128 hospitalised men and woman
(64 intervention, 64 control) with the following criteria:

Inclusion:

- Aged 65 and over **+**
- Medical diagnosis **+**
- **At least one of**:
  - 75 years or older
  - multiple admissions in last 6 months
  - lived alone
  - lacked social support
  - some functional impairment
  - history of depression
  - multiple comorbidities

Exclusion:

- required home oxygen
- dependent on wheelchair
- history of dementia
- lived in a nursing home
- neurological deficit or disease



Procedure

- Eligible patients recruited within 72 hours of hospital admission and provided informed consent
- Baseline data collected
- Random allocation to control group or intervention group

Control Group

- Received routine cares, discharge planning, and rehabilitation advice provided to patients by ward staff
- If in-home follow-up was required, it was organised in the routine manner (eg. referral to district nursing services)

Intervention contained six elements

- **Gerontic assessment** by Gerontic Nurse (GN) and physiotherapist within 72hrs of admission
- **Exercise Program**: Individual program for exercise and follow-up care developed & commenced in hospital
- **Overseeing Discharge Planning:** Regular visits from GN whilst in hospital to address concerns, monitor exercise program and oversee discharge planning
- **Home Visit:** Home visit from GN within 2 days after discharge, additional home visits if required
- **Telephone Follow-up:** Weekly phone follow-up for 4 weeks, then monthly phone contact for a further 5 months
- **Help Desk:** GN available via phone any day if problems arose

Exercise program

Exercise program consisted of 4 components:

- **Stretches**
- **Strengthening exercises with Thera-Band®**
- **Balance exercises**
- **Walking program**

Exercises were tailored to the individual's capacity.

Program was monitored and adapted according to progress during weekly and monthly follow ups.

Data Collection

Patients in both the intervention and control groups were assessed at four time points:

T1: on admission, prior to the intervention

T2: 4 weeks from commencement of the intervention

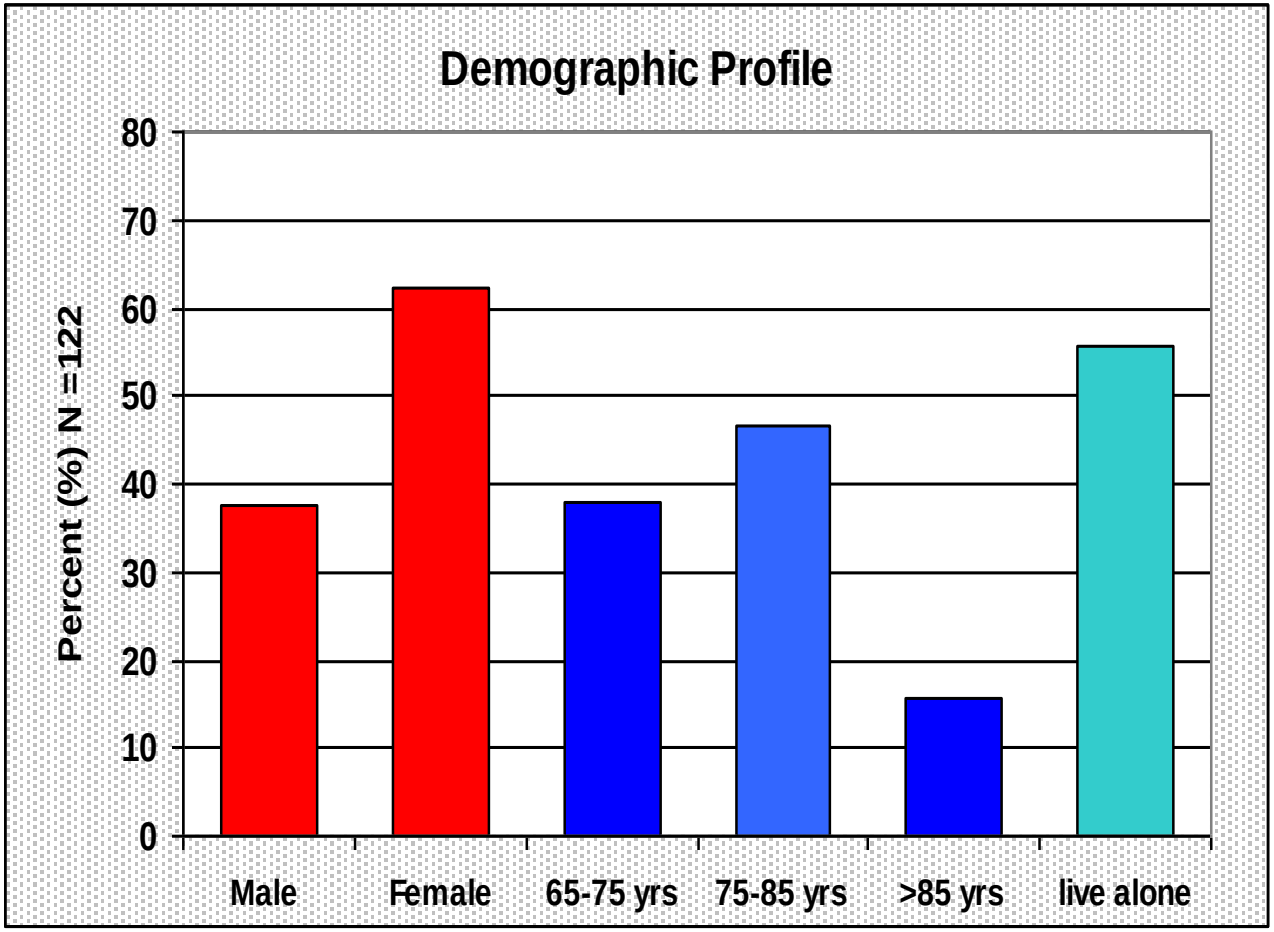
T3: 12 weeks from commencement of intervention

T4: 24 weeks from commencement of intervention

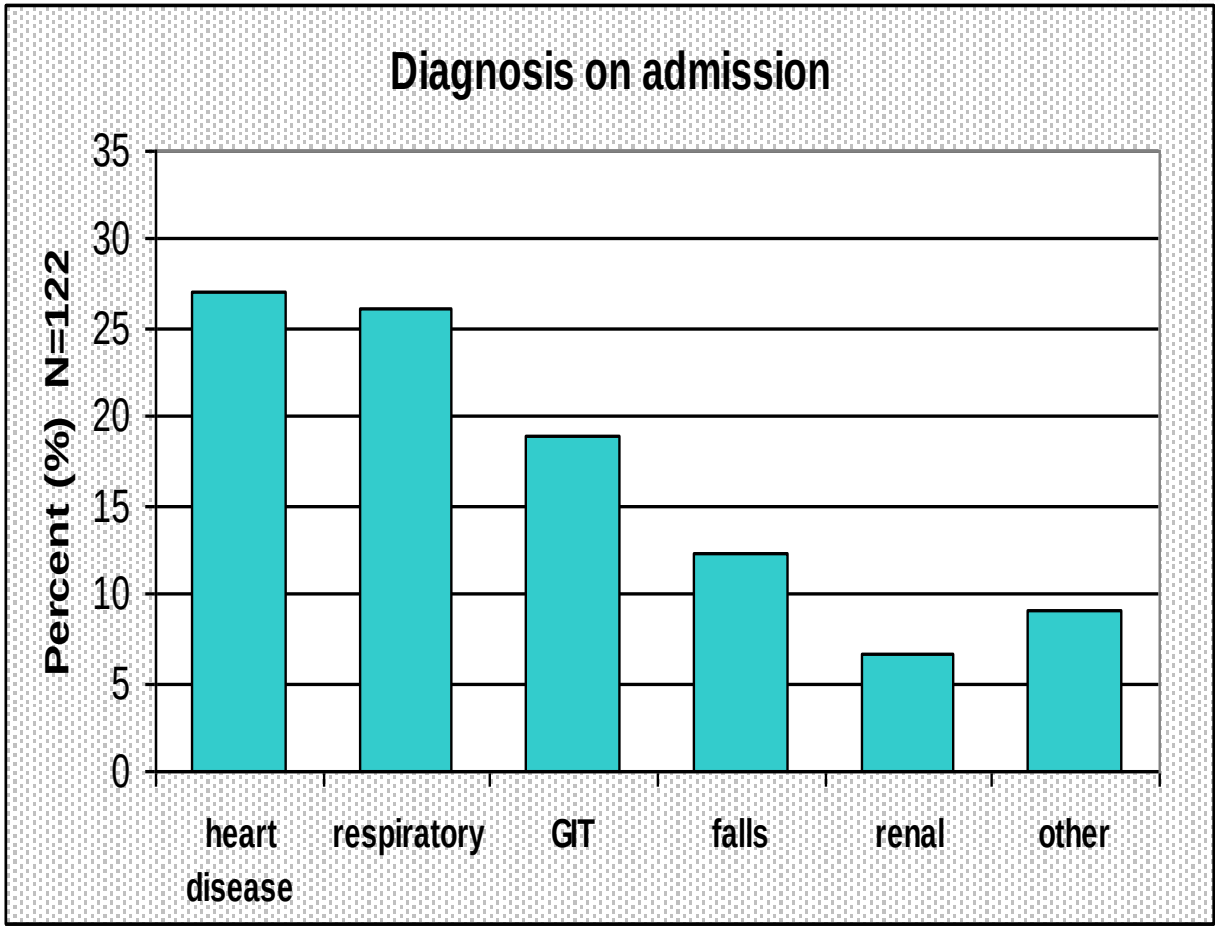
Data Collection

- Demographics
- Health care utilisation tool
- Health and functional status:
  (SF12; SPMSQ; IADL; ADL; WIQ; TUG; BBS)
- Psychosocial well-being:
  (GDS; MOS Social Support Survey; SF12; QoL)

RESULTS

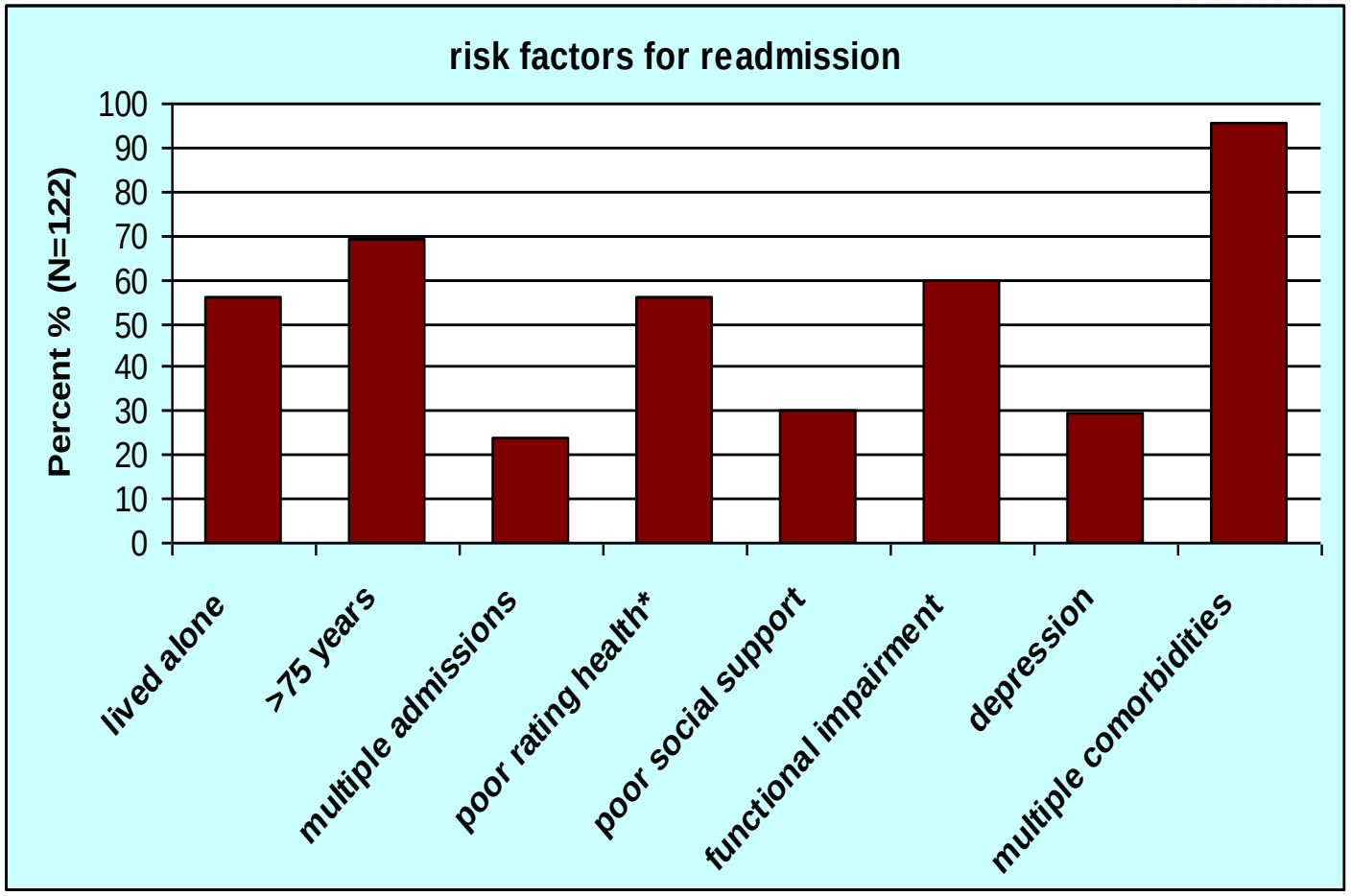


No significant differences in demographic variables between groups.



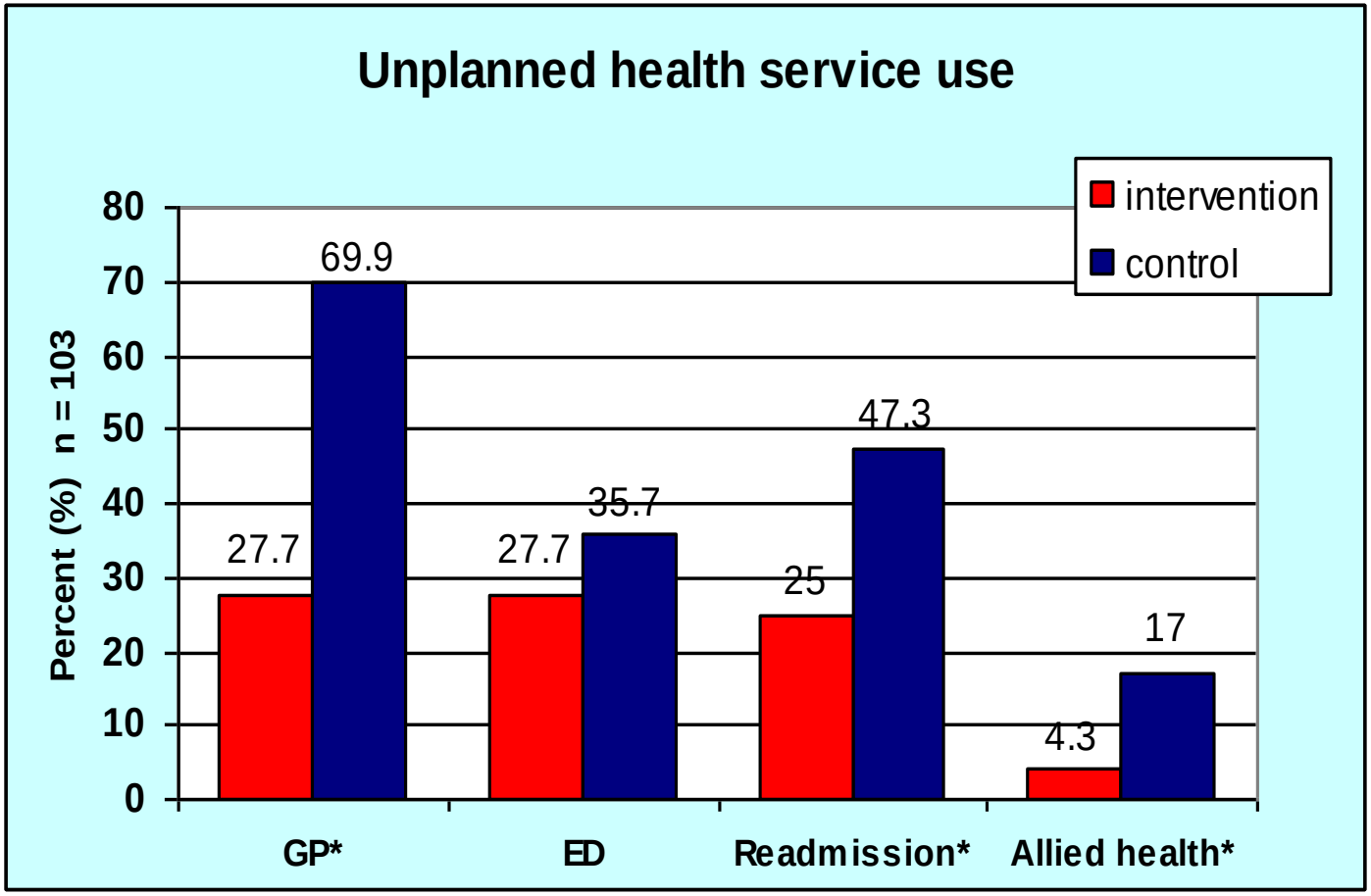
No significant differences between intervention and control groups.

'Other' category includes: dermatitis 6.6%, diabetes 1.6%, back pain 0.8%



* 65.5% Intervention group (38/58) and 46.9% Control group (30/64) rated their health as fair to poor, $p = 0.038$; No other differences between groups

median number of comorbidities = 4; median number or risk factors = 4



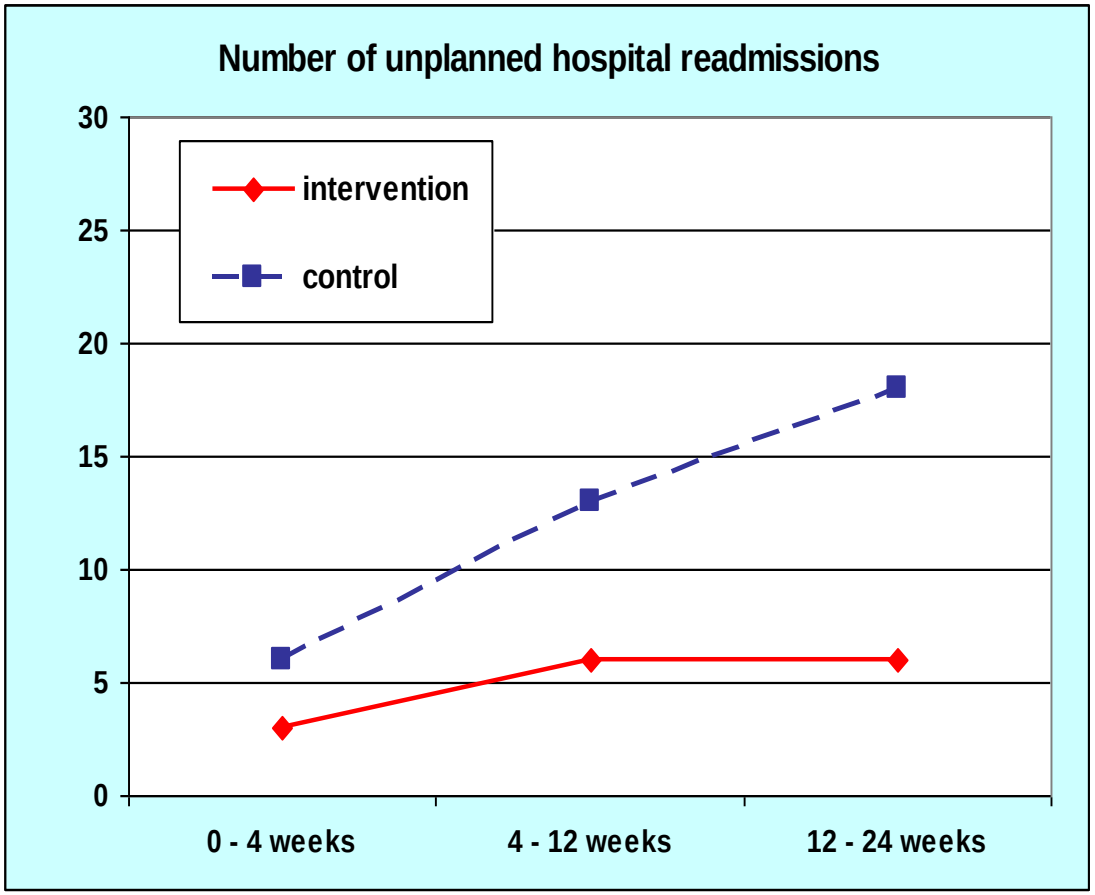
Unplanned GP visits: $\chi^2 = 18.02$, $p < 0.001$

Emergency Dept visits: $\chi^2 = 0.76$, ns

Hospital Readmissions: $\chi^2 = 5.46$, $p = 0.019$

Unplanned allied health visits: $\chi^2 = 4.12$, $p = 0.042$

Unplanned health service use: Number of Hospital Readmissions



1 - 4 weeks = 3 vs 6

4 - 12 weeks = 6 vs 13

12 - 24 weeks = 6 vs 18

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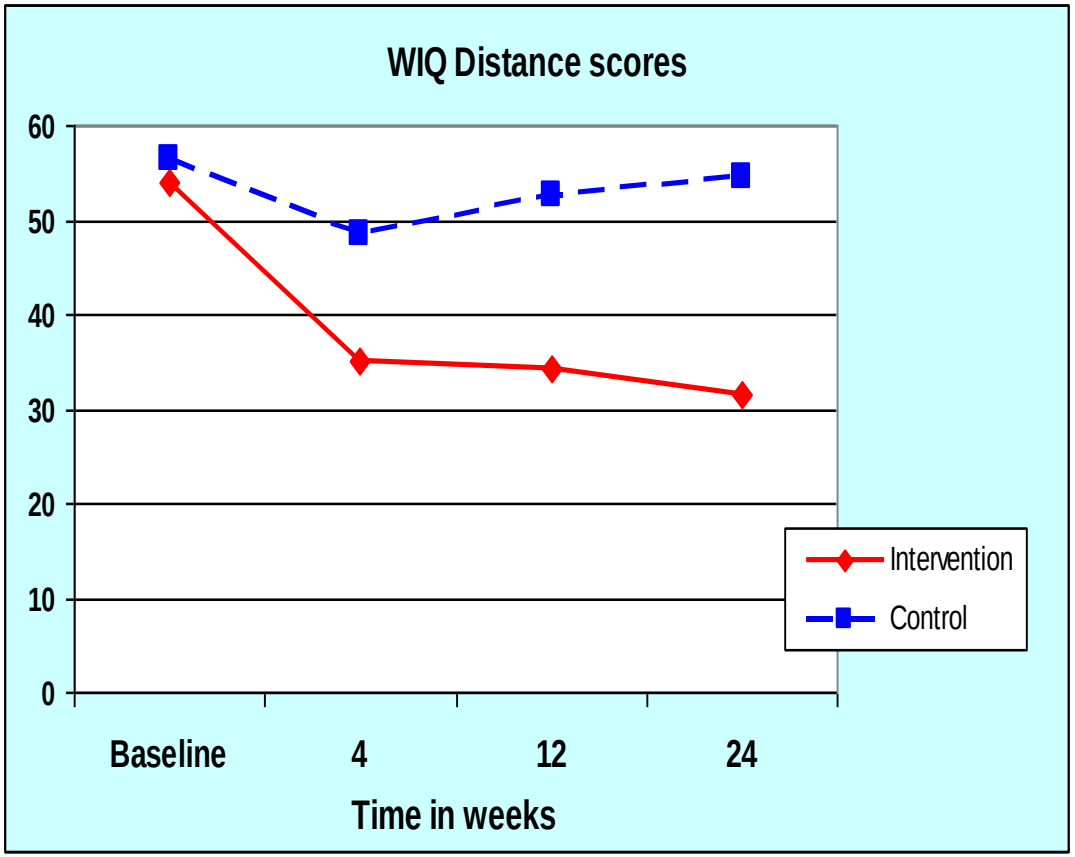
Reasons for unplanned health service visits

- Pain control (n = 36)
- Fainting/dizziness/low BP (n = 15)
- Falls (n = 5)
- Acute respiratory infection (n = 2)
- SOB / chronic heart failure (n =11)
- Chest pain / MI (n = 9)
- Drug reactions / issues (n = 10)
- Unstable diabetes (n = 9)
- Asthma / COPD (n = 8)
- Too ill to cope / palliative care (n = 8)

Frequent follow-up needs (after discharged home) requested from intervention nurse (intervention group)

- explaining medical & health information to patient and carers/family, repetition
- Locating medications and explaining instructions for medication
- Referrals to OTs, social workers, GPs, community services
- Emotional support
- Providing information on nutrition, chronic disease management (heart disease, diabetes, arthritis, COPD), chronic pain management
- Frequent checks when chronic disease unstable

Walking Impairment Distance scores

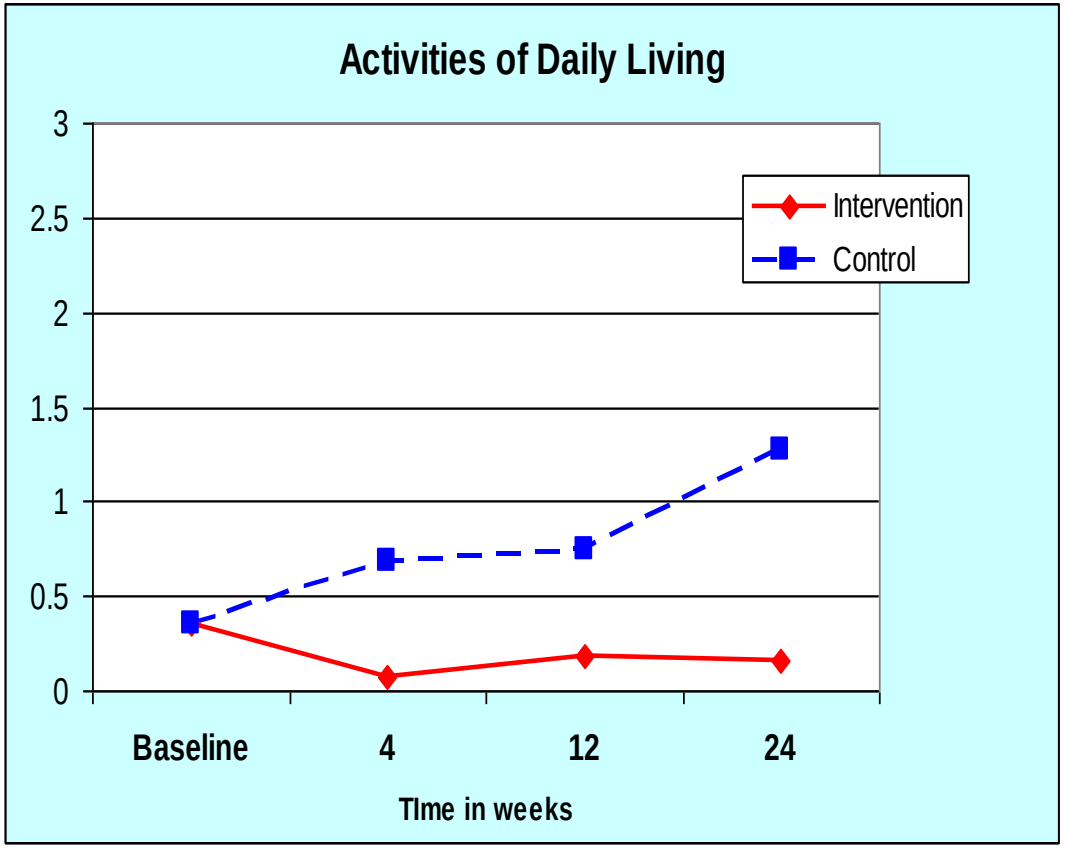


Repeated measures ANOVA found significant group/time interaction

***F*(3, 231) = 15.72, *p* < 0.001**

Scale 0 – 100, where 0 = no impairment in walking a distance, higher scores indicate greater difficulty

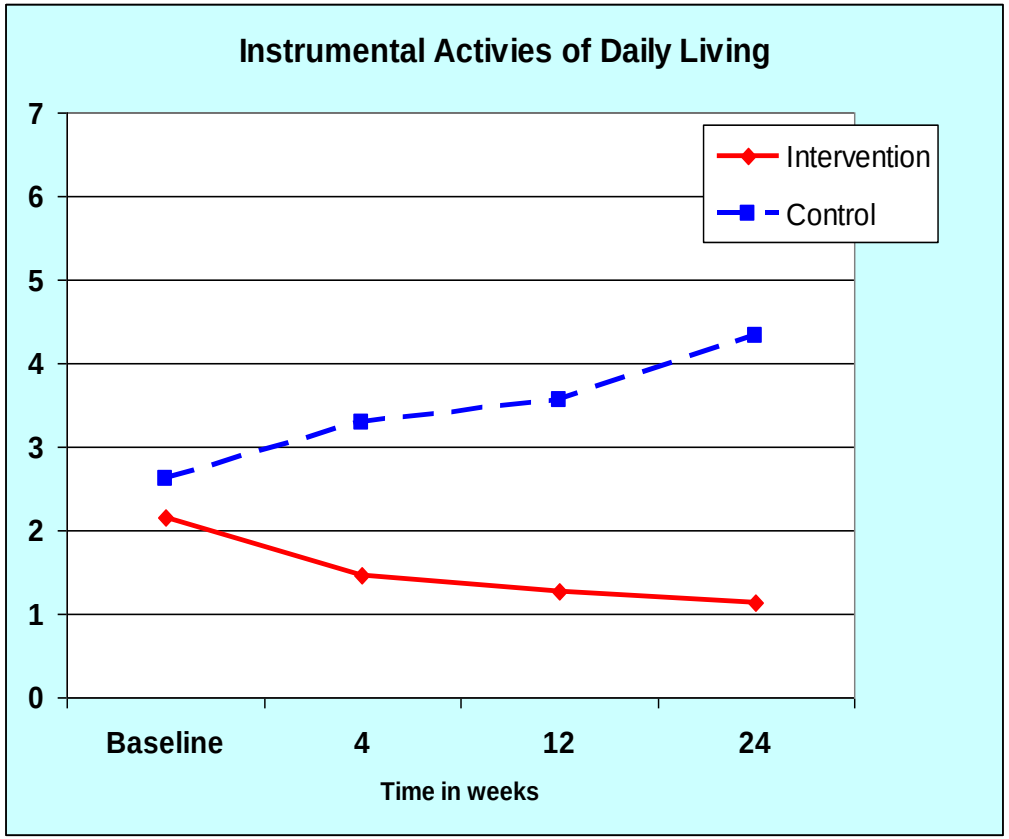
Activities of Daily Living



Significant differences were found between groups at week 4 ($p = 0.002$), week 12 ($p = 0.016$) and week 24 ($p < 0.001$)

Scale 0 – 6, where 0 = fully independent and 6 = dependent

Instrumental Activities of Daily Living

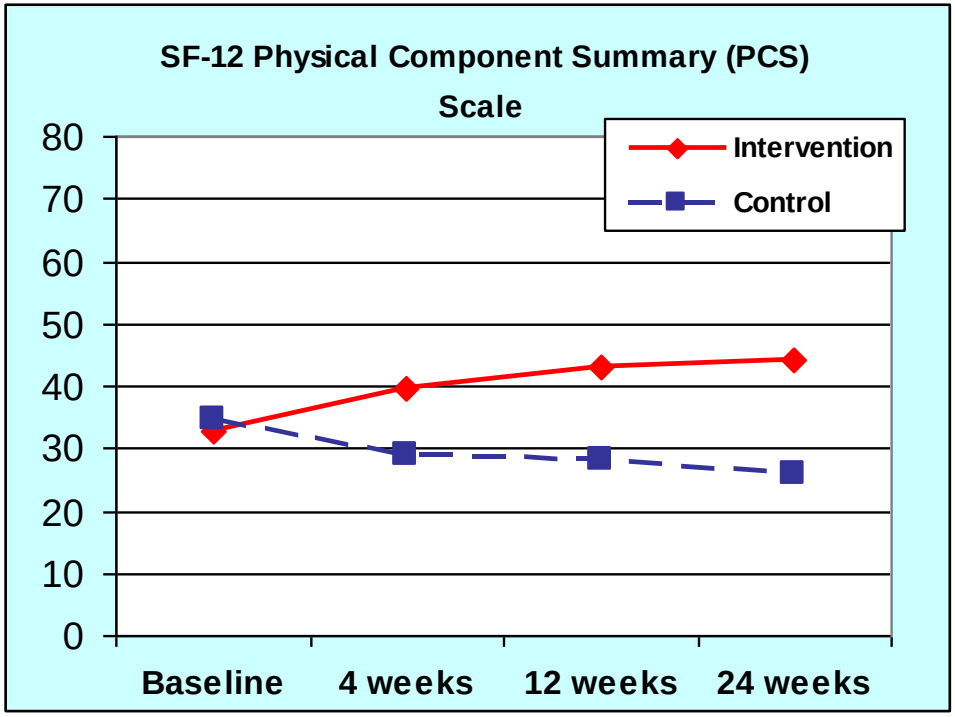


Significant differences were found between groups at week 4 ($p < 0.001$), week 12 ($p < 0.001$) and week 24 ($p < 0.001$)

Scale 0 – 7, where 0 = fully independent and 7 = dependent

Health related quality of life:

SF12 Results - Mean Physical Component Summary Scale Scores

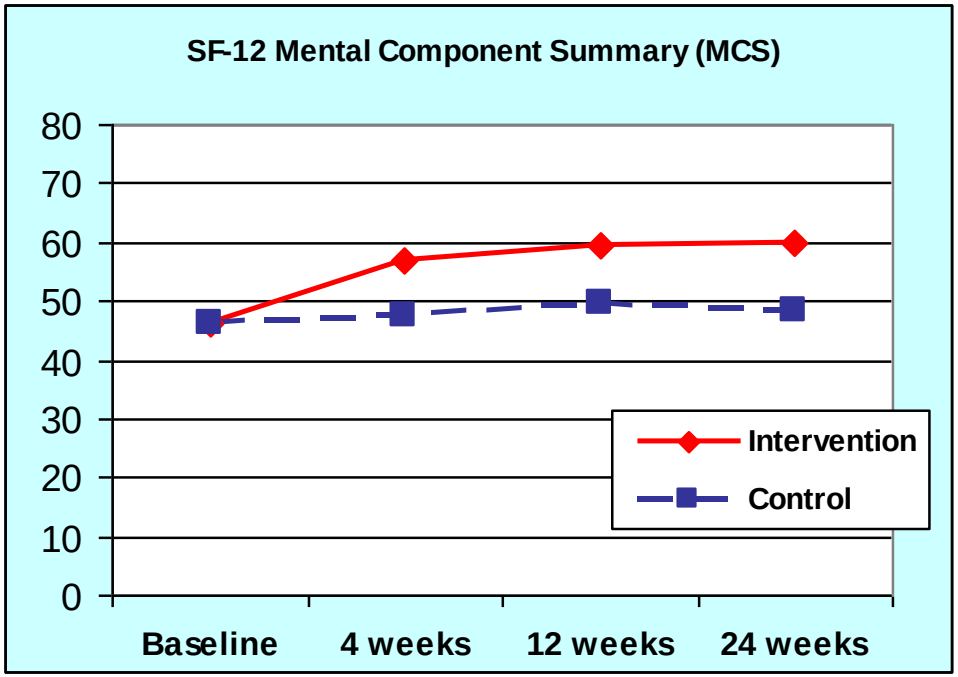


Repeated measures ANOVA showed a significant interaction $F(3, 276) = 49.01$, $p < 0.001$

A PCS score of 39.75 is average for persons aged between 75 years and over. Low scores indicate poorer physical health

Health related quality of life:

SF12 Results - Mean Mental Component Summary Scale Scores



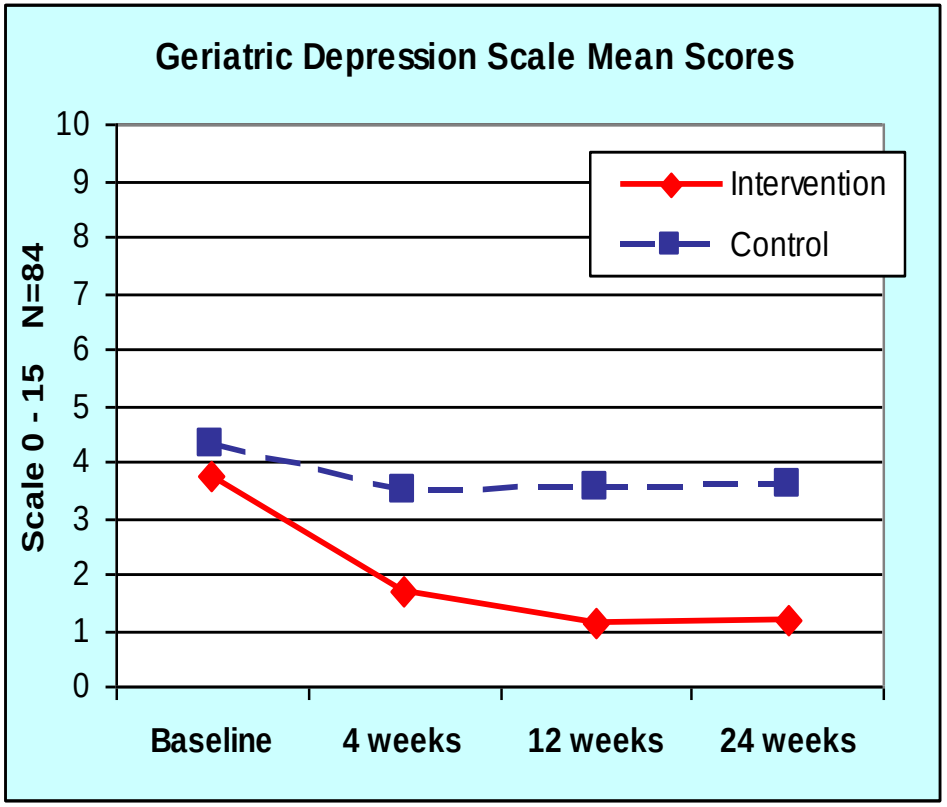
Repeated measures ANOVA showed a main effect

***F*(3, 276) = 4.24, *p* = 0.006; & significant time/group interaction**

***F*(3, 276) = 13.67, *p* < 0.001**

A MCS score of 48.89 is average for persons aged between 75 years and over. Low scores indicate poorer mental health

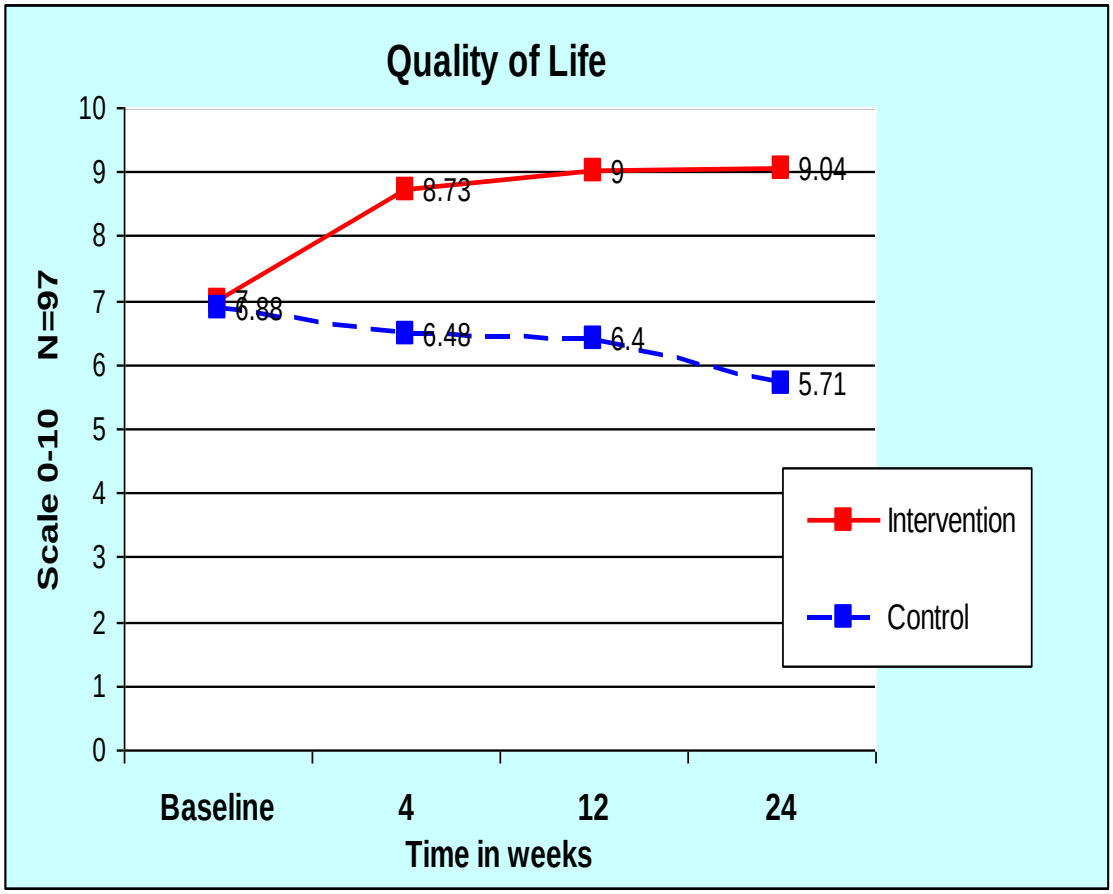
Geriatric Depression Scale Scores



Repeated measures ANOVA showed a main effect $F(3, 243) = 9.13$, $p < 0.001$) & a significant interaction between time/group $F(3, 243) = 5.62$, $p = 0.001$)

Scale 0 – 15, where 0 = no depression

Health related Quality of Life



Repeated measures ANOVA showed a significant interaction $F(3, 282) = 41.8$, $P < 0.001$

Scale: 0 = very poor quality of life, 10 = high quality of life

Conclusion

Targeted transitional care from hospital to home is successful in chronically ill patients as it will:

- Improve functional ability
- Improve quality of life
- Reduce hospital readmissions
- Reduce unplanned emergency department visits

Courtney et al. BMC Health Services Research 2011, 11:202
http://www.biomedcentral.com/1472-6963/11/202

BMC Health Services Research

STUDY PROTOCOL Open Access

A randomised controlled trial to prevent hospital readmissions and loss of functional ability in high risk older adults: a study protocol

Mary D Courtney[1,2], Helen E Edwards[2,3], Anne M Chang[2,3,4], Anthony W Parker[3,5], Kathleen Finlayson[2,3*] and Kyra Hamilton[2,3]

STUDY 2:
Was the intervention cost-effectiveness?

OPEN ACCESS Freely available online

PLoS one

Cost-Effectiveness of an Intervention to Reduce Emergency Re-Admissions to Hospital among Older Patients

Nicholas Graves[1*], Mary Courtney[2], Helen Edwards[3], Anne Chang[4], Anthony Parker[5], Kathleen Finlayson[3]

"From a health service perspective **net monetary benefits are almost $8,000 per individual who is offered the intervention programme**. We expect the opportunity cost to health services from adopting this intervention to be negligible because cost savings are likely to compensate the positive costs of implementing the programme.

STUDY 3:

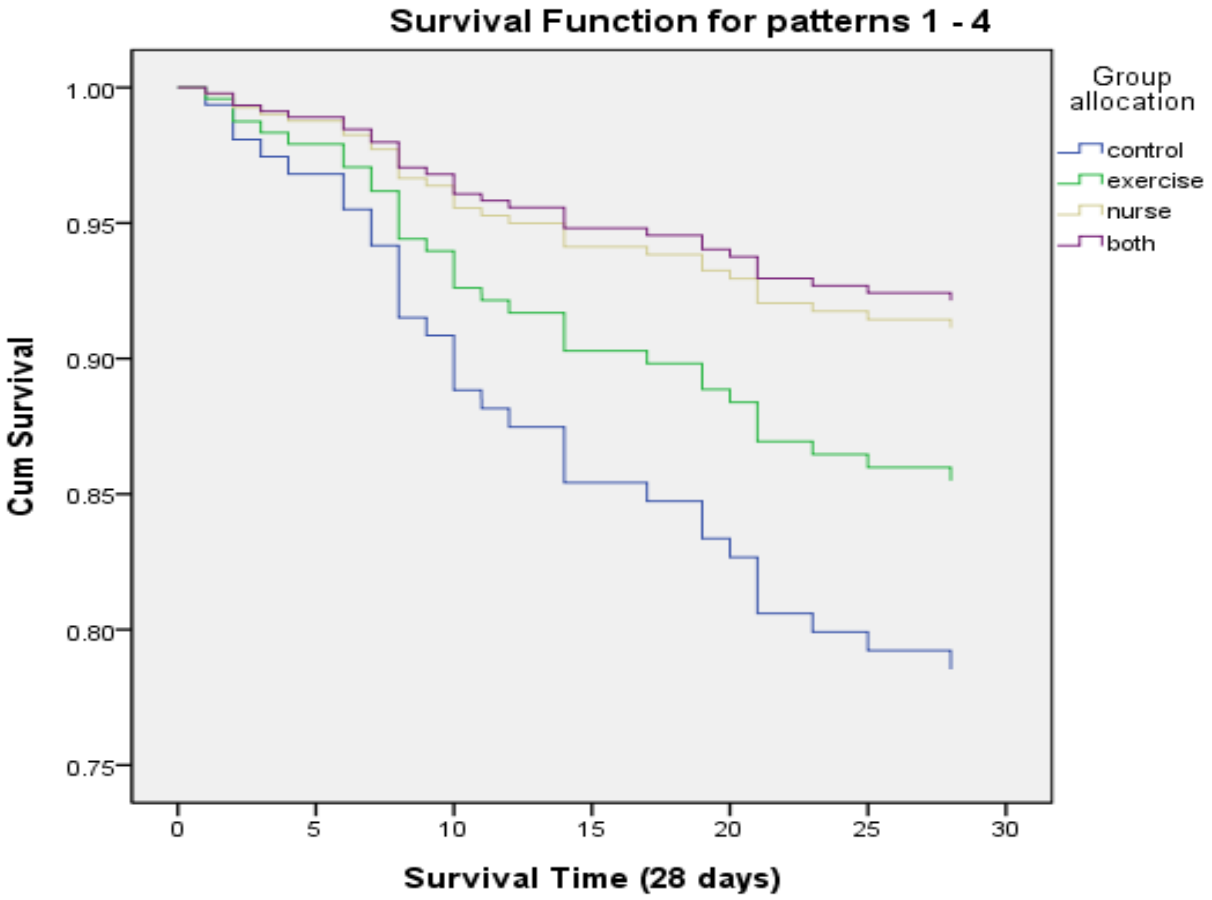
Which part of the intervention was more effective?

Preventing hospital readmissions and loss of functional ability in high risk older adults: A randomised controlled trial (2010-2012).

Funded: Australian Research Council (Discovery)
RIO2

4 groups:

1. Usual Care Control (blue)
2. Exercise Only Group (green)
3. Nurse Telephone Follow-up Only (grey)
4. Both Exercise/ telephone Follow-up (purple)



Impact of Co-morbidities

Dual Diagnosis - CVD and Diabetes

- Diabetes patients have higher rates of readmissions compared with patients without diabetes

- 28 day re-admission rate of CVD patients was 22% with compared to 6% without diabetes (Wu, J. et al 2010)

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Dual Diagnosis Diabetes & Cardiac self-management

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Study protocol

Development and pilot test of a peer-support based Cardiac-Diabetes Self-Management Program: A study protocol

Chiung-Jung J Wu[1*], Anne M Chang[1,2], Mary Courtney[3], Lillie M Shortridge-Baggett[4] and Karam Kostner[2,5]

Journal of Evaluation in Clinical Practice
International Journal of Public Health Policy and Health Services Research

Journal of Evaluation in Clinical Practice ISSN 1365-2753

Using user-friendly telecommunications to improve cardiac and diabetes self-management programme: a pilot study

Chiung-Jung (Jo) Wu RN BN MN(Intensive Care) DrHlthSc,[1] Anne M. Chang RN PhD FRCNA,[2] Mary Courtney RN PhD FRCNA[3] and Mary-Anne Ramis RN BN Grad Cert (Inf Cont)[4]
[1]Research Fellow, [2]Professor of Clinical Nursing, School of Nursing & Midwifery, Queensland University of Technology, Kelvin Grove, Queensland, Australia
[3]Dean of Faculty of Health and Social Development, The University of British Columbia, Vancouver, British Columbia, Canada
[4]Research Nurse, Mater Health Services, South Brisbane, Queensland, Australia

International Nursing Review

Peer supporters for cardiac patients with diabetes: a randomized controlled trial

C.-J. (Jo) Wu RN, BN MN (Intensive Care) DrHlthSc[1,*], A.M. Chang RN PhD[2], M. Courtney RN, PhD[3], K. Kostner MD, PhD[4]

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Issue

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Early View (Online Version of Record published before inclusion in an issue)

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ANY QUESTIONS?