Older People Safety

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488 THE IMPLEMENTATION OF FALLS PREVENTION FOR OLDER PERSONS IN RESIDENTIAL AGED CARE THROUGH BUILDING DESIGN

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Background Building design features of residential homes typically follow a medical model in design. This design often includes 'grab rails' in common areas to assist older persons with their mobility. This however provides an institutionalised feel rather than a home like environment. Contemporary building design can engineer out these institutionalised falls prevention measures and result in contemporary features that reduce falls incidence.
Description of problem The instance of falls in the elderly are a major contributing factor to physical decline in health status and subsequent increase of physical care needs in a residential aged care environment. The Salvation Army Aged Care Plus has adopted a person centred approach to building design to ensure the living environment is more homely. The building design has engineered rest points and other design features which has substantially reduced the incidence of falls in the elder population group within the environment.
Results Results have indicated a reduction in falls, an increase in physical agility, mobility and dexterity in combination with allied health intervention models. These results have been consistently reviewed and tested experientially over two recent aged care home commissioning of similar size, nature and resident functional status.
Conclusions The strategic design of the living environment can assist with an aesthetically pleasing home like environment for the older person living in residential aged care whilst substantially reducing falls risk. This outcome impacts on quality of life experience and satisfaction of the older person in the residential care environment.

489 ENSURE SAFETY FROM AGRICULTURAL WORK OF ELDERLY IN JAPAN

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Background Japanese agriculture is often a collection of small landowners. Farmland is maintained by men who also work for a company. Agricultural work continues even after retirement. It is important for elderly people to protect themselves from accidents. Agricultural areas are sparsely populated making health maintenance even more important. The purpose of this study is to analyse the understanding and physical status of elderly farmers.
Methods Participants of an agriculture company, a mutual aid organisation, in rural areas. A questionnaire, interview and physical measurement was conducted. Analysis was performed using the t-test.
Results Questionnaire; 119 farmers (82 men and 37 women) average age 65.8 years old.

64 had knee pain (54.2%), 55 had waist pain (46.6%).(When sleeping facing up, there was waist pain: 43, 46.8%)(Waist pain when bending: 47, 37.9%)(Painful to divert the waist: 52, 54.8%) (Painful to twist the waist: 35, 28.2%) (Painful in the same position: 70, 68.5%) Physical function; bending: pain in the knee: 34.9 cm (no pain: 29.9 cm) ($p = 0.02$), best walking 5.0 seconds (5.5 seconds) ($p = 0.048$). Normal walking 10 metres; pain in the waist: 7.64 seconds, (no pain: 7.00 seconds) ($p = 0.049$).
Conclusions Performing agricultural work continues in order to maintain the ancestral farmland. Farmers of advanced age have problems with pain in the knee and waist. Their bodies have weakened due to ageing. They were feeling pain when they bend, stretch or twist. There is a fear of falling when trying to stand. Scaffolding around the work area should be in place. Before and after agricultural work, stretching exercise is required. However, stretching exercise is difficult for farmers because of the pain in the knee and waist. Methods for easily achievable exercise need to be designed and taught to farmers.

490 PREDICTORS OF OLDER ADULTS' PARTICIPATION IN BALANCE CLASS TO PREVENT FALLS: CASE-CONTROL STUDY

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Background Falls are the leading cause of injury morbidity and mortality in older adults. Exercise, including balance and strength training, decreases fall risk, but few older adults exercise as recommended. We examined factors associated with older adults' participation in balance classes.
Methods This case-control study was nested in a controlled trial in which churches were randomly assigned to a social marketing program to encourage older adults to attend N'Balance classes or to no intervention. Eligible subjects were study church congregants aged $\geq$60 who completed a study survey. Cases included all eligible subjects who attended an N'Balance class during the study period; controls were congregants randomly selected to receive a survey who did not attend a balance class in this period. Study church leaders provided information about themselves and their church. Individual and church level characteristics were examined using logistic regression to determine the independent effect of social marketing and identify additional predictors of balance class participation.
Results After accounting for individual and church level differences, cases (n = 173 N'Balance participants) were much more likely than controls (n = 270) to attend churches that received the social marketing program (adjusted OR [aOR]: 20.62 [95% CI: 9.55, 44.54]). Cases were older (aOR per year of age: 1.06 [1.03, 1.10]), more likely to be female (aOR: 3.07 [1.74, 5.42]), and more frequently experienced 'near falls' (aOR: 1.98 [1.44, 2.72]). Cases were also more likely to attend a church with an older religious leader (aOR per year of age: 1.04 [1.01, 1.07]), located in a rural area (aOR: 1.89 [1.11, 3.22]).
Conclusions Church-based social marketing was strongly associated with increased uptake of balance classes for reducing fall risk, particularly among certain high-risk groups. Church-based

marketing may need to be tailored to target others at risk, including men and urban and suburban congregants.

491 EPIDEMIC FEATURES OF THE FALLS AMONG ELDERS IN CHINA DURING 2008 TO 2013

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Background Injury is one of the most serious threat to public health. Among them, Falls have always been playing a pivotal role in the cause of injury, especially for elder people. So we evaluate the epidemiologic features of falls injury and death among elders in China during January 2008 to December 2013, and expect to provide reference for the prevention and treatment.
Methods Injury and death data of falls were collected from the monitoring death surveillance data sets in national disease surveillance system and hospital based national injury surveillance data sets, which published by the Chinese Centre for Disease Control and Prevention. SPSS software version 17.0 was used for descriptive analysis.
Results The National Disease Surveillance Points system (DSP) data base showed that in 2008–2013, fall-related mortality among elderly person is fluctuating from 41.75/100,000 to 48.22/100,000, which was about six times than that among the whole population. The fall-related mortality increased with ages, so did the proportion of fall-related death to injury death. Furthermore, to different age groups, the proportion of fall-related death to injury death of males fluctuated from a low of 29.5 percent to a high of 32.8 percent. The ratio of female fall-related death obviously increased with age, in 65–69 years old group, 75–79 years old group, and the 85 years old and over group, the ratio was 6.6%, 18.1% and 79.4% respectively. For those patients admitted to hospital for injury, fall is the most important reason. Elderly people makes up 54.4% to 56.6% of all the injury cases, which is higher than the ratio in whole-population (30.1% – 36.1%).The proportion of elders fall-related cases to injury cases also showed a growing trend with age.
Conclusions The aged people is the susceptible population of fall injury with a high mortality. Those people with advanced ages, especially those females are the main concern of fall-related injury.

492 EPIDEMIOLOGICAL SURVEILLANCE OF ACCIDENTAL FALLS AT HOME AMONG THE ELDERLY IN FRANCE: CHUPADOM STUDY

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Background The frequency of falls among the elderly and their severity represent a major public health issue, whether in terms of deaths, functional or psychological sequelae, and cost. In France, the proportion of elderly people aged 65 years and more represent 18% of the population (12.2 million). Life expectancy at birth is 79.2 years for men and 85.4 years for women. In metropolitan France in 2011, 9,412 deaths due to falls were reported, of which 90% in people aged 65 years old and more with a sex-ratio equal to 0.6. It is necessary to further explore their risk factors for the implementation of effective preventive actions.
Methods Patients to be included in the study should be aged 65 years or more, suffering from an accidental fall at home resulting in hospitalisation. Prospective data collection will start in 2016 during six months in several French hospitals emergency services. Standardised questionnaires will collect the circumstances of the falls, socio-economic and demographic status, and health and home characteristics of the patients. A follow-up study will be carried out one year after the fall to evaluate sequelae.
Results This study aims at identifying the circumstances of accidental falls at home among the elderly and establishing profiles of fallers with the help of factorial analyses. The second part of the study will analyse the consequences of the falls one year later: recurrent falls, type of sequelae and disability, quality of life, depending on the initial severity of the fall and the profile of the faller.
Conclusions This study will contribute to the implementation of adapted preventive measures thanks to the profiles established.

493 COHORT STUDY OF OSTEOPOROSIS AND FRACTURE RISK: ARE WE ACHIEVING BENEFIT WITH SECONDARY PREVENTION?

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Background Osteoporosis is a global disease with a 30–40% lifetime risk of associated fractures according to the World Health Organisation. Osteoporosis incidence is likely to rise with ageing populations. Risk factor modification and medical treatments may reduce fracture risk. This work aimed to investigate the time to second fracture of patients receiving medical secondary prevention following index fracture compared to those that did not.
Methods An observational study design involved the formation of an anonymised e-cohort utilising linked records. All low impact fractures in patients aged >60 years were identified from the Secure Anonymised Information Linkage database between 01/04/2009 and 31/12/2014. Index and secondary fractures were identified from the emergency department and inpatient data sets. Linkages were made to censor for migration and mortality. Linked primary care records identified patients that had received prescriptions for fracture prevention medications. Statistical analysis involved regression models with accelerated time adjustments.
Results Over 49,000 cases were included. Of these, 8,033 (16.1%) had received medical treatment, the median age was 78 years (range 60–108) and 14,120 (28.4%) were male. Receiving medical treatment was significantly associated with increasing age (OR 1.02, 95% CI: 1.017–1.022, $p < 0.001$) and female gender ($p < 0.001$). Secondary prevention was significantly and independently associated with lower hazard of second fracture (HR 0.25, 95% CI: 0.15–0.41, $p < 0.001$).
Conclusions Secondary medical prevention was associated with a 75% reduction in the hazard of sustaining a second fracture. However, fewer than a fifth of patients received such treatment. Study limitations include selection bias and potential residual confounding as patients were not randomised. Future work should focus on groups most likely to benefit from secondary prevention treatment to better inform clinical practice.