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REVES @ 20: Assessing the Past, Looking to the Future

ABSTRACTS

Active life expectancy and oral health: The case of elderly in Taiwan

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A previous study in Japan found that the chewing ability has a significant effect on active life expectancy. This study examines the effect using data from Taiwan by estimating active life expectancy.

The Association of Health Care Access and Mortality in US Stroke Survivors

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Objectives: 1) To assess the association of health care access and mortality in a recent national sample of US stroke survivors. 2) To determine whether this association differs for disabled and non-disabled US stroke survivors. 3) To identify factors associated with increased mortality among US stroke survivors that may inform potential health policy solutions.

Scientific Rationale: In 2004, 5.7 million US stroke survivors required comprehensive care and secondary prevention including risk factor modification. Stroke survivors have an increased risk of cardiovascular events that increase their morbidity, mortality, and health care costs. Our research has found that a significant proportion of disabled and non-disabled US stroke survivors have reduced access to health insurance, physician care and medications. Although recent work suggests that myocardial infarction survivors with reduced access to care have increased adverse outcomes, little is known regarding the relationship between health care access and mortality among US community-dwelling stroke survivors and whether this relationship varies by neurological disability. We will examine the association of health care access and mortality in US stroke survivors using a population-based survey.

Methods: Among 3,222 stroke survivors aged ≥18 years who responded to the National Health Interview Survey (NHIS) 1997-2000, we will measure 2-year mortality using the NHIS Linked Mortality Files which link records of adult NHIS participants with death records

from the National Death Index.[1] The main outcome will be all-cause mortality and the secondary outcome will be cardiovascular mortality. The primary dependent variable will be health insurance status. The secondary dependent variables will be inability to afford medications, no general doctor visit, no medical specialist visit and out-of-pocket medical expenses. With Cox regression analysis, we will adjust associations between access measures and death for age, sex, race/ethnicity, region, annual household income, education, co-morbidity, self-reported health status and survey period. Results will be weighted according to the NHIS sampling fractions to reflect national population estimates.

Anticipated impact: The identification of health care access measures associated with increased mortality in US stroke survivors will inform clinicians and policy-makers who seek to reduce these disparities and it will provide a methodology for addressing the role of these risk factors in mortality of this population.

Childhood Nutritional Deprivation and Cognitive Functioning among Older Adults in China

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Early life nutritional deprivation can potentially lead to fewer initial cognitive resources (i.e., less reserve) because the brain grows most during the prenatal period and the first 3 years of life and continues to grow in childhood and adolescence. Impaired brain development can lead to less efficient brain function because of less myelin, less branching of dendrites, and less developed connectivity patterns, although the brain can still function normally. The negative effects of the impaired brain development in early life may be small until aggravated by the aging process.

Early life nutritional deprivation may also set in motion a cascading series of events that ultimately impacts cognitive impairment at advanced ages. For example, there is growing evidence linking nutritional problems and educational achievement. Other research clearly documents the consequences of educational achievement and occupational challenges for cognitive functioning in prime adulthood, while still other studies have documented the importance of educational achievement and occupational challenges for cognitive impairment in old age. Thus, nutritional deprivation may have negative consequences for education, which in turn diminishes occupational challenges with subsequent negative effects of cognitive functioning into old age. Another potentially important pathway is the link between nutritional deprivation and the development of several chronic conditions which in turn affects late-life cognitive functioning.

Our goals in this study are straightforward. First, we document whether early life nutritional problems are associated with cognitive aging. Second, given evidence of this association, we evaluate whether early life nutritional problems are directly related to cognitive function or

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[1] We are limiting the cohort to survey years 1997-2000 because the NHIS began identifying stroke survivors annually in 1997 and mortality follow-up is available through 2002.

whether early life nutritional problems set in motion a series of cascading experiences that ultimately influence cognitive function in old age.

Methods. Based on two waves (1998–2000) of the Chinese Longitudinal Healthy Longevity Survey, we estimated logistic and multinomial regression models of cognitive impairment for a nationwide sample of people aged 80 to 105 (*N* = 8,444). Cognitive impairment was based on scores from the Mini Mental Status Examination validated for the Chinese population. Nutritional deprivation was based on two measures: an anthropometric (and gender-specific) measure of arm length and self-reported frequency of going to bed hungry.

Preliminary Results. Among both men and women, short arm length and frequently going to bed hungry were strongly associated with cognitive impairment. These associations were very robust when mediating factors such as education and occupational achievement were introduced into the model. Modest evidence was found for cascading effects of nutritional deprivation via education, although the weight of evidence points to the direct and dire consequences of nutritional deprivation for cognitive impairment.

Chronic Diet Patterns That Influence Cognitive, Physical, And Functional Limitations Associated With Aging. Results From The Cebu Longitudinal Health And Nutrition Study

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Among the many changes that accompany advancing age are the gradual difficulty in performing basic functions, limitations in physical activity, and increasing cognitive impairment. Lifelong diet patterns are among the factors that determine the onset of these age-related changes. Animal studies have proven that prolonged calorie restriction delays the aging process. Chronic exposure to a high fat diet could adversely affect cognition, while a diet high in fruits, vegetables, and fish decreases the risk of dementia, and is associated with improved cognitive health.

We will examine this diet-aging relationship in a sample of women ranging in age from mid- to late-life using data from the Cebu Longitudinal Health and Nutrition Survey (CLHNS), a community-based study of mother-child pairs followed since 1983 to date. The CLHNS started with a baseline sample of 3,327 pregnant women from randomly selected urban and rural barangays. These mother-child pairs have been visited at different time points over the past two decades: every two months from 1983-1986; and single visits in 1991, 1994, 1998, 2002, and 2005. Data collection and processing for the latest survey round, which began in October 2007, is in progress. Extensive data on socio-economic status, labor force participation, reproductive history, diet intake, nutritional status, and health were collected on these women. Starting in 1994, a module on aging was added to the survey which includes word list recalls, questions on physical limitations, activities of daily living (ADL), and instrumental activities of daily living (IADL). As of the 2005 survey, 2018 (61%) of the baseline women continued to participate in the study. Of these 2018 women, 62% were middle-age (35-50), 33% were near elderly (50-60), and 5% were elderly (60-69).

This paper will identify diet patterns that track over time, and determine how these are associated with physical and cognitive changes that occur with aging. Chronic diet patterns will be defined using 24-hour food recall data collected in 1983, 1998, and 2002. The main

outcome variables include: a) dichotomous variables indicating any difficulty in ADL, IADL, and physical activities; and b) mean scores in two rounds of word list recalls. The outcome variables will be derived from the 2007 survey where the proportion of elderly women is expected to reach 9%. Multivariate models will be run to assess the diet-aging relationship, controlling for education, morbidity status, physical activity, and other maternal and household characteristics. We hope that findings from this study will help inform the design of dietary interventions targeted at aging-related health problems.

The Compression of Mortality: Evidence and Explanation

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The frequency distribution of ages at death has been shifting to the right, but it has not retained exactly the same shape when the mortality at different ages has fallen since 1950s. Although the ages of deaths above the mode have become more compressed, the reason of why they became more concentrated is still rarely explored. Thatcher and his colleagues (2008) have explained how the ascending trajectory of mortality meets resistance in response to Kannisto's use of the term "invisible wall", to describe the force which appears to cause compression. The present paper uses 33 countries from the Human Mortality Database to document whether the scenario of the compression of mortality continues and to explain how the compression occurred due to the fact that the death rates at very high ages did not fall faster than they did. The results, especially for Japan, prompt us to re-examine the compression of mortality theory against the shifting mortality.

Differentials in disability-free life expectancies in France: the double burden of social condition

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This study aims to present estimations of disability-free life expectancies (DFLE) for occupational groups in France to highlight both the mortality differentials and differentials in health and functioning. The 2002-2003 French health interview survey comprises different sets of questions on disability. In parallel, data on mortality recorded in the census sample between 1999 and 2003 have been used to compute life tables according to the occupation class reported at census (1999). Combination of life tables and disability, with Sullivan method, allows to compute DFLE by occupational class at age 35 and 60.

We used different disability indicators to compute three DFLE for each occupational class in order to assess differences in various disability situations (sensory and physical functional

limitations, general activity limitations, restrictions in personal care activities). Our estimates point out a 6 year differential in life expectancy (LE) at age 35 between the upper managerial class and the manual workers (3 years for women). The differentials are even larger when considering functioning: upper managerial class benefit 34 years of life expectancy without functional limitations (73% of LE) and 44 years without personal care activity restrictions (95% of LE) while manual workers can expect to live 24 years without functional limitations (59% of LE) and 37 years without personal care activity restrictions (92%). Differentials in DFLE remain at age 60 both for the functional limitations (which are spread over 45% of LE for upper class and 65% for manual workers) and personal car activity restrictions (spread over respectively 9% and 14% of LE).

Manual workers not only have shorter life expectancy but moreover undergo a longer period in the various disability situations. Differences in health damaging exposures over the life course and occupational career as well as health behaviours and access to care explain this cumulative disadvantage.

Does smoking cause biological ageing? An investigation of the effect of smoking in old age on total life expectancy and disability free life expectancy
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Introduction
Smoking is a well documented risk factor for shortening life expectancy considerably. Less is known about whether smoking associated with an increase in the functional impairment at older ages. This presentation will investigate whether smoking in old age is associated with decrease in total and healthy life and whether these factors are consistent with a biological ageing effect of smoking.

Methods
The Medical Research Council Cognitive Function and Ageing Study (MRC CFAS) has been used to investigate the effect of changes in disability and total life, between groups with different smoking characteristics. MRC CFAS is a longitudinal population based cohort study of 13,004 participants aged 65 years and older interviewed in five centres in England and Wales who have been followed over a period for ten years from 1991-1993. All individuals are registered for death notification and have follow up until the end of December 2005. Individuals were classified smokers, ex-smokers and never smokers based on their status at age 60. Disability was measured at baseline, and at follow-up interviews at years two, six and ten. Transitions between no disability, disability and death were calculated using a discrete time Markov model using IMach.

Results
Mortality and disability were both associated with smoking history in both men and women at all ages with the effects of being an ex-smokers being intermediate to never smokers and current smokers. In men any smoking history was associated with a marked decrease in life expectancy, with current smokers having a similar life expectancy and healthy life expectancy to non-smokers who were 7 years older. In women, ex-smokers had similar

profiles to the lifelong non-smokers but current smokers had life expectancies similar to women 6 years older, though their healthy life was equivalent to those aged 4 years older.

Discussion
The results shown here suggest that even into old age smoking is associated with not only a decrease in life expectancy, but additionally an increase in life expectancy with disability. Smoking accelerates ageing in both men and women. Smoking should be considered for health intervention even at old age and potential benefits in society could outweigh the costs.

Estimating healthy life expectancy in the presence of non-ignorable dropout
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Given longitudinal data, continuous-time Markov models can be used to model transitions between healthy and unhealthy states prior to death. A typical model is the three-state illness-death model where state 1 denotes health, state 2 denotes ill health, and state 3 is the death state. Of interest is the subdivision of total life expectancy into life expectancy in health and ill health.

The situation that will be discussed is where individuals are measured at pre-scheduled interviews as in longitudinal cohort studies. Hence, transition times between the transient states are interval censored. Transitions time to death, however, are exact.

Dropout is very common in longitudinal data. In case the reason for dropout is related to variables of interest, ignoring the dropout might lead to biased inference. For example, it is possible that some individuals are not observed in the ill-health state, because their ill health prevents them from travelling to the centre where interviews take place. This is an example of non-ignorable dropout: the probability of observing the state depends on the state itself.

To deal with missing states, various Markov models will be discussed and the effect on the estimation of life expectancies will be illustrated by using longitudinal data from the MRC Cognitive Function and Ageing study. This study with 13,004 individuals aged 65 years and above in 1991 has followed them for twelve years of interview and for deaths until the end of December 2005. The illness of interest will be stroke. To explicitly model possible non-ignorable dropout, we use the selection model approach. This is a model that describes the joint distribution of both the state and the presence of an observation. By using a logistic regression model for the presence of an observation in a state, covariates that may be related to dropout can be taken into account.
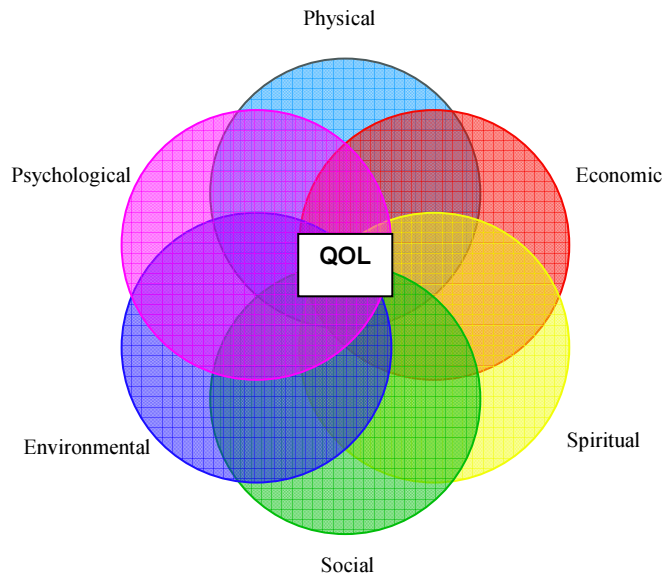
Improving well-being and Quality of Life (QOL) of Filipino older persons has to start with an understanding of what they mean by QOL. In the Philippine Elderly Study (UP Pop Inst 1996), most of those who felt that they had a poor health status were: women, rural residents, widowed/separated and those with low educational attainment. In the BSNOH survey of the NIH-DOH, using the question "Gaano kayo kakontento sa buhay niyo?" 75 percent of the respondents age 60 and above responded positively. Respondents 85 years and above had an 83 percent positive response rate. (BSNOH 2000) An earlier study of retirees in Lipa, Batangas showed that those living in this rural town felt they were better off than retirees in Manila. They were most concerned about their capacity to earn a living and the lack of leisure activities upon retirement. (Malabanan 1975)

The WHOQOL -100 is a generic measure of QOL that would be broadly applicable across diseases and cultures. The WHOQOL-BREF, an abbreviated 26-item version of the WHOQOL-100, was developed using data from the field-trial version. It exists in various translations. The WHOQOL-BREF was recently validated for Filipino Older persons. (de la Vega, S, WHOQOL-BREF FIL OP, 2005) Subjects in this study included 120 ambulatory, community-dwelling persons aged 60 years and older, from 4 communities of the National Capital Region of the Philippines. The translated and culturally adapted WHOQOL-BREF for Filipino older persons (WHOQOL-BREF FIL OP) was found to be internally consistent, with an overall alpha coefficient of 0.88, and domain values of >0.70. It had a very good concurrent validity, with domain scores correlating at 0.001 significance levels with general questions on quality of life, physical health and well-being. Factor analysis yielded four principal components or domains named as physical, psychological, social and environmental domains.

Socio-economic and work status were independent determinants of QOL. Of the 120 respondents, 119 rated their quality of life as moderate to good. The physical health domain had the highest rating and environmental domain scored the lowest. They were least satisfied with their finances and access to health care. Filipino older persons understand the concept of "kalidad ng buhay". The concept of "ganda ng buhay" also correlated well with "kalidad ng buhay" in this study, and may lend strength to the QOL tool if taken together. Filipino older persons understand the concept of quality of life and its Tagalog translation kalidad ng buhay. However, the Filipino older person has a domain structure and conceptual framework of quality of life that is different from adults in other countries. These differences are adequately explained by the Filipino culture and existing psychosocial and developmental theories.

How the older Filipino comprehends, assimilates, adapts and survives the many challenges of aging is not yet fully understood, and is thus not represented in this figure.

FIG. The New Conceptual Framework of Quality of Life for Filipino Older Persons

This study showed that the key to improving quality of life for Filipino older persons is to enable them to be able to better care for their families and communities through improvement of their financial status, the item that scored consistently the lowest in this survey.

Poverty is defined as a deprivation of essential assets that include but go beyond income. Alleviation of poverty therefore includes improvement of access to various assets. Improving the quality of life of older persons through increased employment opportunities beyond retirement age as emphasized in the recently passed RA 9257 (Expanded Senior Citizens Act 2003), allows for older persons' participation in nation-building and development. Improvement of health care access and provisions for a greater national health insurance system improves the human capital. Social capital comprises the social resources on which people are able to draw, through networks and connectedness and relationships of trust and reciprocity. It is the foundation of informal safety nets among the poor. (ADB 2005) Encouraging participation of older persons in family, community and national organizations such as senior citizen clubs, help improve the social capital among the poor older population. We also need to recognize that older persons are a rich, underutilized resource of human, financial and social capital.

Pension, health insurance, and improved access to health care for older persons are also essential to this population. The Philippine Society of Geriatric Medicine, the Committee on Aging-UP Manila-NIH, in collaboration with the DSWD, DOH, NAST, DOST and Filipino older persons, should work together in understanding and improving the quality of life of the aging populace.

Gender Differentials in Active Life Expectancy: The Case of Older Adults in Japan

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This study has two aims: (i) examine gender differentials in total and active life expectancy (ALE) among older adults in Japan and, (ii) account for these differentials using predictor variables that represent four domains often thought to intervene in the association between gender and health - behaviours, socioeconomic characteristics, psychological characteristics, social support. The latter domain may be of particular consequence given gender differences in intergenerational ties thought to shape relationships within Asian families. Active and inactive states are defined using Activities of Daily Living. Expected years of life and active life are examined by constructing multi-state life-tables, which employ probabilities of health and mortality transitions derived from hazard rate models. Preliminary results indicate older women in Japan spend more of remaining life in inactive states, and some their disadvantage is explained by factors representing intervening domains. The discussion will highlight the implications of our findings for an aging Japan.

Health Expectancy in the Netherlands

Stephanie Stam, Statistics Netherlands

Introduction: Health Expectancy (HE) is internationally recognized as a more sensitive indicator of population health than Life expectancy (LE) in itself. The combination of mortality rates with prevalences of disease or disabillity make HE a more meaningful indicator in a world where death is no longer the necessary outcome for a majority of diseases. Health however, is not evenly distributed among a population. It is known that significant health differences exist between different socioeconomic groups; the extent of socioeconomic differences in HE has not been investigated as thoroughly in the Netherlands.

Method: Although figures on socioeconomic differences in health have been available for many years in the Netherlands, the difficulty has been to reliably estimate population and mortality numbers per socioeconomic group. This study focused on educational level as an indicator of socioeconomic status. Educational level was divided into four groups for this purpose.
In order to calculate mortality per socioeconomic group, a semi-longitudinal approach was followed. Individual respondents on the Dutch Labour Force Survey from 1997 onward were coupled with the register of death in the years following the survey, thus creating an administrative follow-up. This procedure yielded approximately 30.000 cases of death. By combining information on educational level obtained through the Dutch Labour Force Survey with the date of a respondent's death, it was possible to calculate mortality rates per age group for each level of education. Prevalences of chronic diseases, physical disabilities and perceived unhealthiness were calculated for each educational level using the Dutch Health Interview Survey. Subsequently, the average HE for the 1997-2005 period was determined per socioeconomic group using Sullivan's method.

Lifetime in various health states among the oldest old in Denmark
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Background: Policy makers face increasing demand for care in the ageing society and need more knowledge about health status among a fast growing number of very old people. The purpose of the study was to quantify average lifetime in various health states among the oldest old in Denmark.

Methods: The Danish 1905 Cohort Survey comprising 2258 participants (63% of all survivors) were interviewed in 1998 and re-assessed in 2000, 2003 and 2005. Late lifetime in different states of self-rated health and physically independent and cognitively intact lifetime were estimated. Physical independence was defined as being able to get up from a chair and a bed, walk around the house, go to the toilet, and being cognitively intact as Mini-Mental State Examination score > 22.

Results: Average lifetime from age 92 to 100 was 2.7 years for men and 3.3 years for women of which almost half of the time was in self-rated good health. Lifetime of physical independence was 2.0 years for men and 2.4 years for women and for both sexes on average 1.1 years were spent in a state of physical independence without cognitive impairment.

Conclusion: Even at age 92-93 a substantial part of the remaining lifetime is spent in reasonably good health.

New Measurements for Disability
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The scope includes census or screening questions, ICF-based measures, global disability indicators, measurement of environmental or biological factors relevant to disability, broadening query beyond ADLs and IADLs, WHO and other international indicators.

On the use of eigenvalues of the correlation matrix of ADL variables in delimiting age brackets for the elderly population
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In the study of demographic aging and its supporting statistics there exists a previous question and an old paradigm: At which age does old-age begin? Relevant labor protests by the end of the 19th Century gave place to social security. An issue was to set an age at which physical and health conditions demand withdrawal from work and the need for a retirement pension. At that time 65 was established. At the beginning of the 21st Century

and after more than 100 years it is required to review concepts, significances and norms about aging.

1) The historical 65 and over to statistically delimit the elderly population is still widely used, although 60 and over is also a frequent figure. 2) The 20th Century was a period of plenty of advances and transformations in all fields of scientific and social endeavors including increases in life expectancies, higher longevity, better health conditions and enhancing physical and mental capacities. 3) The 21st century will carry even more spectacular achievements. Although progresses in longevity and life expectancy seem to have limits, big potentials exist to increase healthy and disability-free life expectancies. 4) Increases in life expectancies and better health are occurring almost globally. But there exists a big diversity of experiences, expectations and prospects all correlated with the grade of social and economic development. Variability is obvious between countries, but it is more acute between social groups within a nation, especially if it is not fully developed. 5) For practical reasons in terms of planning and the need of indicators, it becomes necessary to have new estimates of the thresholds of old age and descriptions of the process of aging that take into account changes in mortality levels, health conditions, disabilities and socioeconomic characteristics.

This paper presents a classification of age brackets for old age population related to ADL functioning by sex. This stratification uses not only functionality but also the rapidity of change towards disability estimated by the derivative of the prevalence function. Data comes from the survey sample of the Mexican Health and Aging Study in Mexico 2001 (MHAS-2001). The first smoothing of the observed prevalence of difficulties in five ADL comes from moving quotients, since attained ages x and x+1 have as a central point the exact age x+1. After this adjustment regressions were obtained to estimate prevalence for exact ages. Conditional probabilities between prevalence of ADL difficulties identify to what extent impairments in a specific ADL impacts on the other. Considering age also as a variable there exist high correlations. An analysis of principal components is applied to know the directions of the 6-dimensional space that explains most of the variance using the eigenvectors of the correlation matrix. This reduces the vector dimensionality and allows graphic depicting of regions of similarity by cluster analysis to define meaningful age brackets.

Public Health Impact of Interpersonal Violence: a mapping exercise
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The European project denominated *PHASE (Public Health Action for a Safer Europe),* in the context of the Public Health Programme 2006, aims at responding to the Commission's Communication to the European Council "Actions for a Safer Europe", which highlights the need for enhanced information exchange on the size, nature and societal impact of accidents and injuries and on the evidence of effective measures and good practices in injury prevention.

The Workpackage coordinated by the Health Unit 20 Verona, Italy and denominated "Public Health impact of interpersonal violence – a mapping exercise", addresses the issue of Interpersonal Violence with a public health perspective.

Four focus intervention areas have been identified: child, youth, elderly and intimate partners and four teams of European experts will carry out activities, such as:
a) a systematic inventory of studies and data through routine reporting systems and surveys by public health sectors, that provide information on injuries due to interpersonal violence in the 27 European member states;
b) collection of harmonized data reported through these schemes in collaboration with Health Institutions and WHO National Focal Points;
c) analysis of the resulting data in view of producing summary sheets, on the size and main causes of violence within the 27 European Countries;
d) identification of gaps and deficiencies in available information and relevant methodological issue, with proposals for resolving these issues developed in view of building a reliable and comprehensive information exchange on injuries due to violence in Europe. As regards the documentation of intervention programmes and strategies, the intervention will primarily focus on those programmes that are or have been initiated by the public health sector, or wherein the public health sector plays at least a major role.

The aim of this presentation is to illustrate the methodology of the project, have your feedback on this issue and investigate for potential collaborations.

Relationship between functional status (ADL and IADL) and WHODAS II disability among older Malaysians

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Objective: Malaysia's population are ageing as reflected in her demographic indicators. Malaysia will double the aged population 60 years and over in only 23 years and the median age of her population is increasing and will achieved the 30 year old cut off in 2023 (Tengku-Aizan et al, 2006). With increasing age, the probability of functional status decline will be high and this issue need to be discussed so that prevention of disability program could be developed and as such will reduce health care cost in the country. This paper investigates the relationship of the individual functional status items and the WHODAS II disability scores and development of model fit for the functional status.

Methods: The study utilises secondary data from the Mental Health and Quality of Life survey 2005 amongst older persons 60 years and above living in the community. Multistage sampling was adopted to achieve 2980 respondents with a 88% response rate. The full data set was used in the analysis. The functional status measurements were a combination of Barthel Index Activities of Daily Living, ADL (1963) and Lawton Brody Instrumental Activities of Daily Living Scale, IADL (1969) items. In the data set only 8 items WHODAS II were adopted. The disability distribution was converted according to ICF categories and later recoded into a dichotomous variable; without disability (mild and none) and with disability (moderate, complete and severe). Cross-tabulations and logistic regression were conducted between the individual functional status items and disability score.

Results: Less than 30% of the respondents reported WHODAS II disability. Significant positive correlations were noted in all functional status items with disability. However, only 7 variables [climbing stairs (r = 0.45), food preparation(r = 0.43), shopping (r = 0.49), financial management
(r = 0.43), housekeeping (r = 0.42), laundry (r = 0.44), and medications (r = 0.40)] showed rather strong positive correlations with disability. Two binary logistic regression

models were conducted for ADL and IADL variables. Both models are significant. The ADL model (Hosmer and Lemeshow Test χ^2 = 9.323, df =1, p= 0.002) only explained approximately 27% of the variance in disability while, 30% was noted in the IADL model (Hosmer and Lemeshow Test χ^2 = 10.93, df =2, p= 0.004). The odds of being disabled are higher for those who had problem climbing stairs (OR= 6.977), bathing (OR= 2.526), shopping (OR= 2.624), and laundry (OR= 1.508). These activities involve movement and mobility. In addition, respondents with problems in financial management (OR= 1.675) also indicated higher likelihood to be disable. Low educational background of the respondents might affect the cognitive ability of the respondent to manage their finances.
Conclusions: This survey shows that disability in older people in Malaysia is influence by mobility as it shown in the models. But in IADL the financial management item fitted the model, even though; it is not related to mobility. The study shows the correlations between WHODAS II and functional status. Further analysis is needed to clarify the relationship controlling the socio-demographic and economic background of the respondents.
Key words: Aged, functional status, WHODAS II, Malaysians

The Role of Education in the Health Transition: Evidence from the Belgian census

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The aim of this paper is to explore the relationship between educational attainment, longevity and health using an exceptionally large dataset where educational attainment and a limited set of questions on self-assessed health have been linked with mortality and migration data from the population register allowing a 39 month follow-up period of the Belgian census population. Given the importance of factors related to education in accounting for past gains in life expectancy, analysis on the relation between education, health and mortality in developed countries can shed further light on likely future developments and conditions of human longevity and morbidity at the end of life.
The analyses in the paper use data from the 2001 Belgian census. Apart from 'standard' information on household composition, educational attainment, professional status and housing characteristics, the 2001 Census also includes health questions that were not available in the earlier censuses. Three health questions have been used in the analysis.
The 2001 census data linked to the 2001-2004 mortality follow-up of the Belgian population allow for the analysis of the life table parameters (ex, lx, dx) by health indicators and educational attainment. Using several indicators of morbidity and disability the analysis supports the positive relationship between educational attainment and longevity but gives also an estimation on to what extend time spent in morbidity is compressed among the higher educated relative to groups with lower levels of educational attainment.

Severity of Diabetes and Active Life Expectancy
Sandra Reynolds, USF School of Aging Studies

In this study, we examine the impact of the severity of diabetes on the length and quality of life in older adults. Using the first three waves of the Asset and Health Dynamics Among the Oldest-Old (AHEAD) survey, estimates of total, active, and disabled life expectancy are calculated for a nationally representative sample of community-dwelling US adults age 70 and older. Disability is defined as presence of difficulty with at least Activity of Daily Living. Severity of diabetes is defined as: 1) self-report of having had a doctor ever having told the respondent they had diabetes, 2) having to take oral diabetes medication, and 3) having to inject insulin.

Results indicate that having self-reported diabetes decreases Total Life Expectancy by approximately 3.5 years and Active Life Expectancy by 3 years. For those who take oral diabetes medications, Total and Active Life Expectancy are decreased by approximately the same number of years, but for those who have to inject insulin, Total Life Expectancy is decreased by 5 years, virtually all of which consist of loss of Active years.

Limitations of the study include the nature of self-reported medical information, particularly when self-report of taking medications in either mode may not be the equivalent of being told to take these medications by a physician. However, when examining the impact of chronic diseases on Active Life Expectancy, severity of the condition can provide compelling information of interest both to practitioners and researchers.

Socioeconomic inequalities in Disability Free Life Years at age 25 in Belgium : The evolution between 1997 and 2004

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Objectives
To evaluate the evolution in inequalities by educational attainment in Disability Free Life Expectancy and life expectancy with disability at age 25 between 1997 and 2004.

Methods
Life expectancy (LE) by educational attainment was estimated using mortality data extracted from a 3 year follow-up of the 1991 and 2001 censuses. Prevalence rates of disability by severity (based on activity of daily life functions, mobility and sensorial functions) were obtained from the National Health Interview Surveys of the years 1997 and 2004. The Sullivan method was used to estimate the health expectancy indicators (Life Expectancy (LE), Disability Free LE (DFLE), LE with disability (LED). The variance of the health expectancy was estimated after the exclusion of the part due to mortality.

Results
Compared to the year 1997, in 2004 LE at age 25 has increased among males in all educational groups (Table). However this increase was higher for the highest educational level group compared to the lowest educational level group (2.14 years vs. 0.38 year). Similar pattern was observed for DFLE where the increase in the highest educational group

was 3.93 years compared to 1.56 years for the lowest educational level group. No significant change was observed for Life Expectancy with Disability. The change in inequalities between the years 1997 and 2004 for LE, DFLE and LE with disability (LED) were respectively +2.03, +1.56 and +0.48 years.

Among females at 25 years of age, we observe a different pattern. LE and DFLE increased for the highest educational level group (+2.24, +2.70 years), while they decreased for those in the lowest educational level group (-0.24, -4.33 years). Life Expectancy with Disability decreased (-0.47 years) for those in the highest educational level group, while Life Expectancy with Disability increased (+4.11 years) for those in the lowest educational level group.The change in inequalities between the years 1997 and 2004 for LE, DFLE and LED were respectively +2.47, +7.03, -4.58 years .

Table: Life expectancy (LE), Disability Free LE (DFLE), LE with disability (LED) at age 25 by gender and education, Belgium 1997-2004

Year	Education	LE	DFLE	LED
Males				
1997	Lowest	47.45	26.47	20.98
	Highest	52.68	43.47	9.21
	Difference	5.23	16.99	-11.77
2004	Lowest	47.83	27.75	20.08
	Highest	55.09	46.30	8.79
	Difference	7.26	18.55	-11.29
Females				
1997	Lowest	54.47	33.26	21.21
	Highest	57.69	44.26	13.43
	Difference	3.22	11.01	-7.78
2004	Lowest	54.24	28.93	25.32
	Highest	59.93	46.96	12.96
	Difference	5.69	18.04	-12.36

Conclusion
 This study suggests an increase in socioeconomic inequalities in LE and DFLE at age 25 between the year 1997 and 2004. This increase was more substantial for women.

Socioeconomic Status and Disability Trajectories in Later Life: The Role of Individual and Community Effects
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Studies of contextual or neighborhood effects are growing in the health literature but are still relatively rare for studies of older adults. Most of these studies still encompass one or two time points to situate the effects of place on the health and functioning of older adults. Using a decade of data from the Duke Established Populations for the Epidemiologic Studies

of the Elderly (EPESE), the authors examine which indicators of socioeconomic status, at both individual and contextual levels, matter most for trajectories of disability among older adults. The authors find that education is highly protective for disability over time at both the individual and neighborhood levels. After individual level controls are added to the models, the individual level effect of education is explained but the neighborhood level effect remains significant. Finally, the neighborhood SES effects on the intercept of the disability trajectory completely mediated by individual factor. However, neighborhood effects on the slope of disability remain significant, suggesting that neighborhood effects are lasting and measure a process of environmental advantage or disadvantage in later life. We conclude that neighborhood effects should be studied for longitudinal outcomes and that education is a robust predictor of disability in later life at both the individual and community levels. The gains of increased education, over and above those of income, housing, and working conditions, are discussed.

Trajectories in ADL disability among China's oldest-old

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As China experiences rapid population aging and as the numbers of oldest-old increase, there is concern about the potential burden of disability. Yet little is known about the extent to which older persons move between states of disability. Crimmins and Saito (1993) demonstrated clearly for the U.S. population that there is no one disability path that is experienced by all older people. Rather, individuals go through a variety of disparate trajectories, some remaining fully functional until the day they die, others experiencing onset followed by recovery from disability, and still others declining steadily until death. Tracking such disability paths is challenging. First, these investigations require multi-wave panel data, which have not been readily available in many developing countries. Second, summarizing multi-wave data and identifying typical trajectories of disability is not simple. In this study, we employ four waves of panel data from the China Longitudinal Healthy Longevity Survey, which begins with 8,805 Chinese that were aged 80 and older in 1998 and follows them until 2005. We estimate typical trajectories in ADL disability (specifically, bathing, dressing, feeding, toileting, and transferring) using an innovative technique that identifies patterns based on group-level trajectory analysis, which is a specialized application of finite mixture modeling. A SAS procedure developed by Daniel Nagin and colleagues (Jones, Nagin and Roeder, 2001) categorizes clusters of individuals based on similar ADL trajectories and then highlights the characteristics of individuals that follow these identifiable paths. In our application of the technique, we use a zero-inflated Poisson distribution of the count of number of ADL limitations reported. We model distinctive trajectories by age, sex, and proxy response, and account for drop-outs due to death. We conclude by commenting on the implications of our findings for China as it ages and on the usefulness of development trajectories for understanding better the course of disability among the oldest-old.

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Trends in Healthy Life Expectancy in Japan, 1986-2004

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The Japanese people have the longest life expectancy in the world. But are the long lives lived in good or poor health? What are the number of years and proportion of life lived in good versus poor health? What are the changes and trends over time? Using national cross-sectional data from seven-time points from 1986 to 2004, this paper computed healthy life expectancy measured by self-rated health by age-groups and sex using the Sullivan method. The results showed that while life expectancy continued a steady upward climb for all ages and both sexes, the trend in healthy life expectancy was less clear. The gains in life expectancy in the period prior to 1995 were mostly in years of good self-rated health, while the gains in life expectancy in the period after 1995 were in years of poor self-rated health. These trends applied to both men and women at all ages, except for women at age 85 where there was an almost continuous increase in the number of years in poor self-rated health throughout the observed period. The analyses of proportion of life lived in different health states suggested evidence of a trend of morbidity compression in the years before 1995, followed by an expansion of morbidity across all ages and for both men and women.

Using life expectancy to improve prediction of the numbers of demented people

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Objectives: To improve the precision of the future numbers of demented persons and provide a set of worldwide forecasts using mortality modeling.

Methods: A critical review of the published estimations of present and future numbers of demented persons.

Results: Several weaknesses have been identified in existing works and will be presented, along with an original solution. Namely, the existence of patterns for the chronological relationship between life expectancy and the prevalence of dementia at age 60+ in different time for a given country and for the cross sectional relationship for various regions of the world.

Discussion
Our working hypothesis is that changes in mortality levels (summarized by life expectancy) modify the differential in survival between demented and non demented people and impact on the age-specific prevalence rates of dementia. Different mortality levels may explain different age-specific prevalence rates among world regions. Differential survival – and age

variation in differential survival - may explain alternative age trajectories for the prevalence of dementia.

The ultimate advantage of this approach, focusing on mortality forecasts, is to better take into account the oldest old segment of the population which is the fastest growing one. Accordingly, the ongoing work consists in finding the best fitting statistical models linking prevalence indicators with life expectancy at different ages.

Variance Estimation Methods For Health Expectancy By Relative Socio-Economic Status
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In many studies, health expectancies (HE) by relative socio-economic status have been calculated but the estimation of confidence intervals and the performance of tests of significance for differences in HE between subpopulations have been impeded by lack of variance estimation methods. Also in most scenarios, the sampling designs of the surveys from which prevalence of ill-health conditions are obtained have been ignored.

This paper aimed at presenting variance estimation techniques such as the bootstrap and the delta method taking account of the survey design. The study suggests that using the raw survey data and the Delta method while accounting for the survey design, gives better estimates for the variance compared to the bootstrap method and therefore is a highly recommended method for variance estimation of HE by relative socio-economic status