

**A SELECTION OF TEN CURRENT READINGS ON TOPICS RELATED TO
DISABILITY ASSESSMENTS –**

Some available as free full-text and some requiring payment

Selection of readings made by A/Prof Goh Lee Gan

**READING 1 – VALUE OF MANAGING BEHAVIOURAL AND PSYCHOLOGICAL SYMPTOMS
(BPS) IN OLDER PERSON WITH COGNITIVE IMPAIRMENT**

Malhotra R (1), Chei CL (2), Østbye T (3), Chan A (4), Matchar DB (2). Older person behavioral and psychological symptoms (BPS) and functional limitations mediate the association between older person cognitive impairment and depressive symptoms in the caregiver. Arch Gerontol Geriatr. 2014 Mar-Apr;58(2):269-77. PMID: 24211024.

URL: <http://www.sciencedirect.com.libproxy1.nus.edu.sg/science/article/pii/S0167494313001623> -- payment required

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ABSTRACT

We assess for the mediation of the association between older person cognitive impairment and caregiver depressive symptoms through older person BPS and functional limitations, and whether the mediation varies by caregiver-older person relationship (spouse/adult child). Data for 1111 older person (aged 75+ with activity of daily living (ADL) limitation)-caregiver dyads from Singapore were used. The outcome variable was dichotomous (caregiver clinically significant depressive symptoms [CSDS]: yes/no) in the primary analysis and continuous (caregiver depressive symptoms score) in the sensitivity analysis. The causal steps approach assessed for the mediation of the association between older person cognitive impairment (yes/no) and the outcome variable through the two potential mediators. A bootstrapping approach calculated point estimates and confidence intervals (CIs) of the indirect (~mediated) effects. Variation of the indirect effects by caregiver-older person relationship was also assessed. In the primary analysis, the causal steps approach supported older person BPS and functional limitations as mediators. The bootstrapping approach confirmed both as significant mediators, though BPS (indirect effect odds ratio (OR) 1.32 [95% bootstrap CI 1.19,1.48]; %mediation: 70.6%) was a stronger mediator than functional limitations (1.04 [1.01,1.11]; %mediation: 11.5%). Variation of the indirect effects by caregiver-older person relationship was not supported. Results of the sensitivity analysis confirmed these results. We conclude that while caring for an older person with cognitive impairment is detrimental for the caregiver's mood, management of associated BPS and functional limitations, especially the former, among such older persons may reduce depressive symptoms among their caregivers. Spouse as well as adult child caregivers benefit.

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PMID: 24211024 [PubMed - indexed for MEDLINE]

READING 2 – PROJECTED NUMBER OF OLDER SINGAPOREANS WITH ADL LIMITATIONS IN 2030

Thompson J(I), Malhotra R, Love S, Ostbye T, Chan A, Matchar D. Projecting the number of older singaporeans with activity of daily living limitations requiring human assistance through 2030. Ann Acad Med Singapore. 2014 Jan;43(1):51-6. PMID: 24557466.

URL: <http://www.annals.edu.sg/pdf/43VolNo1Jan2014/V43N1p51.pdf> -- free full text

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ABSTRACT

Introduction: In the context of rapid population ageing and the increase in number of activity of daily living (ADL) limitations with age, the number of older persons requiring human assistance in Singapore is likely to grow. To promote informed planning for the needs of these elderly, we project the number of resident Singaporeans 60 years of age and older with 1 or more ADL limitations requiring human assistance through 2030. **Materials and Methods:** The proportion of community-dwelling older adults with ADL limitations requiring human assistance, stratified by gender and age group, was calculated utilising a recent nationally-representative survey of older Singaporeans. The proportion of older adults in nursing homes with ADL limitations was estimated based on available literature. Together, these prevalence estimates were applied to a simulation of the future population of older adults in Singapore to derive an estimate of the number of individuals with ADL limitations requiring human assistance through 2030. **Results:** By 2030, the number of resident Singaporeans aged 60 years or older with 1 or more ADL limitations requiring human assistance is projected to be 82,968 persons (7% of the total population aged 60 years or older). Of this number, 38,809 (47%) are estimated to have 1 or 2 ADL limitations, and 44,159 (53%) are estimated to have 3 or more. **Conclusion:** The number of elderly Singaporeans with activity limitations is expected grow rapidly from 31,738 in 2010 to 82,968 in 2030. Estimates of the number of older individuals with ADL limitations requiring human assistance are of value for policymakers as well as acute and long-term care capacity planners as they seek to meet demand for health and social services in Singapore.

PMID: 24557466 [PubMed - in process]

READING 3 – MORBIDITY AND DISEASE BURDEN REDUCTION APPROACH

Rojas-Rueda D (I), de Nazelle A, Teixidó O, Nieuwenhuijsen MJ. Health impact assessment of increasing public transport and cycling use in Barcelona: a morbidity and burden of disease approach. Prev Med. 2013 Nov;57(5):573-9. PMID: 23938465.

URL: <http://www.sciencedirect.com.libproxy1.nus.edu.sg/science/article/pii/S0091743513002739> - Payment required

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ABSTRACT

OBJECTIVE: Quantify the health impacts on morbidity of reduced car trips and increased public transport and cycling trips. **METHODS:** A health impact assessment study of morbidity outcomes related to replacing car trips in Barcelona metropolitan (3,231,458 inhabitants). Through 8 different transport scenarios, the number of cases of disease or injuries related to physical activity, particulate matter air pollution <2.5 µm (PM_{2.5}) and traffic incidents in travelers was estimated. We also estimate PM_{2.5} exposure and cases of disease in the general population. **RESULTS:** A 40% reduction in long-duration car trips substituted by public transport and cycling trips resulted in annual reductions of 127 cases of diabetes, 44 of cardiovascular diseases, 30 of dementia, 16 minor injuries, 0.14 major injuries, 11 of breast cancer and 3 of colon-cancer, amounting to a total reduction of 302 Disability Adjusted Life Years per year in travelers. The reduction in PM_{2.5} exposure in the general population resulted in annual reductions of 7 cases of low birth weight, 6 of preterm birth, 1 of cardiovascular disease and 1 of lower respiratory tract infection. **CONCLUSIONS:** Transport policies to reduce car trips could produce important health benefits in terms of reduced morbidity, particularly for those who take up active transportation.

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PMID: 23938465 [PubMed - indexed for MEDLINE]

READING 4 – PREVALENCE OF PHYSICAL DISABILITY IN COPD

Rodríguez-Rodríguez P, Jiménez-García R, Hernández-Barrera V, Carrasco-Garrido P, Puente-Maestu L, de Miguel-Díez J. Prevalence of physical disability in patients with chronic obstructive pulmonary disease and associated risk factors. COPD. 2013 Oct;10(5):611-7. PMID: 23844776.

URL: <http://informahealthcare.com/doi/abs/10.3109/15412555.2013.781150> – payment required

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ABSTRACT

INTRODUCTION: To analyze the prevalence of disability among patients with COPD as compared to people without this lung disease and to identify sociodemographic and health factors associated with these physical limitations.

METHODS: We performed a cross-sectional study based on data taken from the European Health Interview Survey for Spain (EHIS) 2009. The survey included adults aged 40 to 79 years (n = 13624). We identified patients with COPD using a direct question from the survey. The main study variable was disability, including basic activities of daily living (ADLs), instrumental activities (IADLs), and mobility disability (MD). Independent variables analyzed included socio-demographic characteristics, self-perceived health status, presence of mental disease and co-morbid chronic conditions and lifestyles.

RESULTS: The overall prevalence of self-reported COPD was 7.2%. The total prevalence of ADL, IADL and MD was higher among men suffering COPD than among the population without this disease (16.39% vs. 4.91%; 27.70% vs. 12.45%; 48.94% vs. 17.46% respectively). These significant differences were also observed among women with equivalent figures of: 23.25% vs. 8.71%; 31.03% vs. 10.53%; 64.83% vs. 34.08%. Being older, having a self-perceived health status of “fair/poor/very poor” and suffering from mental disease (anxiety and/or depression) were factors associated with a higher probability of reporting any disability in both men and women suffering from COPD.

CONCLUSIONS: Higher rates of disability were seen among COPD patients compared to the general population. Among COPD patients older age, depression, anxiety and worse self-rated health were associated with higher disability.

PMID: 23844776 [PubMed - indexed for MEDLINE]

READING 5 – BE ACTIVE EAT WELL PROGRAM

Moodie ML, Herbert JK, de Silva-Sanigorski AM, Mavoa HM, Keating CL, Carter RC, Waters E, Gibbs L, Swinburn BA. The cost-effectiveness of a successful community-based obesity prevention program: the be active eat well program. Obesity (Silver Spring). 2013 Oct;21(10):2072-80. PMID: 23554382.

URL: <http://onlinelibrary.wiley.com/doi/10.1002/oby.20472/pdf> - payment required

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ABSTRACT

OBJECTIVE: To examine the cost-effectiveness of Be Active Eat Well (BAEW), a large, multifaceted, community-based capacity-building demonstration program that promoted healthy eating and physical activity for Australian children aged 4-12 years between 2003 and 2006.

DESIGN AND METHODS: A quasi-experimental, longitudinal design was used with anthropometric data collected

at baseline (1001 children-intervention; 1183-comparator) and follow-up. A societal perspective was employed, with intervention resource use measured retrospectively based on process evaluation reports, school newsletters, reports, and key stakeholder interviews, and valued in 2006 Australian dollars (AUD). Outcomes were measured as Body Mass Index (BMI) units saved and Disability Adjusted Life Years (DALYs) averted over the predicted cohort lifetime, and reported as incremental cost-effectiveness ratios (with 95% uncertainty intervals).

RESULTS: The intervention cost AUD0.34M (\$0.31M; \$0.38M) annually, and resulted in savings of 547 (-104; 1209) BMI units and 10.2 (-0.19; 21.6) DALYs. This translated to modest cost offsets of AUD27 311 (-\$1803; \$58 242) and a net cost per DALY saved of AUD29 798 (dominated; \$0.26M).

CONCLUSIONS: BAEW was affordable and cost-effective, and generated substantial spin-offs in terms of activity beyond funding levels. Elements fundamental to its success and any potential cost efficiencies associated with scaling-up now require identification.

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PMID: 23554382 [PubMed - indexed for MEDLINE]

READING 6 – TRANSFER DOMAIN FALLS

Chin LF, Wang JY, Ong CH, Lee WK, Kong KH. Factors affecting falls in community-dwelling individuals with stroke in Singapore after hospital discharge. Singapore Med J. 2013 Oct;54(10):569-75. PMID: 24154582.

URL: <http://www.sma.org.sg/UploadedImg/files/SMJ/5410/5410a4.pdf> -- free full text

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ABSTRACT

INTRODUCTION: This study aimed to investigate the factors affecting the incidence of falls among individuals with stroke living in the community one year after discharge from a rehabilitation hospital in Singapore.

METHODS: A cross-sectional telephone survey of individuals with stroke living in the community was carried out one year after discharge. The interview covered aspects such as incidence and circumstances of fall, use of walking aids, and presence of environmental obstacles. Each participant's case record was retrospectively reviewed using discharge Fugl-Meyer (FM) assessment of the upper and lower limbs, functional independence measure (FIM) and Berg Balance Scale (BBS).

RESULTS: A total of 126 individuals with stroke were interviewed. Overall, 24% fell in the year following their discharge. Factors associated with falls were longer length of hospital stay, lower BBS and lower-limb FM scores, and lower discharge FIM scores for the Bladder and Bowel Management, Transfer, Mobility, Communication, and Social Cognition domains ($p < 0.05$). The fallers were more likely to use walking aids, and required help with basic activities of daily living after discharge ($p < 0.05$). Multivariate logistic regression analysis revealed that only the Transfer domain was an independent factor for falls.

CONCLUSION: Discharge FIM outcomes, especially for the Transfer domain, can be used to identify community-dwelling individuals with stroke who have a high fall risk after discharge. Identification of such individuals will enable early fall prevention management, which will in turn minimise fall events in the community.

PMID: 24154582 [PubMed - indexed for MEDLINE]

READING 7 – FATIGUE AS CAUSE OF REDUCED PARTICIPATION

Yang SY(I), Kong KH. Level and predictors of participation in patients with stroke undergoing inpatient rehabilitation. Singapore Med J. 2013 Oct;54(10):564-8. PMID: 24154581.

URL: <http://www.sma.org.sg/UploadedImg/files/SMJ/5410/5410a3.pdf> -- free full text

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ABSTRACT

INTRODUCTION: The level of participation is an important factor influencing rehabilitation outcome. However, few studies have evaluated rehabilitation participation and its clinical predictors in patients with stroke. This study aimed to establish the level of participation in patients with stroke undergoing inpatient rehabilitation, and define the clinical predictors for participation.

METHODS: This was a prospective observational study of first-time patients with stroke admitted to a rehabilitation centre over a 12-month period. The primary outcome measure was the level of rehabilitation participation as measured on the Pittsburgh Rehabilitation Participation Scale (PRPS). PRPS measurements were made one week after admission and one week before planned discharge from inpatient rehabilitation. Other outcome measures evaluated were the National Institute of Health Stroke Scale, Functional Independence Measure (FIM), Elderly Cognitive Assessment Questionnaire (ECAQ), Centre for Epidemiologic Studies-Depression Scale, Fatigue Severity Scale (FSS), Lubben Social Network Scale-Revised, and Multidimensional Health Questionnaire.

RESULTS: A total of 122 patients with stroke were studied. The mean PRPS score on admission was relatively high at 4.30 ± 0.90 , and this improved to 4.65 ± 0.79 before planned discharge ($p < 0.001$). On multivariate analysis, the mean PRPS score on admission was predicted by FIM, EACQ and FSS scores on admission, but not by variables such as age, gender, depression, social support, or health attitudes and beliefs.

CONCLUSION: Patients with lower levels of participation were more likely to be functionally dependent, cognitively impaired and have more fatigue. We suggest that in addition to cognition, fatigue should be routinely screened in patients with stroke undergoing rehabilitation.

PMID: 24154581 [PubMed - indexed for MEDLINE]

READING 8 – DEALING WITH OBESITY AND DIABETES AS ACCELERATORS OF FUNCTIONAL DECLINE

Anton SD (I), Karabetian C, Naugle K, Buford TW. Obesity and diabetes as accelerators of functional decline: can lifestyle interventions maintain functional status in high risk older adults? Exp Gerontol. 2013 Sep;48(9):888-97. PMID: 23832077; PMCID: PMC3817488.

URL: <http://www.ncbi.nlm.nih.gov.libproxy1.nus.edu.sg/pmc/articles/PMC3817488/> -- free full text

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ABSTRACT

Obesity and diabetes are known risk factors for the development of physical disability among older adults. With the number of seniors with these conditions rising worldwide, the prevention and treatment of physical disability in these persons have become a major public health challenge. Sarcopenia, the progressive loss of muscle mass and strength, has been identified as a common pathway associated with the initial onset and progression of physical disability among older adults. A growing body of evidence suggests that metabolic dysregulation associated with obesity and diabetes accelerates the progression of sarcopenia, and subsequently functional decline in older adults. The focus of this brief review is on the contributions of obesity and diabetes in accelerating sarcopenia and functional decline among older adults. We also briefly discuss the underexplored interaction between obesity and diabetes that may further accelerate sarcopenia and place obese older adults with diabetes at particularly high risk of disability. Finally, we review findings from studies that have specifically tested the efficacy of lifestyle-based interventions in maintaining the functional status of older persons with obesity and/or diabetes. © 2013.

PMCID: PMC3817488

PMID: 23832077 [PubMed - indexed for MEDLINE]

READING 9 – BMI CHANGE PATTERNS AND DISABILITY DEVELOPMENT IN ADULTS WITH DIABETES

Chiu CJ(1), Wray LA, Lu FH, Beverly EA. BMI change patterns and disability development of middle-aged adults with diabetes: a dual trajectory modeling approach. J Gen Intern Med. 2013 Sep;28(9):1150-6. PMID: 23463456; PubMed Central PMCID: PMC3744313.

URL: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3744313/> -- free full text

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ABSTRACT

BACKGROUND: Few longitudinal studies have examined associations between body mass index (BMI) changes in adults with diabetes and the development of disability. **OBJECTIVE:** To investigate association patterns between BMI and disability in middle-aged adults with diabetes.

DESIGN AND SETTING: Retrospective cohort design with data from the 1992-2006 Health and Retirement Study (HRS). A group-based joint trajectory method identified distinct BMI change trajectories and their link to subsequent disability trajectories.

PARTICIPANTS: U.S. nationally representative adults aged 51-61 who reported a diagnosis of diabetes in the 1992 HRS (N = 1,064).

MEASUREMENTS: BMI and self-reported disability score were the main variables. Sociodemographic, clinical, behavioral, and diabetes-related factors were also examined.

RESULTS: Four distinct weight trajectories (stable normal weight, 28.7 %; stable overweight, 46.2 %; loss and regain obese, 18.0 %; weight cumulating morbidly obese, 7.1 %) and three disability trajectories (little or low increase, 34.4 %; moderate increase, 45.4 %; chronic high increase, 20.2 %) best characterized the long-term patterns of BMI and disability change in middle-aged adults with diabetes. Adults in stable normal weight had the highest probability of being in the little/low increase disability group; however, one in five adults in that group progressed into chronic high disability, a higher proportion compared to the stable overweight group.

CONCLUSIONS: Although there were various ways in which the two trajectories were linked, the beneficial impacts of optimizing weight in adults with diabetes were supported. In addition, the complexity of diabetes control in those with relatively normal weight was highlighted from this study.

PMCID: PMC3744313 PMID: 23463456 [PubMed - indexed for MEDLINE]

READING 10 – DIABETES PREVENTION AND ROLE OF RISK FACTOR REDUCTION IN MEDICARE POPULATION

Koller EA (1), Chin JS, Conway PH. Diabetes prevention and the role of risk factor reduction in the Medicare population. Am J Prev Med. 2013 Apr;44(4 Suppl 4):S307-16. doi: 10.1016/j.amepre.2012.12.019. PubMed PMID: 23498292.

URL: <http://www.sciencedirect.com/science/article/pii/S0749379713000275> -- payment required

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ABSTRACT

Medicare is keenly aware of the secular changes in weight gain and of the nearly parallel increases in both the incidence and prevalence of type 2 diabetes throughout the U.S. population. The Medicare population, however, differs from the population at large because of its advanced age and frequency of comorbid conditions and/or disability. These factors affect life span as well as participation in and potential benefit from lifestyle modification and risk-factor reduction activities. Further, macrovascular disease is the greatest burden for older beneficiaries with diabetes, and its risks may antedate the appearance of hyperglycemia. Both diabetes prevention and treatment must be considered in this context. Medicare benefits focus on reduction of cardiovascular risk and mitigation of more temporally immediate complications of weight gain and glucose elevation. These preventive services and interventions are described.

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