

FPSC 90: GEP FPSC 2021 on Geriatric Care 2021 Update
Date: 6-7 March 2021 ; Time: 2.00 – 5.30pm, Via ZOOM
FAMILY PRACTICE SKILLS COURSE 90 – 10 READINGS
A SELECTION OF TEN CURRENT READINGS ON TOPICS RELATED TO
GERIATRIC CARE 2021 UPDATE

Some available as free full-text and some requiring payment

Selection of readings made by A/Prof Goh Lee Gan

READING 1 – LONG TERM COMPLICATIONS OF STROKE AND SECONDARY PREVENTION

Chohan SA(1), Venkatesh PK(2), How CH(3)(4). Long-term complications of stroke and secondary prevention: an overview for primary care physicians. Singapore Med J. 2019 Dec;60(12):616-620. PMID: 31889205.

URL: doi: 10.11622/smedj.2019158 (Free full text).

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ABSTRACT

Despite a decline in mortality from stroke, the annual incidence in the general population is increasing. For many stroke survivors and their families, the acute stroke is the beginning of an ongoing struggle with physical impairment and subsequent disability. Over time, the immediate clinical consequences of the stroke are complicated by a variety of lesser-known medical, musculoskeletal and psychosocial difficulties. The primary care physician is best positioned to optimise chronic disease control, reduce risk and manage complications of stroke. Early screening and appropriate management are key. Instituting secondary prevention and attention to bowel and bladder problems can help reduce medical complications and re-admissions, while adequate analgesia, positioning/splinting of limbs and physiotherapy can lessen discomfort and preventable suffering. Primary care physicians can identify and treat post-stroke mood issues and involve psychological counselling for patients and caregivers. Adequate education and support may restore the independence of patients with stroke or minimise any resultant dependency.

READING 2 – PREHABILITATION BEFORE SURGERY MAY BE MORE EFFECTIVE

Kow AW(1). Prehabilitation and Its Role in Geriatric Surgery. Ann Acad Med Singap. 2019 Nov;48(11):386-392.PMID: 31960020.

URL: PMID: 31960020 (Free full text).

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ABSTRACT

As the world's population ages rapidly, many elderly people are living to a much more advanced age than before. Consequently, medical conditions that require surgical interventions such as solid organ cancers are also getting more common. While young and fit patients may be able to withstand surgical stresses and recover rapidly after operation, older adults may find these challenging. Rehabilitation that is instituted in the postoperative period aims to help patients regain physical fitness and robustness to preoperative levels. However, recent studies have shown that prehabilitation may be more effective in bringing the fitness level of elderly patients to a higher level before they go for surgery. There are many controversies regarding the effectiveness of prehabilitation, the components of this intervention-be it mono- or multimodalities-and the duration of prehabilitation. This paper looks at the current evidence of this hot topic on geriatric surgery.

READING 3 – DELIVERING PATIENT CENTRED CARE IN PARKINSON'S DISEASE. CHALLENGES AND CONSENSUS FROM INTERNATIONAL PANEL

Bhidayasiri R(1), Panyakaew P(2), Trenkwalder C(3), et al. Delivering patient-centered care in Parkinson's disease: Challenges and consensus from an international panel. *Parkinsonism Relat Disord.* 2020 Mar;72:82-87. doi: 10.1016/j.parkreldis.2020.02.013. PMID: 32146380.

URL: doi: 10.1016/j.parkreldis.2020.02.013. PMID: 32146380 (Payment required).

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ABSTRACT

An international panel of movement disorders specialists explored the views and perceptions of people with Parkinson's disease (PD) about their condition and its treatment, including the potential mismatch between the clinician's view of the patient's condition and their own view of what aspects of the disease most affect their daily lives. The initiative was focused on Asian countries, so participants comprised experts in the management of PD from key centers in Asia, with additional insight provided by European and the North American movement disorders experts. Analysis of peer-reviewed publications on patient perceptions of PD and the factors that they consider important to their well-being identified several contributing factors to the mismatch of views, including gaps in knowledge of PD and its treatment, an understanding of the clinical heterogeneity of PD, and the importance of a multidisciplinary approach to patient care. The faculty proposed options to bridge these gaps to ensure that PD patients receive the personalised treatment they need to achieve the best possible outcomes. It was considered essential to improve patient knowledge about PD and its treatment, as well as increasing the awareness of clinicians of PD heterogeneity in presentation and treatment response. A multidisciplinary and shared-care approach to PD was needed alongside the use of patient-centered outcome measures in clinical trials and clinical practice to better capture the patient experience and improve the delivery of individualised therapy.

READING 4 – BASELINE HAND GRIP STRENGTH AND MORTALITY

Malhotra R(1), Tareque MI(2), Tan NC(3), Ma S(4). Association of baseline hand grip strength and annual change in hand grip strength with mortality among older people. *Arch Gerontol Geriatr.* 2020 Jan-Feb;86:103961. doi: 10.1016/j.archger.2019.103961. PMID:31704626.

URL: doi: 10.1016/j.archger.2019.103961. PMID:31704626 (Payment required).

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ABSTRACT

BACKGROUND: Clinicians have increasing access to longitudinal data on hand grip strength (HGS), often measured for frailty or sarcopenia assessment, of their older clients. Evidence on the association of change in HGS with mortality is mixed. We investigated whether baseline hand grip strength (HGS) and annual change in HGS is associated with mortality among older Singaporeans.

METHODS: Data from a national longitudinal survey (three waves: 2009, 2011 and 2015) of older people (≥ 60 years) in Singapore was utilised. All-cause mortality, until end-December 2015, was assessed primarily from administrative databases. Two datasets, with 4446 (Dataset 1: baseline HGS with mortality) and 2673 (Dataset 2: annual change in HGS with mortality) participants, with maximum follow-up time of 7 and 4.6 years respectively, were derived from the survey data. Associations of interest were assessed using Cox proportional hazard models.

RESULTS: 835 (18.8 percent) and 317 (11.9 percent) participants died during follow-up, with mean survival times of 3.6 and 2.6 years, in Dataset 1 and 2 respectively. The likelihood of mortality was lower by four percent (Hazard Ratio [95 percent Confidence Interval]: 0.96 [0.94-0.97]) for each unit (kilogram) increase in baseline HGS, and by 13 percent (0.87 [0.82-0.93]) for each kg increase in HGS over one-year.

CONCLUSIONS: Higher (alternatively, lower) baseline HGS and an increase (alternatively, decrease) in HGS over one-year were associated with lower (alternatively, higher) likelihood of all-cause mortality among community-dwelling older people. There is clinical value, for assessing the risk of mortality, of both the cross-sectional and longitudinal measurement of HGS among older people.

READING 5 – 2019 CONSENSUS UPDATE ON SARCOPENIA DIAGNOSIS AND TREATMENT

Chen LK(1), Woo J(2), Assantachai P(3), et al. Asian Working Group for Sarcopenia: 2019 Consensus Update on Sarcopenia Diagnosis and Treatment. J Am Med Dir Assoc. 2020 Mar;21(3):300-307.e2. doi: 10.1016/j.jamda.2019.12.012. PMID:3203382.

URL: doi: 10.1016/j.archger.2019.103961. PMID:31704626 (Payment required).

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ABSTRACT

Clinical and research interest in sarcopenia has burgeoned internationally, Asia included. The Asian Working Group for Sarcopenia (AWGS) 2014 consensus defined sarcopenia as "age-related loss of muscle mass, plus low muscle strength, and/or low physical performance" and specified cut-offs for each diagnostic component; research in Asia consequently flourished, prompting this update. AWGS 2019 retains the previous definition of sarcopenia but revises the diagnostic algorithm, protocols, and some criteria: low muscle strength is defined as handgrip strength <28 kg for men and <18 kg for women; criteria for low physical performance are 6-m walk <1.0 m/s, Short Physical Performance Battery score ≤ 9 , or five-time chair stand test ≥ 12 seconds. AWGS 2019 retains the original cut-offs for height-adjusted muscle mass: dual-energy X-ray absorptiometry, <7.0 kg/m² in men and <5.4 kg/m² in women; and bioimpedance, <7.0 kg/m² in men and <5.7 kg/m² in women. In addition, the AWGS 2019 update proposes separate algorithms for community vs hospital settings, which both begin by screening either calf circumference (<34 cm in men, <33 cm in women), SARC-F (≥ 4), or SARC-CalF (≥ 11), to facilitate earlier identification of people at risk for sarcopenia. Although skeletal muscle strength and mass are both still considered fundamental to a definitive clinical diagnosis, AWGS 2019 also introduces "possible sarcopenia", defined by either low muscle strength or low physical performance only, specifically for use in primary health care or community-based health promotion, to enable earlier lifestyle interventions. Although defining sarcopenia by body mass index-adjusted muscle mass instead of height-adjusted muscle mass may predict adverse outcomes better, more evidence is needed before changing current recommendations. Lifestyle interventions, especially exercise and nutritional supplementation, prevail as mainstays of treatment. Further research is needed to investigate potential long-term benefits of lifestyle interventions, nutritional supplements, or pharmacotherapy for sarcopenia in Asians.

READING 6 – PREVALENCE OF SARCOPENIA IN PRE-FRAIL COMMUNITY DWELLING OLDER ADULT AND CASE FINDING

Lim JY(I), Low NA(I), Merchant RA(I). Prevalence of sarcopenia in pre-frail community dwelling older adult and utility of SARC-F, SARC-CalF and calf circumference in case finding. J Frailty Sarcopenia Falls. 2020 Sep 1;5(3):53-56. doi: 10.22540/JFSF-05-053. eCollection 2020 Sep. PMID:32885101

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ABSTRACT

OBJECTIVE: To determine the prevalence of sarcopenia in the pre-frail community dwelling older adults based on the Asian Workgroup for Sarcopenia (AWGS 2019) criteria. In addition, the utility of case finding using the SARC-F, SARC-CalF and calf circumference on impact of prevalence was explored.

METHODS: 75 older adults ≥ 65 years old were recruited between October 2019 and March 2020. The algorithms of AWGS 2019 were applied retrospectively to pre-frail participants recruited for an intervention study in primary care setting. In addition to demographics, SARC-F, calf circumference (CC), muscle mass, grip strength, gait speed, five-time chair stand timing and short physical performance battery test (SPPB) were measured, to determine sarcopenia using AWGS 2019. SARC-CalF was determined using SARC-F and CC.

RESULTS: The prevalence of sarcopenia based on AWGS 2019 algorithm was 16.0 percent, possible sarcopenia 73.3 percent and severe sarcopenia 12.0 percent. Using SARC-F for case finding reduced the overall prevalence of sarcopenia to 4.0 percent, possible sarcopenia to 12.0 percent and severe sarcopenia to 4.0 percent. Positive percentage agreement of case finding criteria of SARC-F, SARC-CalF and calf circumference for sarcopenia was 33 percent, 42 percent and 58 percent respectively.

CONCLUSIONS: Using the AWGS 2019 without case finding, the prevalence of sarcopenia was 16 percent. However, using SARC-F for case finding underestimated prevalence in this group by 75 percent. Utility of SARC-F for case finding in pre-frail requires further evaluation.

READING 7 – NUTRITION MEDIATES THE RELATIONSHIP BETWEEN OSTEOSARCOPENIA AND FRAILTY

Chew J(I)(2), Yeo A(2), Yew S(2), Tan CN(2), Lim JP(I)(2), Hafizah Ismail N(I)(3), Lim WS(I)(2). Nutrition Mediates the Relationship between Osteosarcopenia and Frailty: A Pathway Analysis. Nutrients. 2020 Sep 27;12(10):2957. doi: 10.3390/nu12102957. PMID: 3299254.

URL: doi: 10.3390/nu12102957. PMID: 3299254 (Free full text).

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ABSTRACT

Osteosarcopenia is associated with increased risk of adverse outcomes such as falls and fractures. Its association with frailty is less well-described, particularly in independent community-dwelling older adults. Although nutrition plays a crucial role in maintaining bone and muscle health, the complex relationship between osteosarcopenia and nutrition in the pathogenesis of frailty remains to be elucidated. In this cross-sectional analysis of 230 independent, community-dwelling individuals (mean age 67.2 ± 7.4 years), we examined the associations between osteosarcopenia with nutritional status and frailty, and the mediating role of nutrition in the association between osteosarcopenia and frailty.

Osteosarcopenia was defined as fulfilling both the Asian Working Group for Sarcopenia 2019 consensus definition (low relative appendicular skeletal muscle mass adjusted for height, in the presence of either of either low handgrip strength or slow gait speed) and T-score ≤ -2.5 SD on bone mineral densitometry. We assessed frailty using the modified Fried criteria and nutrition using the Mini-Nutritional Assessment. We performed multiple linear regression, followed by pathway analysis to ascertain whether nutrition mediates the relationship between osteosarcopenia and frailty.

Our study population comprised: 27 (11.7 percent) osteosarcopenic, 35 (15.2 percent) sarcopenic, 36 (15.7 percent) osteoporotic and 132 (57.4 percent) normal (neither osteosarcopenic, sarcopenic nor osteoporotic). Osteosarcopenia ($\beta = 1.1$, 95 percent CI 0.86-1.4) and sarcopenia ($\beta = 1.1$, 95 percent CI 0.90-1.4) were significantly associated with frailty, but not osteoporosis. Nutrition mediated the association between osteosarcopenia and frailty (indirect effect estimate 0.09, bootstrap 95 percent CI 0.01-0.22).

In conclusion, osteosarcopenia is associated with frailty and poorer nutritional status, with nutrition mediating the association between osteosarcopenia and frailty. Our findings support early nutritional assessment and intervention in osteosarcopenia to mitigate the risk of frailty.

READING 8 – FRAILTY AND HEALTHCARE UTILISATION AMONG COMMUNITY-DWELLING ADULTS IN SINGAPORE

Ge L(1), Yap CW(2), Heng BH(2), Tan WS(2)(3). Frailty and healthcare utilisation across care settings among community-dwelling older adults in Singapore. BMC Geriatr. 2020 Oct 6;20(1):389. doi: 10.1186/s12877-020-01800-8.PMID:33023490.

URL: doi: 10.1186/s12877-020-01800-8.PMID:33023490 (Free full text).

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ABSTRACT

BACKGROUND: Frailty is frequently found to be associated with increased healthcare utilisation in western countries, but little is known in Asian population. This study was conducted to investigate the association between frailty and healthcare utilisation in different care settings among community-dwelling older adults in Singapore.

METHODS: Data from a population health survey among community-dwelling adults were linked with an administrative database to retrieve data of healthcare utilisation (including government primary care clinic visits, specialised outpatient clinic visits, emergency department visits, day surgery and hospitalisations) occurred during a six-month look-back period and six-month post-baseline respectively. Baseline frailty status was measured using the five-item FRAIL scale, which was categorised into three groups: robust (0), pre-frail (1-2), and frail (3-5). Negative binomial regression was applied to examine the association between frailty with respective healthcare utilisation (dependent variables), controlling for other confounding variables.

RESULTS: In our sample of 701 older adults, 64.8 percent were of robust health, 27.7 percent were pre-frail, and 7.6 percent were frail. Compared to the robust group, frail individuals had a higher rate of specialised outpatient clinic visits (incidence rate ratio (IRR): 2.8, 95 percent confidence interval (CI): 1.2-6.5), emergency department visits (IRR: 3.1, 95 percent CI: 1.1-8.1), day surgery attendances (IRR: 6.4, 95 percent CI: 1.3-30.9), and hospitalisations (IRR: 6.7, 95 percent CI: 2.1-21.1) in the six-month period prior to the baseline and in subsequent six months (IRR: 3.3, 95 percent CI: 1.6-7.1; 6.4, 2.4-17.2; 5.8, 1.3-25.8; 13.1, 4.9-35.0; respectively), controlling for covariates.

CONCLUSIONS: Frailty was positively associated with the number of specialised outpatient clinic visits, emergency department visits, day surgeries and hospitalisations occurred during six months prior to and after the baseline. As frailty is a potentially reversible health state with early screening and intervention, providing preventive activities that delay the onset or progression of frailty should have potential effect on delaying secondary and tertiary care utilisation.

READING 9 – OLDER PERSONS WITH SARCOPENIA ARE RESPONSIVE TO THE EFFECTS OF MULTIDOMAIN LIFESTYLE INTERVENTIONS

Lu Y(1), Niti M(2), Yap KB(3), Tan CTY(1), et al. Assessment of Sarcopenia Among Community-Dwelling At-Risk Frail Adults Aged 65 Years and Older Who Received Multidomain Lifestyle Interventions: A Secondary Analysis of a Randomized Clinical Trial. JAMA Netw Open. 2019 Oct 2;2(10):e1913346. doi: 10.1001/jamanetworkopen. 2019.13346. PMID: 31617926.

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ABSTRACT

IMPORTANCE: There is little understanding of the outcomes associated with active lifestyle interventions for sarcopenia among older persons.

OBJECTIVE: To determine the association of six-month multidomain lifestyle interventions (physical exercise, nutritional enhancement, cognitive training, combined treatment, and standard care) with change in sarcopenia status and physical function among adults 65 years and older.

DESIGN, SETTING, AND PARTICIPANTS: Post hoc secondary analysis of a parallel-group randomised clinical trial conducted from September 1, 2012, to September 1, 2014, at community centers providing services to elderly individuals in Singapore. Participants included a subsample of 92 community-dwelling prefrail or frail older persons with sarcopenia aged 65 years and older. Data were analysed from June 1, 2017, to January 1, 2018.

INTERVENTIONS: The five intervention groups were a six-month duration of physical exercise that included resistance and balance training, nutritional enhancement with a commercial oral nutrition supplement formula, cognitive training, a combination of the preceding three interventions, and standard care (control).

MAIN OUTCOMES AND MEASURES: Primary outcomes were changes in sarcopenia status and its components, appendicular skeletal muscle index (ASMI), knee extension strength (KES), and gait speed (GS) at three months and six months following the intervention. Sarcopenia was defined as the presence of both low ASMI and low KES and/or GS.

RESULTS: In 92 participants with sarcopenia, the mean (SD) age was 70.0 (4.7) years and 59 (64.1 percent) were female. Seventy-eight participants received active interventions and 14 received standard care. Of 92 total participants, the number who remained sarcopenic was reduced to 48 (of 73) after three months and 51 (of 75) after six months of intervention, indicating that 25 of 92 participants (27.2 percent) experienced sarcopenia reduction at three months and 24 of 92 (26.1 percent) had sarcopenia reduction at six months. Low KES was present in 88 of 92 patients (95.6 percent), and low GS in 30 of 92 patients (32.6 percent) at baseline. Among the components of sarcopenia, GS had the greatest change associated with active interventions, with 22 of 30 participants (73.3 percent) free of low GS at six months; in comparison, 17 of 88 participants (19.3 percent) were free of low KES at six months and 7 of 92 participants (7.6 percent) were free of low ASMI

at six months. Men experienced a greater reduction in sarcopenia than women ($\chi^2=5.925$; $P=.02$), as did those with younger age ($t=-2.078$; $P=.04$) or higher ASMI (mean [SD] ASMI, 5.74 [0.77] vs 5.14 [0.77] kg/m²; $P=.002$). Participants in the active intervention group experienced statistically significant decreases in sarcopenia score and its components at three months and six months from baseline ($F=14.138$; $P<.001$), but the intervention was not associated with significant differences in ASMI, KES, and GS vs standard care.

CONCLUSIONS AND RELEVANCE: This study suggests that older persons with sarcopenia are responsive to the effects of multidomain lifestyle interventions. Sarcopenia reduction was most pronounced through improved gait speed, and occurred more among those who were male, were younger, or had greater muscle mass.

READING 10 – RESOLVE RISK FACTORS FOR RECURRENT FALLS

Ang GC(1), Low SL(1), How CH(2)(3). Approach to falls among the elderly in the community. Singapore Med J. 2020 Mar;61(3):116-121. doi: 10.11622/smedj.2020029. PMID: 32488276.

URL: doi: 10.11622/smedj.2020029. PMID: 32488276 (Free full text).

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ABSTRACT

One in three community-dwelling elderly aged ≥ 65 years and one in two aged > 80 years will have at least one fall within a year. Many elderly people are 'silent fallers' who do not report the fall nor seek medical assistance unless they are injured. In Singapore, falls account for 40 percent of injury-related deaths.

Unaddressed risk factors for falls lead to recurrent falls and poor quality of life. Elderly people who have experienced falls and near falls can have a fear of falling, post-fall anxiety syndrome, depression and reduction in activities, with a negative impact on their well-being.

Primary care doctors can screen and optimise modifiable risk factors such as poor vision, balance, poor gait, motor weakness, joint disorders, psychotropic drugs, sedatives, anti-hypertension medications, choice of footwear and environment factors.

Timely referrals for cataract operations, balance and strengthening exercises, and osteoporosis treatment can reduce the risk of falls and injurious outcomes.