associated with frailty is less well studied. We investigated the extent to which socioeconomic factors at individual and area level are associated with frailty in two studies of older populations in the UK.

Methods Data are from two studies of older populations: the British Regional Heart Study (BRHS) comprised a socially representative sample of men (n=1622) from 24 British towns aged 71–92 years in 2010–12; the English Longitudinal Study of Ageing (ELSA) comprised a representative sample of older men and women (n=5344) aged ≥60 years in 2004 from England. Using the Fried phenotype, frailty was defined by the presence of ≥3 of the following components: unintentional weight loss, low grip strength, low physical activity, slow walking pace and exhaustion. Socioeconomic measures included occupational social class and area-level deprivation was based on the Index of Multiple Deprivation (IMD). Logistic regressions models were used.

Results Prevalence of frailty was 19% and 9% in the BRHS and ELSA populations respectively. In the BRHS sample, the risk of frailty increased from the highest (social class I) to lowest social class V; age-adjusted odds ratio was 1.18 (95% confidence interval (CI)=1.07–1.31) for each category from social class I to V, which remained significant on adjustment for smoking, history of cardiovascular disease (CVD) or diabetes, body mass index (BMI) and alcohol consumption. The risk of frailty also increased from the least (quintile 1) to most deprived IMD quintile (quintile 5); OR per quintile=1.19 (95% CI 1.08 to 1.30). This increased risk remained significant on further adjustment for covariates. Similarly, in the ELSA population of older men and women, frailty risk was greater in lower social classes (OR=1.21 (95% CI 1.16 to 1.27) for each group from highest to lowest social classes. Frailty risk was greater also in deprived quintiles (OR=1.35, 95% CI 1.28 to 1.43, for every increase in quintile of deprivation). These associations remained significant on adjustment for covariates.

Conclusion Adverse socioeconomic factors are associated with risk of frailty in older populations. These associations were independent of lifestyle factors and comorbidities, and were observed both for individual and area-level socioeconomic factors. Socioeconomic factors are potentially important in reducing the burden of frailty in older people. These findings merit further investigation prospectively.

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Ageing and mental health

OP26 **TEMPORAL TRENDS IN MULTI-MORBIDITY AND HOW IT IMPACTS EMPLOYMENT AMONG OLDER ADULTS IN CANADA AND ENGLAND: UNDERSTANDING GENERATIONAL AND SOCIAL INEQUALITIES**

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Background In most countries policy makers are seeking to raise the age at which people become eligible for state pensions due to population aging. Aging societies are also characterised by an increase in the number of people are living with chronic conditions and multi-morbidity which can affect employment later in life. This study examines the prevalence of multi-morbidity by age, birth-cohort, and socioeconomic status before assessing the impact that this has on employment status for workers approaching retirement age. It presents a comparative analysis of the UK and Canada and discusses the different policies that each have adopted regarding older workers with chronic conditions.

Methods We estimate the prevalence of multi-morbidity (composed of 6 broad categories of disease) for those aged between 50 and 64, by sex, educational level, and by two birth cohorts: the silent generation (pre-1946) and the baby boomers (1946–1964), using the Health Survey for England and the Canadian Community Health Survey. The prevalence of each condition and the changes in specific comorbidities between the generations were estimated. Finally, the association between multi-morbidity on the employment status (in employment or not) is assessed. Each of the analyses uses logistic regression models.

Results Prevalence of multi-morbidities has increased between generations, particularly for the lower educated in England and higher educated groups in Canada. As the number of conditions increased the probability of being in employment decreased. While employment rates are similar for people with no-conditions in the UK and Canada there was a more negative impact of having more than one condition in the UK. For example, silent generation women with a low education in the England with 3+ conditions were much less likely to be employed than women with no health conditions (odds ratio of 0.095 (0.071–0.128), whilst the effect was lower for low educated silent generation women in Canada 0.318 (0.235–0.431)). The consequences of multi-morbidity for employment was found to be similar between generations. The increase in multi-morbidities may have led to reduced employment prospects particularly amongst the less educated groups in England.

Conclusion Many countries are facing the challenge of an aging population. The effect of multi-morbidity on employment for older workers has been understudied even though it presents a set of challenges which risk exacerbating existing social inequalities because they are concentrated among less advantaged groups and associated with reduced employment prospects. The research presented here suggests that different policy approaches might be effective in ameliorating these inequalities.

OP27 **PSYCHOLOGICAL FACTORS ASSOCIATED WITH STANDING BALANCE PERFORMANCE AT AGE 69 IN A BRITISH BIRTH COHORT STUDY**

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Background Balance ability from midlife has been consistently shown to predict future health outcomes including mortality, morbidity and falls risk. Evidence has identified socioeconomic, behavioural and anthropometric contributors to balance, however there is little evidence on the role of psychological factors. We aimed to examine the associations between five psychological factors – stressful life events, symptoms of anxiety and depression, wellbeing, mastery and fear of falling – and standing balance performance at age 69.

Methods Up to 2113 participants from the MRC National Survey of Health and Development, a British cohort study followed since birth in 1946, were included in analyses. Stressful life events, including divorce and death of a loved one, between ages 36 and 60–64 were counted (max score: 32). Mastery (Pearlin Mastery Scale), symptoms of anxiety and depression (General Health Questionnaire-28), wellbeing (Warwick-Edinburgh Mental Wellbeing Scale) and fear of falling (yes/no) were ascertained at age 68. Standing balance was assessed at age 69 using the one-legged stand test with eyes closed (max: 30 seconds). Linear regression models were used to examine associations between each psychological factor and log-transformed balance in sex and fully-adjusted models. Adjustments were made for height, body mass index, socioeconomic position, physical activity, smoking history, osteoarthritis, diabetes, cardiovascular events and presence of respiratory symptoms at age 68–69.

Results In sex-adjusted models, all five psychological factors were associated with balance performance; these associations were maintained after adjustment for covariates. In fully-adjusted models: for every additional stressful life event, individuals had a 2% (95% CI 0.3% to 3%) decrease in balance time; there was a 2% (1%–2%) increase in balance time for every 1 point increase in mastery; for every SD increase in depressive symptoms and wellbeing, there was a 5% (2%–8%) decrease and 5% (2%–9%) increase in balance time respectively; those who reported fear of falling had 17% (9%–25%) lower balance time when compared with those who had no fear.

Conclusion Experiencing a greater number of stressful life events, greater levels of anxiety and depression, lower wellbeing, lower mastery and fear of falling were all associated with poorer balance performance at age 69. These associations were robust to adjustment for a wide range of potential confounders. This suggests that psychological factors may be suitable targets for intervention aimed at reducing balance impairments in older adults. Future research should consider how these psychological factors interrelate and if they operate on similar pathways.

OP28 | COMMUNITY CULTURAL ENGAGEMENT AND INCIDENT DEPRESSION IN OLDER ADULTS

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Background 1 in 4 older adults in the UK is affected by depression, which is associated with a range of physical health outcomes. So there is a recognised need to identify behavioural interventions that might protect against the development of depression. Over the past decade, research has demonstrated the effects of community cultural engagement (which combines a number of protective factors including social interaction, cognitive stimulation and gentle physical activity) on the treatment of depression. This has included studies on active cultural engagement (such as singing, dancing and crafts) and receptive cultural engagement (including visiting museums and galleries). But as yet there is little research on community cultural engagement and prevention of depression. Consequently, this study aimed to explore whether cultural engagement in older adults is associated with a reduced risk of developing depression over the following decade.

Methods This study used data from the English Longitudinal Study of Ageing: specifically data from Wave 2 (2004/2005) across every biennial wave through to Wave 7 (2014/2015); a total of 6 waves and a decade of data. We selected individuals who had no indication of depression at baseline using the Centre for Epidemiologic Studies Depression Scale (CES-D; score of <3) and used logistic regression models to explore the odds of developing depression at any wave over the following 10 years in relation to how often people engaged in community cultural activities (including visiting museums/galleries, attending the theatre/concerts/opera, and going to the cinema). For all analyses, we controlled for all identified socio-demographic confounders, health confounders (including sensory impairment, chronic conditions and pain) and social confounders (including other forms of social/civic engagement).

Results There was a dose-response relationship between frequency of cultural engagement and the risk of developing depression independent of socio-demographic, health-related and social confounders. This equated to a 34% lower risk of developing depression for people who attended every few months (OR=0.66, 95% CI 0.46 to 0.96, p=0.03) and a 50% lower risk for people who attended once a month or more (OR=0.5, 95% CI 0.33 to 0.76, p=0.001). Results were robust for sensitivity analyses exploring reverse causality and alternative CES-D thresholds.

Conclusion The results presented here suggest that cultural engagement is an independent risk-reducing factor for the development of depression in older age. In light of these data, it is suggested that behavioural intervention studies are designed to test further whether community cultural engagement can causally decrease the risk of developing depression.

OP29 | A MEASURE TO IMPROVE ASSESSMENT AND MANAGEMENT OF SYMPTOMS AND CONCERNS OF PEOPLE WITH DEMENTIA IN CARE HOMES: DEVELOPMENT AND MIXED METHODS EVALUATION

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Background Detection and management of physical symptoms and psychosocial concerns for people with dementia is essential to reduce suffering. Measures used in routine care can support assessment and change care processes to improve outcomes. We aimed to develop and conduct a feasibility and process evaluation of the mechanisms of action (MOA), acceptability and implementation requirements of the Integrated Palliative Care Outcome Scale for Dementia (IPOS-Dem) to improve comprehensive assessment and management of symptoms and concerns of residents with dementia in care homes.

Methods A mixed methods interventional design informed by the MRC framework and underpinned by a theoretical model of expected MOA. Study conducted in three care homes involving residents with dementia, family, care staff and health professionals. IPOS-Dem V1 was developed from the validated IPOS through a scoping review of symptoms and concerns common in dementia. Two sequential phases followed. Phase