the spatial restriction prohibiting tobacco retail within 50m from school areas.

Methods Tobacco retailers (n=19,413) were extracted from a web-scrapped Points of Interest database in 2019. Using GIS analysis, for all public schools (n=1483) across Shanghai, the distribution of tobacco retailers around the main entrance of public schools were calculated using the number and proportion of tobacco retailers within 5 and 10-min walking road network distances around public schools. The degrees of clustering of tobacco retailers within 5 and 10-min walking distances from public schools were determined using multitype K-function. The non-compliance with spatial restriction was examined using the proportion of public schools with at least one tobacco retailer around. The stratified analysis was also carried out by types of schools, levels of urbanity, and school deprivation, and types of tobacco retailers.

Results Within 10-min walking distance, 95.8% of public schools were exposed to tobacco retail, 59.99% of all tobacco retailers were in the vicinity of a school. Greater proportions of tobacco retailers were found around primary schools (45.9%) and schools in more urbanised areas (97.3%). Significant spatial clustering of tobacco retailers was found around public schools within 5 and 10-min walking distance with higher degrees of clustering around high schools and secondary schools, while the clustering pattern of tobacco retailers around public schools was insignificant in more urbanised areas. 5.87% of public schools were exposed to non-compliant tobacco retailers. A greater proportion of primary schools (6.8%) were found with non-compliant tobacco retailers compared to high schools (3.98%) and secondary schools (2.1%). 12.19% of public schools in more urbanised areas were exposed to non-compliant tobacco retailers. Differences in levels of school deprivation were insignificant. Among types of tobacco retailers around school areas, the convenience store was the most available type.

Conclusion Tobacco retail availability within walking distances from public schools of Shanghai was high, particularly in more urbanised areas. The current spatial restriction on tobacco retail around public school areas is proving insufficient to protect adolescents.

OP72 THE ROLE OF SOCIOECONOMIC DISPARITIES IN COGNITIVE AGEING: A CROSS-COUNTRY COMPARISON BETWEEN ENGLAND AND CHINA

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10.1136/jech-2021-SSMabstracts.72

Background In the context of rapidly ageing populations worldwide, this study aims to investigate a cross- country comparison of the relationship between various socioeconomic markers such as education, household wealth, and urbanicity with cognitive decline over 8 years in England and China.

Methods We used data from 7,200 adults aged 50+ from the English Longitudinal Study of Ageing (ELSA) and Chinese Health and Retirement Longitudinal Study (CHARLS), national representative samples of English and Chinese populations. ELSA and CHARLS are similar in their study design and have comparable measures at each wave. For these analyses, we used the available data spanning over 8 years across ELSA wave 5 (20010/11) to wave 9 (2018/19); and CHARLS waves 1 (2011) to 4 (2018). The outcome was the change in memory assessed over time using immediate and delayed 10-word recall tests (max score 20) over 4 waves at every two-year follow-up within each of the two cohorts. We measured socioeconomic status at baseline, including individual-level (education and wealth) and area-based characteristics (urban/rural) with similar comparable measures within each cohort. Educational attainment was similarly classified into three categories: below A-level, A-levels or equivalent, and university degree. Total housed wealth was classified into quintiles. The associations between each SES marker and cognitive decline over an 8-year follow-up were examined by linear mixed models assessed comparatively within each country.

Results In English adults, we found a significant protective association between higher levels of education and baseline memory (intercept beta (β) =7.8, standard errors (SE)=0.15) with a β =1.9, SE=0.9 higher memory scores for those with vocational training and β =2.9, SE=0.2 for those with a degree. A slower decline in memory over time was observed for those with intermediary education β =0.6, SE=0.2 independent of all covariates. These associations were similar across countries but with more robust protections for those with intermediate levels of education in the Chinese population compared to England. Lastly, there was a significant positive association between living in an urban area and higher baseline memory with β =0.9, SE=0.6 and slower memory decline over time β =0.6, SE=0.1, particularly in China, but not in England. No associations were found with the level of wealth.

Conclusion These results imply that a socioeconomic advantage in terms of higher education at the individual level was associated with a slower memory decline over almost a decade both in England and China, with a most pronounced difference in participants living in rural China. Public health strategies for preventing cognitive decline should target socioeconomic gaps to reduce health disparities and protect those particularly disadvantaged.

Friday 17 September

Inequalities, 13.00 - 15.30

OP73 LOCAL HOUSING SERVICES SPENDING AND PREMATURE MORTALITY IN ENGLAND: A LONGITUDINAL ECOLOGICAL STUDY*

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10.1136/jech-2021-SSMabstracts.73

Background The UK 2008 financial crisis led to austerity measures being introduced in the UK, severely affecting local government. Cuts to central government funding have led to reduced income for spending on local services that potentially promote health, such as housing services. Housing services include a variety of critical services targeted at providing homelessness prevention and relief. There is an extensive body of evidence demonstrating an association between housing, homelessness and poor health. We investigate whether those areas that experienced a greater decline in housing services

expenditure, also experienced more adverse trends in premature mortality.

Methods We carried out a longitudinal ecological analysis using data on housing services net expenditure in 146 upper tier local authorities in England between 2013 and 2018, linked to all-cause premature mortality rate (deaths under 75 years) for males and females. To analyse local authority expenditure on housing services we utilised Revenue Outturn data provided by the Ministry of Housing, Communities & Local Government; data on premature mortality was acquired from Public Health England. We used an instrumental variable approach to investigate this relationship to address model endogeneity. We used central government funding allocated to local authorities as an instrument because we expect it to influence health through its impact on levels of service expenditure but not influence health outcomes directly. We analysed the relationship between housing services spending and mortality using two-stage least squares linear regression with robust clustered standard errors and fixed area and time effects. We also adjusted for time-varying confounding effects of local economic conditions. We calculated our models with alternative specifications to test the robustness of our findings.

Results Average expenditure per person on housing services decreased from £41 in 2013 to £30 in 2018. Each £10 per person reduction was associated with a 17.6 increase in premature mortality rate for males (95% CI: 2.1 to 33.0) and 12.6 in females (95% CI: 2.1 to 23.1). Over the six-year period, reductions in spending were associated with 8,900 additional premature deaths (95% CI: 1,200 to 16,500).

Conclusion Reduction in spending for housing services may in part explain recent adverse trends in mortality in England. Investment in housing and homelessness support is likely to have a positive impact on health outcomes. Limitations of this study include restricting the time period of analysis to after 2013 due to changes in local government funding policy, and the reliance on area-level mortality data calculated over 3-year periods.

OP74 WHAT CAN THE HEALTH OF NURSES TELL US ABOUT INEQUALITIES?

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10.1136/jech-2021-SSMabstracts.74

Background Unfair and avoidable inequalities in health, observed for decades, are pervasive and persistent in the United Kingdom and beyond. Policies that aim to reduce inequalities, or at least improve population health in the last decade have focused disproportionately on individual or behavioural factors, with little positive effect. Studying the health of a socioeconomically homogenous sample of Nurses, with intuitively preferential individual characteristics like high levels of education, can serve as a counterfactual – what would our health, and inequalities by deprivation, look like if we all had similar characteristics?

Methods Individual-level records (n = 478,802) from the nationally representative ONS (England & Wales) and Scottish Longitudinal Studies, linked to an adjusted UK-comparable measure of small-area deprivation have been used to compare self-rated health and inequalities in samples of economically active Nurses and Non-Nurses. Descriptive and correlational statistics have been used to assess the relative homogeneity of Nurses to Non-Nurses as well as wider trends in self-rated health and inequalities based on small-area deprivation. In addition, a logistic regression model was built to estimate the effect of Nurses status on self-rated health whilst adjusting for area deprivation and other potential confounders.

Results Nurses are older, predominantly female and are more socioeconomically homogenous than Non-Nurses measured on individual characteristics such as occupational social class or highest level of education. Nurses are more likely than Non-Nurses to live in the least deprived areas (45% vs. 41%) and report *Very Good* Self-Rated Health (59% vs. 52%). A social gradient by area deprivation exists for those reporting *less than good* health in both Nurses (Least deprived – 8%, Most deprived – 10%) and Non-Nurses (Least – 9.9%, Most – 18.4%). However, at each level of deprivation Nurses are less likely to report *less than good* health than Non-Nurses. A logistic regression model, adjusting for demographic characteristics & area deprivation found that the odds of reporting *good or better* health for Nurses was 1.33 (SLS - 95% CI 1.19 – 1.49) and 1.41 (ONS LS - 95% CI 1.32 – 1.52) times that of Non-Nurses.

Conclusion Nurses report better self-rated health than Non-Nurses and this persists even after adjustment for socioeconomic and demographic differences. This finding is consistent with analysis showing preferential health behaviours in UK Nurses. However, a social gradient by area deprivation still exists, even for a population with preferential individual socioeconomic characteristics.

OP75 MAPPING UK POLICIES AND STRATEGIES RELEVANT TO CHILD AND MATERNAL HEALTH TO IDENTIFY OPPORTUNITIES FOR UPSTREAM EVALUATIONS: INITIAL FINDINGS FROM THE MATERNAL AND CHILD HEALTH NETWORK (MATCHNET)

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10.1136/jech-2021-SSMabstracts.75

Background Interventions to tackle the social determinants of health can improve outcomes during pregnancy and early childhood, leading to better health across the life-course. Variation in content, timing, and implementation of policies across the 4 UK nations holds great potential for quasi-experimental evaluations. We aimed to adapt systematic review methods to identify UK policies that potentially affect maternal and child health across the social determinants of health framework; and determine suitable candidates for quasi-experimental evaluation using administrative data.

Methods A systematic search strategy comprised open keyword (i.e. 'child', 'child health', 'child and maternal health') and category searches of UK Government websites (e.g. Children and Families, Education, Health and Social Care, Welfare) and extensive hand searching of existing policy reviews until