Appendix 1

List of outcomes

All outcomes were operationalized in the way that they captured either a particular disease or poor health status, or they captured the worst categories as far as our statistical models would allow.

General health and access to healthcare outcomes:

Physical health problems were assessed by asking the respondent "Which of the health problems on this card have you had or experienced in the last 12 months? Response options were: 1) heart or circulation problem; 2) high blood pressure; 3) breathing problems such as asthma attacks, wheezing or whistling breathing; 4) allergies; 5) back or neck pain; 6) muscular or joint pain in hand or arm; 7) muscular or joint pain in foot or leg; 8) problems related to your stomach or digestion; 9) problems related to a skin condition; 10) severe headaches; 11) diabetes. The respondent was then asked "And which of the health problems you had or experienced in the last 12 months hampered (i.e. limited or restricted in daily activity) you in your daily activities in any way?" The outcome used for hampering physical health problems was operationalized present if the respondent had responded yes to being hampered by one or more of the 11 physical health problems, and absent if the respondent did not report having any of the 11 physical health problems or did not report being hampered by any of them.

Cancer was assessed by asking the respondent "Do you have or have you ever had any of the health problems listed on this card? The card showed six possible cancers: 1) cancer affecting any part of the body; 2) leukaemia; 3) malignant tumour; 4) malignant lymphoma; 5) melanoma, 6) carcinoma, or other skin cancer. If yes, is that currently or previously? Response options were "yes, currently"; "yes, previously"; "no, never". Cancer was operationalized as present if the respondent responded "yes, currently", and absent if any of the two remaining options.

Obesity was assessed by first asking the respondent "What is your height without shoes?" and "What is your weight without shoes?" The BMI was calculated using the standard formula (BMI=weight/((height/100) x (height/100)). Obesity was operationalized as present if a respondent had a BMI of 30 or above, and absent if below 30.

Self-rated health was assessed by asking the respondent "How is your health (physical and mental health) in general?" Response options were 1) very good, 2) good, 3) fair, 4) bad, 5) very bad. Poor self-rated health was operationalized as present if the respondent had responded "bad" or "very bad", and absent if any of the remaining categories.

Healthcare utilization was assessed by asking the respondent "In the last 12 months, were you ever unable to get a medical consultation or the treatment you needed for any of the reasons listed on this card? Possible reasons were that the respondent "Could not pay for it", "Could not pay for it", "Had other commitments", "Needed treatment was not available in local area or nearby", "The waiting list was too long", "There were no appointments available", or "Other reason". Having been unable to get needed medical consultation or treatment was operationalized as present if the respondent had answered "yes" to any of the reasons, and absent if the respondent had not experienced being unable to get a needed medical consultation or treatment.

Health behavior outcomes:

In terms of tobacco consumption, the respondent was asked "Now thinking about smoking cigarettes, which of the descriptions listed on this card best describes you smoking behaviour (i.e. cigarettes, rolled tobacco, but not pipes, cigars or electronic cigarettes)? Options were 1) I smoke daily; 2) I smoke but not every day; 3) I don't smoke now but I used to; 4) I have only smoked a few times; 5) never smoked. Status as current smoker was operationalized as present if the respondent answered either "I smoke daily" or "I smoke but not every day", and absent if the respondent answered any of the remaining possibilities.

In terms of frequency of binge drinking, the respondent was asked "This card shows six different examples of how much alcohol people might drink on a single occasion. In the last 12 months, how often have you drunk this amount of alcohol or more on a single occasion? The amount of alcohol considered as binge drinking as shown on the card differed from country to country according to country-specific guideline, and in all cases differed for men and for women as well. Response categories were as follows: 1) daily or almost daily; 2)

weekly; 3) monthly; 4) less than monthly; 5) never. Binge drinking was operationalized as present if respondents answered "daily", "weekly", or "monthly", and absent if respondents answered "less than monthly" or "never".

In terms of sport/physical activity, the respondent was asked "On how many of the last 7 days did you walk quickly, do sports or other physical activity for 30 min or longer?" No sport or physical activity was operationalized as present if the respondent had not engaged in any sports or physical activity within the last week, and absent if the respondent had engaged in sports or physical activity at least one day within the last week.

In terms of diet, respondents were asked "how often you eat fruit, excluding drinking juice?" and "how often you eat vegetables or salad, excluding potatoes?" Response options were 1) three times or more a day; 2) twice a day; 3) once a day; 4) less than once a day but at least 4 times a week; 5) less than 4 times a week but at least once a week; 6) less than once a week; 7) never. Poor diet was operationalized as present if the respondent answered "less than once a week" or "never" to both questions, and absent for all other possibilities.

In terms of sedentary behaviour, the respondent was asked "On an average weekday, how much time, in total, do you spend watching television?" Response options were: 1) no time at all, 2) less than ½ hour, 3) ½ hour to 1 hour, 4) more than 1 hour, up to1½ hours, 5) more than 1½ hours, up to 2 hours, 6) more than 2 hours, up to 2½ hours, 7) more than 2½ hours, up to 3 hours, 8) more than 3 hours. Sedentary behaviour was operationalized as present if the respondent answered "more than 3 hours", and absent for all other answers.

Mental health outcomes:

Depressive symptomatology was assessed using the Center for Epidemiological Studies-Depression (CES-D) scale. The European Social Survey (ESS) used the short 8-item version of the CES-D scale. Participants are asked to indicate on a 4-point scale how often in the past week they have felt in accordance with 8 different statements pertaining to negative affect, including "You felt depressed," "You felt that everything you did was an effort," "Your sleep was restless," and "You felt sad." The 8-item CESD-D has been validated using data from the ESS (1), and a cut-point of 9 and above on the 8-item CES-D score was used to identify those with clinically significant symptoms of depression (2). Cronbach's alpha for the 8 items in our dataset was 0.83.

In terms of life satisfaction, respondents were asked "All things considered, how satisfied are you with your life as a whole nowadays? Please answer using this card (11-point scale), where 0 means extremely dissatisfied and 10 means extremely satisfied". Poor life satisfaction was operationalized as present when the respondent answered "0", "1", or "2", i.e. the three lowest categories, and absent for all other responses.

In terms of happiness, respondents were asked "Taking all things together, how happy would you say you are?" A response scale was used similar to the one used for life satisfaction, where 0 meant extremely unhappy and 10 meant extremely happy. Unhappiness was operationalized as present when the respondent answered "0", "1", or "2", i.e. the three lowest categories, and absent for all other responses.

To capture loneliness specifically, one item from the CES-D scale was used. Respondents were asked to indicate the extent to which they "felt lonely" during the past week. Response options were: 1) none of almost none of the time, 2) some of the time, 3) most of the time, 4) all or almost all of the time. Loneliness was operationalized as present if the responded answered "most" or "all" of the time, and absent for all other categories.

In terms of feelings of safety in local area, respondents were asked "How safe do you – or would you - feel walking alone in your local area or neighbourhood after dark? Do – or would – you feel…" Answer response were: 1) very safe, 2) safe, 3) unsafe, 4) very unsafe. Feeling unsafe was operationalized as present if the respondent answered "unsafe" or "very unsafe", and absent for the remaining two categories.

Social well-being and functioning outcomes:

Social interaction with friends, relatives, and colleagues was assessed by asking respondents "how often do you meet socially (i.e. by choice rather than for reasons of either work or pure duty) with friends, relatives or work colleagues?" Response options were: 1) never, 2) less than once a month, 3) once a month, 4) several times a month, 5) once a week, 6) several times a week, 7) every day. Lack of social interaction was operationalized as present if respondents answered "never" or "less than once a month", and absent for all other categories.

The number of close social ties was assessed by asking respondents "How many people, if any, are there with whom you can discuss intimate and personal matters ('intimate' implies things like sex or family matters; 'personal' could include work or occupational issues as well)? Response options were: 1) none, 2) one, 3) two, 4) three, 5) four-six, 6) 7-9, 7) 10 or more. Social isolation was operationalized as present when the respondent answered "none", and absent for all other categories.

Social trust was assessed with three items: "would you say that most people can be trusted, or that you can't be too careful (i.e. need to be wary or always somewhat suspicious) in dealing with people?"; "do you think that most people would try to take advantage of you (i.e. exploit or cheat) if they got the chance, or would they try to be fair (i.e. treat appropriately and straightforwardly)?"; and "Would you say that most of the time people try to be helpful or that they are mostly looking out for themselves?" For each item, a response scale of 0 (minimum trust) to 10 (maximum trust) was used. Cronbach's alpha for the three items in the dataset was 0.75. The mean of the three scores was calculated, and the three lowest categories were used (i.e. a mean score of 2 and below) to indicate social distrust, with all other scores indicating absence of social distrust.

Having had a divorce or a civil union dissolved was operationalized if respondents answered yes to the question "have you ever been divorced or had a civil union dissolved?", and absent if they answered no.

Missing data:

All statistical models were based on the sample with no missing data (complete case analysis), and the proportion of missing data within the study sample (N=35,475) were as follows: childhood adversity 2.28%; adulthood SED 0.08%; age 0.18%; gender 0.00%; parental occupation 0.00% (see methods section); parental education 0.00% (see methods section); country 0.00%; physical health problems 1.36%; cancer 0.95; obesity 3.04%; self-rated health 0.10%; respondent unable to get medical consultation or treatment 0.65%; smoker status 0.14%; binge drinking 1.23%; sport/physical activity 1.16%; fruit and vegetable consumption 0.25%; sedentary behavior 0.17%; depression 1.98%; life satisfaction 0.28%; happiness 0.34%; loneliness 0.43%; feelings of safety in local area 1.02%; social interaction 0.31%; social isolation 0.87%; social trust 1.03%; divorce or civil union dissolved 0.56%.

CA prevalence by age groups

	Financial strain or conflict in childhood family			
Age group	No strain	Strain only	Conflict only	Both	Total
14-25	3,685	217	335	181	4,418
	83.41	4.91	7.58	4.10	100.00
26-44	8,123	819	778	556	10,276
	79.05	7.97	7.57	5.41	100.00
45-64	8,936	1,175	715	619	11,445
	78.08	10.27	6.25	5.41	100.00
65+	6,095	1,707	284	394	8,480
	71.88	20.13	3.35	4.65	100.00
Total	26,839	3,918	2,112	1,750	34,619
	77.53	11.32	6.10	5.06	100.00

References:

1. Karim J, Weisz R, Bibi Z, ur Rehman S. Validation of the eight-item center for epidemiologic studies depression scale (CES-D) among older adults. Current Psychology. 2015;34(4):681-92.
2. Briggs R, Carey D, O'Halloran A, Kenny R, Kennelly S. Validation of the 8-item Centre for Epidemiological Studies Depression Scale in a cohort of community-dwelling older people: data from The Irish Longitudinal Study on Ageing (TILDA). European Geriatric Medicine. 2018;9(1):121-6.