

Associations of Childhood, Adult Socioeconomic Status with Health Outcomes among Middle-Aged and Older Chinese

Zhongda Li (李重达) zhongdali@pku.edu.cn
Institute of Population Research, Peking University, Beijing, China

Aims

Socioeconomic status (SES) has great influence on health. Most previous research mainly focuses on effects of adult SES but disadvantage experienced in childhood is also related to high disease levels in later life. Transition in SES over the life course might counteract the effect of childhood SES on health in later life. The aim of this study was 1) to examine the effects of childhood, adult SES on several health outcomes; 2) to test the effects of social mobility in terms of rural-urban residence and intergenerational education among middle-aged and older Chinese.

Methodology

This study is based on data from the first wave of China Health and Retirement Longitudinal Study (CHARLS, <http://charls.pku.edu.cn>), a nationally representative sample of Chinese adults aged 45 and over. Regression models were used to estimate the associations of childhood, adult SES, and social mobility with the following health outcomes: **self-rated health**, **chronic disease status**, **cognitive function**, and **ADL/IADL** (Activities of daily living / Instrumental activities of daily living) disability.

Conclusions

- Childhood socioeconomic status has long-term effects on later life health, and achieved status in adult exerts additional health impacts.
- The strength of the effects of childhood socioeconomic status varies in different measures of health, with strong associations found with self-rated health, cognitive function, and ADL/IADL disability and no associations with chronic disease status.
- The effects of adult conditions do not mediate the effects of childhood conditions on health outcomes except for ADL/IADL disability, which indicates that childhood socioeconomic status may be directly associated with self-rated health and cognitive function in later life, while may affect ADL/IADL disability through an indirect mechanism.
- Health-related behaviors have marginal explanatory power for the effects of SES.
- The results on social mobility show that social mobility and health in later life are linked in complex ways.

Results

Table 1 Descriptive statistics

Variables	Self-rated Health	Chronic Disease	Cognitive Function	ADL/IADL Disability
Number of individuals	14257	13732	11641	14266
Childhood socioeconomic conditions				
Birthplace%				
Rural	89.93	89.79	88.25	89.92
Urban	10.07	10.21	11.75	10.08
Father's education%				
Illiterate	63.86	63.64	61.65	63.85
Primary school	29.78	29.94	31.44	29.79
Junior high school and above	6.36	6.42	6.91	6.36
Adult socioeconomic conditions				
Current residence (ref: rural)				
Urban				
Rural	60.46	60.28	56.75	60.44
Urban	39.54	39.72	43.25	39.56
Respondent's education%(ref: Illiterate)				
Illiterate	27.82	27.57	23.83	27.81
Primary school	39.18	39.13	39.39	39.19
Junior high school and above	33.00	33.30	36.78	33.00
Household per capita income %				
Low	25.93	25.90	24.04	25.94
Middle low	25.30	25.14	24.65	25.30
Middle high	24.52	24.49	24.97	24.52
High	24.25	24.46	26.35	24.25
Total household wealth%				
Low	25.35	25.23	23.67	25.35
Middle low	24.96	24.86	23.99	24.97
Middle high	24.92	24.84	25.06	24.91
High	24.77	25.06	27.28	24.77
Insurance coverage%				
No	6.43	6.34	6.26	6.43
Yes	93.57	93.66	93.74	93.57
Demographic variables				
Mean age	59.47	59.47	59.01	59.47
Gender%				
Male	47.86	47.98	49.36	47.86
Female	52.14	52.02	50.64	52.14
Marital status%				
Married	87.36	87.46	88.40	87.35
Not married	12.64	12.54	11.60	12.65
Health behaviors variables				
Smoking%				
Never smoked	60.40	60.39	59.93	60.41
Ever smoked but currently quit	8.94	8.95	9.20	8.94
Currently smoke	30.66	30.66	30.87	30.64
Drinking%				
Drink in the past year	67.54	67.53	66.72	67.54
Not drink in the past year	32.46	32.47	33.28	32.46
Activity participation%				
No	50.20	50.37	48.20	50.21
Yes	49.80	49.63	51.80	49.79

Table 2 Ordered logistic regression coefficients of self-rated health for childhood and adult socioeconomic conditions

Variables	Model 1	Model 2	Model 3
Childhood socioeconomic conditions			
Birthplace (ref: rural)			
Urban	-0.387*** (0.052)	0.018 (0.058)	0.041 (0.058)
Father's education (ref: Illiterate)			
Primary school	-0.194*** (0.035)	-0.075* (0.036)	-0.063 (0.036)
Junior high school above	-0.364*** (0.066)	-0.212** (0.067)	-0.191** (0.067)
Adult socioeconomic conditions			
Current residence (ref: rural)			
Urban		-0.122** (0.037)	-0.133*** (0.037)
Respondent's education (ref: Illiterate)			
Primary school		0.024 (0.042)	0.020 (0.042)
Junior high school above		-0.190*** (0.050)	-0.178*** (0.051)
Household per capita income (ref: Low)			
Middle low		-0.126** (0.044)	-0.123** (0.044)
Middle high		-0.246*** (0.046)	-0.234*** (0.046)
High		-0.515*** (0.049)	-0.495*** (0.049)
Total household wealth (ref: Low)			
Middle low		-0.219*** (0.045)	-0.211*** (0.045)
Middle high		-0.368*** (0.046)	-0.367*** (0.046)
High		-0.637*** (0.049)	-0.630*** (0.049)
Insurance coverage (ref: No)			
Yes		0.117 (0.065)	0.134 (0.065)
Demographic variables			
Age	0.026*** (0.002)	0.020*** (0.002)	0.017*** (0.002)
Gender (ref: Male)			
Female	0.365*** (0.032)	0.341*** (0.034)	0.231*** (0.046)
Marital status (ref: Married)			
Not married	-0.006 (0.050)	-0.083 (0.051)	-0.075 (0.051)
Health behaviors variables			
Smoking (ref: Never smoked)			
Ever smoked but currently quit			0.442*** (0.064)
Currently smoke			0.053 (0.046)
Drinking (ref: Not drink in the past year)			
Drink in the past year			-0.450*** (0.039)
Activity Participation (ref: No)			
Yes			-0.240*** (0.032)
N		14257	

Cut-points are omitted in table for parsimony

*p<0.05; **p<0.01; ***p<0.001

Table 3 Logistic regression coefficients of chronic disease for childhood and adult socioeconomic conditions

Variables	Model 1	Model 2	Model 3
Childhood socioeconomic conditions			
Birthplace (ref: rural)			
Urban	-0.076 (0.061)	-0.043 (0.068)	-0.040 (0.068)
Father's education (ref: Illiterate)			
Primary school	0.012 (0.041)	0.008 (0.046)	0.006 (0.043)
Junior high school above	-0.067 (0.076)	-0.064 (0.077)	-0.063 (0.077)
Adult socioeconomic conditions			
Current residence (ref: rural)			
Urban		0.067 (0.044)	0.062 (0.044)
Respondent's education (ref: Illiterate)			
Primary school		0.187*** (0.050)	0.178*** (0.051)
Junior high school above		0.070 (0.059)	0.063 (0.060)
Household per capita income (ref: Low)			
Middle low		0.018 (0.052)	0.008 (0.053)
Middle high		0.030 (0.056)	0.019 (0.054)
High		-0.016 (0.057)	-0.034 (0.057)
Total household wealth (ref: Low)			
Middle low		-0.167** (0.045)	-0.167*** (0.054)
Middle high		-0.273*** (0.054)	-0.273*** (0.054)
High		-0.260*** (0.058)	-0.267*** (0.058)
Insurance coverage (ref: No)			
Yes		0.279*** (0.074)	0.280*** (0.074)
Demographic variables			
Age	0.031*** (0.002)	0.030*** (0.002)	0.028*** (0.002)
Gender (ref: Male)			
Female	0.191*** (0.037)	0.221*** (0.040)	0.220*** (0.055)
Marital status (ref: Married)			
Not married	-0.120* (0.050)	-0.116 (0.061)	-0.115 (0.061)
Health behaviors variables			
Smoking (ref: Never smoked)			
Ever smoked but currently quit			0.592*** (0.081)
Currently smoke			0.023 (0.054)
Drinking (ref: Not drink in the past year)			
Drink in the past year			-0.196*** (0.045)
Activity Participation (ref: No)			
Yes			-0.060 (0.038)
Constant	-1.154*** (0.129)	-1.330*** (0.172)	-1.205*** (0.179)
N		13732	

*p<0.05; **p<0.01; ***p<0.001

Table 4 OLS regression coefficients of cognitive function for childhood and adult socioeconomic conditions

Variables	Model 1	Model 2	Model 3
Childhood socioeconomic conditions			
Birthplace (ref: rural)			
Urban	1.888*** (0.095)	0.511*** (0.094)	0.475*** (0.093)
Father's education (ref: Illiterate)			
Primary school	1.168*** (0.067)	0.476*** (0.061)	0.458*** (0.061)
Junior high school above	1.397*** (0.123)	0.462*** (0.112)	0.421*** (0.111)
Adult socioeconomic conditions			
Current residence (ref: rural)			
Urban		0.351*** (0.063)	0.360*** (0.063)
Respondent's education (ref: Illiterate)			
Primary school		2.361*** (0.075)	2.348*** (0.075)
Junior high school above		3.753*** (0.087)	3.696*** (0.086)
Household per capita income (ref: Low)			
Middle low		0.321*** (0.078)	0.291*** (0.077)
Middle high		0.481*** (0.079)	0.435*** (0.0478)
High		0.909*** (0.083)	0.819*** (0.083)
Total household wealth (ref: Low)			
Middle low		-0.006 (0.079)	-0.020 (0.078)
Middle high		0.273** (0.079)	0.272** (0.079)
High		0.548*** (0.083)	0.503*** (0.082)
Insurance coverage (ref: No)			
Yes		0.625*** (0.112)	0.582*** (0.111)
Demographic variables			
Age	-0.096*** (0.003)	-0.052*** (0.003)	-0.052*** (0.003)
Gender (ref: Male)			
Female	-1.186*** (0.061)	-0.313*** (0.058)	-0.356*** (0.078)
Marital status (ref: Married)			
Not married	-0.683*** (0.098)	-0.362*** (0.089)	-0.370*** (0.088)
Health behaviors variables			
Smoking (ref: Never smoked)			
Ever smoked but currently quit			0.170 (0.107)
Currently smoke			-0.075 (0.077)
Drinking (ref: Not drink in the past year)			
Drink in the past year			-0.058 (0.065)
Activity Participation (ref: No)			
Yes			0.730*** (0.054)
Constant	17.535*** (0.206)	11.184*** (0.249)	11.000*** (0.257)
R ²	0.181	0.339	0.350
N		11641	

*p<0.05; **p<0.01; ***p<0.001

Table 5 Logistic regression coefficients of ADL disability for childhood and adult socioeconomic conditions

Variables	Model 1	Model 2	Model 3
Childhood socioeconomic conditions			
Birthplace (ref: rural)			
Urban	-0.667*** (0.097)	-0.122 (0.106)	-0.092 (0.106)
Father's education (ref: Illiterate)			
Primary school	-0.176** (0.054)	-0.022 (0.056)	-0.012 (0.056)
Junior high school above	-0.375*** (0.120)	-0.162 (0.122)	-0.144 (0.123)
Adult socioeconomic conditions			
Current residence (ref: rural)			
Urban		-0.203*** (0.057)	-0.219*** (0.057)
Respondent's education (ref: Illiterate)			
Primary school		-0.048 (0.057)	-0.041 (0.058)
Junior high school above		-0.427*** (0.078)	-0.399*** (0.079)
Household per capita income (ref: Low)			
Middle low		-0.204** (0.060)	-0.195** (0.061)
Middle high		-0.235*** (0.064)	-0.220** (0.065)
High		-0.533*** (0.077)	-0.505*** (0.078)
Total household wealth (ref: Low)			
Middle low		-0.159** (0.061)	-0.157* (0.061)
Middle high		-0.231*** (0.064)	-0.230*** (0.065)
High		-0.611*** (0.077)	-0.603*** (0.078)
Insurance coverage (ref: No)			
Yes		-0.000 (0.095)	0.012 (0.095)
Demographic variables			
Age	0.057*** (0.002)	0.051*** (0.003)	0.049*** (0.003)
Gender (ref: Male)			
Female	0.357*** (0.047)	0.293*** (0.052)	0.287*** (0.069)
Marital status (ref: Married)			
Not married	0.096 (0.066)	0.020 (0.067)	0.040 (0.067)
Health behaviors variables			
Smoking (ref: Never smoked)			
Ever smoked but currently quit			0.422*** (0.089)
Currently smoke			0.035 (0.070)
Drinking (ref: Not drink in the past year)			
Drink in the past year			-0.240*** (0.060)
Activity Participation (ref: No)			
Yes			-0.328*** (0.048)
Constant	-5.174*** (0.162)	-4.227*** (0.215)	-3.962*** (0.223)
N		14266	

*p<0.05; **p<0.01; ***p<0.001

Table 6 Logistic regression coefficients of IADL disability for childhood and adult socioeconomic conditions

Variables	Model 1	Model 2	Model 3
Childhood socioeconomic conditions			
Birthplace (ref: rural)			
Urban	-0.726*** (0.088)	-0.160 (0.097)	-0.125 (0.097)
Father's education (ref: Illiterate)			
Primary school	-0.238*** (0.050)	-0.049 (0.052)	-0.038 (0.052)
Junior high school above	-0.360*** (0.106)	-0.105 (0.108)	-0.087 (0.109)
Adult socioeconomic conditions			
Current residence (ref: rural)			
Urban		-0.151** (0.052)	-0.166** (0.052)
Respondent's education (ref: Illiterate)			
Primary school		-0.302*** (0.053)	-0.297*** (0.053)
Junior high school above		-0.698*** (0.071)	-0.670*** (0.071)
Household per capita income (ref: Low)			
Middle low		-0.153** (0.056)	-0.140* (0.056)
Middle high		-0.248*** (0.060)	-0.230*** (0.061)
High		-0.499*** (0.070)	-0.463*** (0.070)
Total household wealth (ref: Low)			
Middle low		-0.060 (0.057)	-0.055 (0.057)
Middle high		-0.140* (0.060)	-0.138* (0.060)
High		-0.513*** (0.070)	-0.499*** (0.070)
Insurance coverage (ref: No)			
Yes		0.117 (0.065)	0.063 (0.088)
Demographic variables			
Age	0.054*** (0.002)	0.045*** (0.002)	0.043*** (0.003)
Gender (ref: Male)			
Female	0.496*** (0.044)	0.344*** (0.048)	0.389*** (0.064)
Marital status (ref: Married)			
Not married	0.153* (0.050)	0.070 (0.062)	0.089 (0.063)
Health behaviors variables			
Smoking (ref: Never smoked)			
Ever smoked but currently quit			0.452*** (0.084)