

Supplementary Materials and Data

Supplementary Material 1: Details of the questions for social capital indicators

Frequency of socializing We assessed respondents' frequency of socializing by the question "How often did you engage in social interactions in your spare time in the past year?" Responses were categorized into "low" (including "never", "seldom", and "sometimes") and "high" (including "often" and "very frequently") frequency.

Civic participation We assessed civic participation by the question "Did you vote in the latest neighborhood/village committee election?". According to related laws,^{1,2} neighborhood committees and village committees are the basic-level administrative units, and residents aged 18 or above in each neighborhood/village directly elect members to the two committees. Hence, voting in the election reflects people's willingness to participate in civic activities in a county. The voting rate in a county reflects the extent of a county's social cohesion, and this measurement has been used in several previous studies.³⁻⁶

Trust We measured respondents' trust of others based on the question "Generally speaking, do you agree that most people in the society are trustworthy?" Responses were categorized into "low" (including "strongly disagree", "disagree", and "neutral") and "high" (including "agree" and "strongly agree") trust.

Supplementary Material 2: Calculation of county-level social capital

We calculate county-level social capital by using two-level binary logistic regressions with individuals at Level 1 nested within counties at Level 2. Following a previous study,⁷ we estimated the variance component in each individual-level social capital variable that can be attributed to counties separately. This method was also used in several multilevel social capital studies.⁸⁻¹⁰ We adjusted for individual characteristics that can influence each individual-level social capital variable, including gender (male, female), age (years), ethnicity (*Han*, non-*Han*), marital status (married/cohabitation, never married/divorced/separated/widowed), education (primary school or below, junior secondary school, senior secondary school, and college or above), occupation, poverty, and places of residence (rural, urban).

Taking y_{ij} as a binary response on a social capital variable for respondent i in county j , the regression model was specified as follows:

$$\text{Log} \left(\frac{p_{ij}}{1 - p_{ij}} \right) = \beta_0 + \beta_1 x_{1ij} + \beta_2 x_{2ij} + \dots + \beta_p x_{pij} + \mu_j$$

where $p_{ij} = \text{Pr}(y_{ij}=1)$, β_0 is the grand mean of the social capital variable, x_{pij} is the p th individual characteristics for respondent i in county j , and μ_j is the random effect at Level 2, i.e., the residuals at county level.

Based on the regression model above, the county-level social capital of county j was calculated by the sum of β_0 and μ_j . We transformed the coefficient to probability, i.e., $p_{ij} = \frac{e^{(\beta_0 + \mu_j)}}{1 + e^{(\beta_0 + \mu_j)}}$, which means the probability of $y_{ij}=1$ for county j in which respondent i lived after adjusting for individual characteristics. In other words, it is the probability of $y_{ij}=1$ that can be attributed to counties after adjusting for individual characteristics (i.e., compositional factors). Hence, it is the contextual construct of social capital at county level.⁷ We reported the probability as a percentage. Higher percentage indicated higher county-level social capital.

We performed the above regression model for each of the three social capital variables (i.e., frequency of socializing, civic participation, and trust) in each year. For example, if y_{ij} is a response on trust

(1=high trust, 0=low trust) for respondent i in county j in 2010, then p_{ij} is the probability of high trust in county j where respondent i lived in 2010 after adjusting for individual characteristics of respondent i . In other words, if respondent i lived in county j in 2010, then taking other individual characteristics into account, the probability of he/she having high trust was p_{ij} and this probability, p_{ij} , could be attributed to living in county j .

Supplementary Material 3: Details of occupation and poverty

We classified occupation according to the International Standard Classification of Occupations 2008 (ISCO-08) (i.e., Skill level 3 or 4: managers, professionals, and technicians and associate professionals; Skill 2: clerical support workers; services and sales workers; skilled agricultural, forestry and fishery workers; craft and related trades workers; plant and machine operators, and assemblers; Skill 1: elementary occupations).¹¹ We further included students, the unemployed, and retired people as “non-employed.”

We assessed poverty by equivalized household income, which was calculated by dividing household income by the squared root of the number of household members. We defined respondents as “poor” if their equivalized household annual incomes were less than or equal to half of the median equivalized household annual income in each survey year. We further included “do not know income” as a separate category.

Supplementary Material 4: The weighting method used for two-level regression models

Studies have indicated that it is required to use scaling weights instead of the “raw” weights in multilevel models.¹²⁻¹⁴ Following previous studies,^{12,15} we calculated scaled individual-level weights as below:

$$w_{ij}^* = w_{ij} \left(\frac{n_j}{\sum_i w_{ij}} \right)$$

where w_{ij}^* is the scaled weight for individual i in cluster j , w_{ij} is the unscaled weight for individual i in cluster j , and n_j is the sample size in cluster j . Each county represents one cluster in our study.

Supplementary Material 5: Supplementary Tables**Supplementary Table 1. Missing data**

	2010	2012	2013	2015
	Total = 11,783	Total = 11,765	Total = 11,438	Total = 10,968
Gender	0	0	0	0
Age	9	4	2	0
Ethnicity	22	9	12	20
Marital status	8	0	23	0
Education	15	4	6	29
Annual household income	758	548	614	348
Number of household member	0	0	0	0
Occupation	80	74	107	218
Frequency of socializing	76	8	4	6
Trust	21	6	14	41
Civic participation	28	11	15	102
Place of residence	0	0	0	0
Physical health	15	4	2	7
Mental health	51	17	21	26

Supplementary Table 2. Unweighted sample characteristics

	2010	2012	2013	2015
	Mean±SD/%	Mean±SD/%	Mean±SD/%	Mean±SD/%
Individual level	<i>N</i> = 10,827	<i>N</i> = 11,104	<i>N</i> = 10,663	<i>N</i> = 10,235
Physical Health				
Poor	41.71	44.09	35.81	40.12
Good	58.29	55.91	64.19	59.88
Mental Health				
Poor	34.24	34.77	28.79	32.34
Good	65.76	65.23	71.21	67.66
Sociodemographic factors				
Gender				
Female	51.79	48.83	49.85	53.10
Male	48.21	51.17	50.15	46.90
Age (years)	47.50±15.66	49.07±16.22	48.72±16.44	50.61±16.91
Ethnicity				
Non-Han	9.11	8.79	8.59	7.96
Han	90.89	91.21	91.41	92.04
Marital status				
Single/separated/divorced/widowed	19.44	19.92	21.00	21.71
Cohabit/married	80.56	80.08	79.00	78.29
Socioeconomic factors				
Education				
Primary school or below	36.92	37.23	36.18	38.21
Junior secondary school	29.52	28.31	29.04	28.52
Senior secondary school or equal	19.13	18.86	18.88	17.81
College or above	14.44	15.60	15.90	15.46
Occupation				
Skill 3 or 4	10.32	12.81	11.54	9.83
Skill 2	50.12	48.06	47.25	42.61
Skill 1	3.61	2.88	3.48	4.14
Non-employed	35.96	36.25	37.74	43.42
Poverty				
Poor	12.08	16.38	14.67	17.10
Non-poor	81.68	76.31	77.06	77.54
Do not know income	6.24	7.30	8.27	5.36
Place of residence				
Urban	59.64	59.68	59.98	57.82
Rural	40.36	40.32	40.02	42.18
Social capital				
Frequency of socializing				
Low	78.05	74.07	72.29	72.26
High	21.95	25.93	27.71	27.74
Civic participation				

No	53.59	50.93	56.13	52.87
Yes	46.41	49.07	43.87	47.13
Trust				
Low	33.92	35.27	43.62	35.89
High	66.08	64.73	56.38	64.11
County level	<i>N</i> = 133	<i>N</i> = 131	<i>N</i> = 126	<i>N</i> = 130
Social Capital				
Frequency of socializing (%)	19.57±6.38	31.43±8.58	34.66±11.25	38.95±9.61
Civic participation (%)	25.17±12.15	21.13±9.99	18.77±10.68	22.87±14.25
Trust (%)	46.87±7.29	45.80±9.25	42.23±10.31	43.92±6.36

Supplementary Table 3. Associations of individual- and county-level social capital with physical health, 2010-2015, stratified by place of residence (Two-level binary logistic model, with “poor” physical health as the reference group)

	Rural				Urban			
	2010 Adjusted OR (95% CI)	2012 Adjusted OR (95% CI)	2013 Adjusted OR (95% CI)	2015 Adjusted OR (95% CI)	2010 Adjusted OR (95% CI)	2012 Adjusted OR (95% CI)	2013 Adjusted OR (95% CI)	2015 Adjusted OR (95% CI)
Sociodemographic factors								
Gender								
Female	1	1	1	1	1	1	1	1
Male	1.50*** (1.30,1.74)	1.38*** (1.20,1.59)	1.19* (1.03,1.38)	1.37*** (1.19,1.57)	1.19** (1.06,1.33)	1.24*** (1.11,1.39)	1.20** (1.06,1.36)	1.24*** (1.10,1.41)
Age	0.96*** (0.95,0.96)	0.96*** (0.96,0.97)	0.96*** (0.96,0.97)	0.97*** (0.96,0.97)	0.96*** (0.96,0.96)	0.96*** (0.96,0.97)	0.96*** (0.96,0.96)	0.96*** (0.96,0.97)
Ethnicity								
Non-Han	1	1	1	1	1	1	1	1
Han	1.01 (0.74,1.37)	0.99 (0.75,1.30)	0.79 (0.59,1.06)	1.17 (0.88,1.56)	0.80 (0.61,1.05)	1.00 (0.77,1.30)	1.27 (0.95,1.69)	1.01 (0.76,1.34)
Marriage								
Single/separated/divorced/widowed	1	1	1	1	1	1	1	1
Cohabit/married	1.02 (0.83,1.26)	0.98 (0.81,1.19)	0.96 (0.79,1.17)	1.00 (0.83,1.21)	1.03 (0.89,1.19)	0.87 (0.75,1.00)	1.04 (0.90,1.22)	0.89 (0.76,1.03)
Socioeconomic factors								
Education								
Primary school or below	1	1	1	1	1	1	1	1
Junior secondary school	1.39*** (1.17,1.64)	1.49*** (1.27,1.74)	1.64*** (1.39,1.95)	1.24* (1.05,1.47)	0.97 (0.82,1.14)	0.92 (0.79,1.08)	0.94 (0.79,1.12)	1.02 (0.87,1.21)

Senior secondary school or equal	1.49** (1.14,1.96)	1.53** (1.18,1.99)	1.54** (1.17,2.03)	2.08*** (1.57,2.75)	1.15 (0.97,1.36)	1.18 (0.99,1.40)	1.25* (1.04,1.52)	1.21* (1.00,1.45)
College or above	1.60 (0.84,3.04)	2.77** (1.53,5.00)	3.18*** (1.72,5.89)	1.78* (1.09,2.89)	1.26* (1.02,1.55)	1.25* (1.02,1.52)	1.28* (1.02,1.60)	1.46*** (1.17,1.83)
Poverty								
Poor	1	1	1	1	1	1	1	1
Non-poor	1.70*** (1.42,2.03)	1.59*** (1.36,1.87)	1.56*** (1.31,1.85)	1.60*** (1.37,1.88)	1.25 (0.98,1.60)	1.73*** (1.39,2.15)	1.83*** (1.46,2.30)	1.54*** (1.24,1.91)
Do not know income	1.58** (1.13,2.19)	1.54** (1.17,2.03)	1.28 (0.98,1.69)	1.02 (0.74,1.41)	1.24 (0.89,1.73)	1.33 (0.98,1.79)	1.71*** (1.26,2.32)	1.53* (1.10,2.14)
Occupation								
Skill level 3 or 4	1	1	1	1	1	1	1	1
Skill level 2	0.91 (0.56,1.48)	0.88 (0.58,1.36)	0.78 (0.48,1.26)	1.17 (0.73,1.86)	0.89 (0.73,1.09)	0.97 (0.82,1.16)	1.00 (0.82,1.23)	0.97 (0.78,1.22)
Skill level 1	1.53 (0.79,2.94)	1.24 (0.66,2.30)	1.03 (0.53,1.99)	1.29 (0.72,2.28)	1.04 (0.75,1.45)	0.89 (0.64,1.24)	0.93 (0.66,1.32)	0.73 (0.52,1.03)
Non-employed	0.64 (0.39,1.06)	0.74 (0.48,1.15)	0.49** (0.30,0.80)	1.00 (0.62,1.60)	0.65*** (0.53,0.80)	0.74*** (0.61,0.88)	0.64*** (0.52,0.80)	0.70** (0.56,0.87)
Individual-level social capital								
Frequency of socializing								
Low	1	1	1	1	1	1	1	1
High	1.45*** (1.19,1.76)	1.50*** (1.27,1.78)	1.28** (1.10,1.50)	1.37*** (1.19,1.59)	1.51*** (1.31,1.73)	1.33*** (1.17,1.51)	1.27** (1.09,1.47)	1.34*** (1.15,1.55)
Civic participation								
No	1	1	1	1	1	1	1	1
Yes	1.04	1.00	0.89	0.88	0.97	1.01	1.12	1.09

	(0.88,1.21)	(0.86,1.16)	(0.77,1.04)	(0.76,1.02)	(0.85,1.10)	(0.90,1.14)	(0.98,1.29)	(0.95,1.25)
Trust								
Low	1	1	1	1	1	1	1	1
High	1.24**	1.26**	1.07	1.40***	1.39***	1.31***	1.35***	1.41***
	(1.06,1.45)	(1.09,1.46)	(0.92,1.24)	(1.21,1.62)	(1.23,1.56)	(1.17,1.47)	(1.20,1.54)	(1.24,1.59)
County-level social capital								
High frequency of socializing (%)	0.99	1.01	1.00	1.01*	0.99	1.00	1.00	1.01**
	(0.96,1.01)	(0.99,1.02)	(0.98,1.01)	(1.00,1.03)	(0.97,1.01)	(0.99,1.01)	(0.99,1.02)	(1.00,1.02)
Civic participation (%)	1.01	1.00	1.00	0.99	1.00	0.99*	0.98*	0.99**
	(0.99,1.02)	(0.99,1.02)	(0.99,1.02)	(0.98,1.01)	(0.99,1.00)	(0.98,1.00)	(0.97,1.00)	(0.98,1.00)
Trust (%)	1.00	1.01	1.01	1.01	1.00	1.01	1.00	1.01
	(0.97,1.02)	(0.99,1.02)	(0.99,1.03)	(0.99,1.03)	(0.99,1.02)	(1.00,1.02)	(0.99,1.01)	(0.99,1.03)
<i>N of individuals</i>	4,370	4,477	4,267	4,317	6,457	6,627	6,396	5,918
<i>N of counties[#]</i>	89	87	86	87	129	125	121	124
<i>ICC</i>	0.122	0.059	0.092	0.058	0.069	0.046	0.116	0.049

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

[#] One county (i.e., county-level administrative unit) could include both rural and urban samples. Hence, the total number of counties in our study is not equal to the sum of the number of counties in rural samples and the number of counties in urban samples.

Supplementary Table 4. Associations of individual-level and county-level social capital with mental health, 2010-2015, stratified by place of residence (Two-level binary logistic model, with “poor” mental health as the reference group)

	Rural				Urban			
	2010 Adjusted OR (95% CI)	2012 Adjusted OR (95% CI)	2013 Adjusted OR (95% CI)	2015 Adjusted OR (95% CI)	2010 Adjusted OR (95% CI)	2012 Adjusted OR (95% CI)	2013 Adjusted OR (95% CI)	2015 Adjusted OR (95% CI)
Sociodemographic factors								
Gender								
Female	1	1	1	1	1	1	1	1
Male	1.41*** (1.22,1.61)	1.47*** (1.28,1.69)	1.11 (0.96,1.29)	1.41*** (1.23,1.63)	1.13* (1.01,1.27)	1.24*** (1.10,1.38)	1.13 (1.00,1.27)	1.16* (1.02,1.31)
Age	0.98*** (0.98,0.99)	0.98*** (0.98,0.99)	0.99*** (0.99,1.00)	0.99*** (0.98,0.99)	0.99** (0.99,1.00)	1.00 (0.99,1.00)	0.99*** (0.98,0.99)	1.00 (0.99,1.00)
Ethnicity								
Non-Han	1	1	1	1	1	1	1	1
Han	0.89 (0.67,1.20)	0.91 (0.69,1.20)	0.86 (0.64,1.16)	0.97 (0.72,1.30)	0.93 (0.71,1.21)	1.26 (0.98,1.63)	1.19 (0.90,1.58)	1.16 (0.88,1.54)
Marriage								
Single/separated/divorced/widowed	1	1	1	1	1	1	1	1
Cohabit/married	1.16 (0.96,1.40)	1.13 (0.94,1.35)	1.46*** (1.21,1.75)	1.19* (1.00,1.43)	1.27*** (1.11,1.46)	1.21** (1.06,1.39)	1.20* (1.03,1.39)	1.19* (1.03,1.37)
Socioeconomic factors								
Education								
Primary school or below	1	1	1	1	1	1	1	1
Junior secondary school	1.33*** (1.13,1.57)	1.26** (1.07,1.48)	1.42*** (1.19,1.70)	1.09 (0.92,1.29)	1.30** (1.11,1.53)	1.18* (1.00,1.39)	1.05 (0.88,1.25)	1.43*** (1.21,1.69)

Senior secondary school or equal	1.46**	1.39*	1.28	1.48**	1.44***	1.54***	1.31**	1.76***
	(1.12,1.90)	(1.06,1.82)	(0.97,1.69)	(1.12,1.94)	(1.21,1.71)	(1.30,1.84)	(1.08,1.59)	(1.46,2.12)
College or above	1.27	2.16**	3.48***	1.57	1.68**	1.51***	1.31*	1.94***
	(0.70,2.29)	(1.21,3.85)	(1.97,6.16)	(0.99,2.49)	(1.37,2.07)	(1.24,1.85)	(1.05,1.64)	(1.55,2.42)
Poverty								
Poor	1	1	1	1	1	1	1	1
Non-poor	1.69***	1.60***	1.78***	1.54***	1.77***	1.77***	1.77***	1.41**
	(1.43,2.01)	(1.37,1.87)	(1.50,2.11)	(1.31,1.80)	(1.40,2.22)	(1.43,2.18)	(1.42,2.22)	(1.14,1.74)
Do not know income	2.23***	1.49**	1.27	1.22	1.65**	1.61**	1.43*	1.45*
	(1.62,3.07)	(1.14,1.95)	(0.98,1.65)	(0.89,1.67)	(1.21,2.26)	(1.20,2.14)	(1.07,1.93)	(1.05,1.99)
Occupation								
Skill level 3 or 4	1	1	1	1	1	1	1	1
Skill level 2	0.73	0.91	1.00	1.28	1.04	0.98	0.96	1.14
	(0.45,1.18)	(0.59,1.43)	(0.62,1.61)	(0.81,2.01)	(0.86,1.26)	(0.82,1.17)	(0.79,1.17)	(0.92,1.42)
Skill level 1	0.66	0.61	0.95	1.22	1.34	1.16	1.04	1.03
	(0.35,1.21)	(0.32,1.13)	(0.49,1.82)	(0.69,2.14)	(0.96,1.87)	(0.83,1.62)	(0.74,1.47)	(0.73,1.44)
Non-employed	0.58*	0.85	0.70	1.05	1.00	1.01	0.99	1.00
	(0.36,0.95)	(0.54,1.34)	(0.43,1.15)	(0.66,1.65)	(0.82,1.22)	(0.85,1.22)	(0.80,1.22)	(0.81,1.24)
Individual-level social capital								
Frequency of socializing								
Low	1	1	1	1	1	1	1	1
High	1.11	1.25*	1.36***	1.54***	1.34***	1.18**	1.23**	1.17*
	(0.92,1.34)	(1.05,1.47)	(1.17,1.59)	(1.33,1.79)	(1.17,1.54)	(1.04,1.34)	(1.06,1.43)	(1.01,1.35)
Civic participation								
No	1	1	1	1	1	1	1	1
Yes	0.89	1.00	1.03	0.89	1.02	1.04	1.29***	1.13

	(0.77,1.04)	(0.86,1.15)	(0.89,1.21)	(0.76,1.03)	(0.90,1.16)	(0.92,1.18)	(1.12,1.48)	(0.99,1.30)
Trust								
Low	1	1	1	1	1	1	1	1
High	1.43***	1.36***	1.21**	1.58***	1.47***	1.48***	1.48***	1.33***
	(1.23,1.66)	(1.18,1.57)	(1.05,1.41)	(1.37,1.83)	(1.31,1.65)	(1.32,1.65)	(1.31,1.67)	(1.17,1.50)
County-level social capital								
Frequency of socializing (%)	0.99	1.00	1.00	1.02**	0.99	1.00	1.00	1.00
	(0.97,1.01)	(0.99,1.02)	(0.98,1.01)	(1.01,1.03)	(0.98,1.01)	(0.99,1.01)	(0.99,1.01)	(0.99,1.02)
Civic participation (%)	1.01	1.01	1.00	1.00	1.01	1.01	1.00	1.00
	(1.00,1.02)	(1.00,1.02)	(0.99,1.02)	(0.99,1.01)	(1.00,1.02)	(1.00,1.02)	(0.99,1.02)	(0.99,1.01)
Trust (%)	0.99	1.01	1.00	1.00	0.99	1.01*	0.99	1.00
	(0.97,1.01)	(0.99,1.02)	(0.98,1.02)	(0.98,1.03)	(0.98,1.00)	(1.00,1.02)	(0.98,1.01)	(0.99,1.02)
<i>N of individuals</i>	4,370	4,477	4,267	4,317	6,457	6,627	6,396	5,918
<i>N of counties</i> #	89	87	86	87	129	125	121	124
<i>ICC</i>	0.084	0.077	0.106	0.072	0.054	0.060	0.130	0.053

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

One county (i.e., county-level administrative unit) could include both rural and urban samples. Hence, the total number of counties in our study is not equal to the sum of the number of counties in rural samples and the number of counties in urban samples.

Supplementary Table 5. Associations of individual- and county-level social capital, national GDP, and annually national GDP growth with physical health and mental health, pooled data from 2010-2015 (Multi-level binary logistic model, with “poor” physical health and “poor” mental health as references)

	Two-level models without GDP		Three-level models with GDP and GDP growth		Two-level models with GDP and GDP Growth at Level-1 [#]	
	Physical health	Mental health	Physical health	Mental health	Physical health	Mental health
	Adjusted OR (95% CI)	Adjusted OR (95% CI)	Adjusted OR (95% CI)	Adjusted OR (95% CI)	Adjusted OR (95% CI)	Adjusted OR (95% CI)
Sociodemographic factors						
Gender						
Female	1	1	1	1	1	1
Male	1.28*** (1.23,1.34)	1.23*** (1.18,1.28)	1.28*** (1.23,1.34)	1.23*** (1.18,1.29)	1.28*** (1.24,1.33)	1.23*** (1.15,1.32)
Age	0.96*** (0.96,0.96)	0.99*** (0.99,0.99)	0.96*** (0.96,0.96)	0.99*** (0.99,0.99)	0.96*** (0.96,0.96)	0.99*** (0.99,0.99)
Ethnicity						
Non-Han	1	1	1	1	1	1
Han	0.98 (0.89,1.09)	0.95 (0.86,1.05)	0.98 (0.89,1.09)	0.96 (0.87,1.07)	0.98 (0.90,1.07)	0.96 (0.88,1.05)
Marriage						
Single/separated/divorced/widowed	1	1	1	1	1	1
Cohabit/married	0.95 (0.90,1.01)	1.23*** (1.17,1.30)	0.96 (0.91,1.02)	1.24*** (1.17,1.31)	0.96 (0.91,1.02)	1.24*** (1.20,1.28)
Socioeconomic factors						
Education						
Primary school or below	1	1	1	1	1	1
Junior secondary school	1.18***	1.27***	1.19***	1.27***	1.19***	1.27***

	(1.11,1.25)	(1.19,1.34)	(1.13,1.26)	(1.20,1.35)	(1.13,1.25)	(1.22,1.33)
Senior secondary school or equal	1.38***	1.47***	1.40***	1.48***	1.40***	1.48***
	(1.29,1.48)	(1.37,1.58)	(1.30,1.50)	(1.38,1.59)	(1.32,1.47)	(1.38,1.59)
College or above	1.48***	1.53***	1.53***	1.56***	1.53***	1.56***
	(1.35,1.62)	(1.40,1.67)	(1.40,1.68)	(1.43,1.71)	(1.45,1.62)	(1.48,1.64)
Poverty						
Poor	1	1	1	1	1	1
Non-poor	1.62***	1.68***	1.62***	1.71***	1.62***	1.71***
	(1.52,1.73)	(1.58,1.79)	(1.52,1.73)	(1.61,1.82)	(1.56,1.68)	(1.60,1.83)
Do not know income	1.43***	1.52***	1.44***	1.51***	1.45***	1.51***
	(1.29,1.58)	(1.38,1.67)	(1.30,1.60)	(1.36,1.66)	(1.36,1.55)	(1.30,1.75)
Occupation						
Skill level 3 or 4	1	1	1	1	1	1
Skill level 2	0.94	1.08	0.94	1.06	0.94***	1.06
	(0.87,1.03)	(0.99,1.17)	(0.86,1.02)	(0.97,1.16)	(0.90,0.97)	(0.98,1.15)
Skill level 1	1.02	1.07	1.01	1.08	1.01	1.08*
	(0.88,1.17)	(0.93,1.23)	(0.87,1.16)	(0.94,1.24)	(0.87,1.16)	(1.01,1.15)
Non-employed	0.72***	0.99	0.71***	0.99	0.71***	0.99
	(0.65,0.78)	(0.91,1.08)	(0.64,0.77)	(0.90,1.08)	(0.64,0.78)	(0.92,1.05)
Place of residence						
Rural	1	1	1	1	1	1
Urban	1.20***	1.06*	1.20***	1.07*	1.20***	1.07*
	(1.13,1.27)	(1.00,1.12)	(1.13,1.27)	(1.01,1.13)	(1.09,1.31)	(1.00,1.15)
Individual-level social capital						
Frequency of socializing						
Low	1	1	1	1	1	1

High	1.34*** (1.27,1.41)	1.27*** (1.21,1.33)	1.37*** (1.30,1.44)	1.28*** (1.22,1.35)	1.37*** (1.29,1.44)	1.28*** (1.22,1.35)
Civic participation						
No	1	1	1	1	1	1
Yes	1.00 (0.95,1.05)	1.04 (0.99,1.09)	1.01 (0.96,1.06)	1.05 (1.00,1.10)	1.01 (1.00,1.02)	1.05 (0.98,1.12)
Trust						
Low	1	1	1	1	1	1
High	1.29*** (1.23,1.35)	1.39*** (1.33,1.46)	1.31*** (1.25,1.37)	1.42*** (1.36,1.49)	1.31*** (1.23,1.39)	1.42*** (1.37,1.46)
County-level social capital						
Frequency of socializing (%)	1.01*** (1.00,1.01)	1.01*** (1.00,1.01)	1.00 (1.00,1.01)	1.00 (0.99,1.01)	1.00 (1.00,1.01)	1.00 (1.00,1.00)
Civic participation (%)	0.99*** (0.99,1.00)	1.00 (1.00,1.00)	0.99** (0.99,1.00)	1.00 (1.00,1.01)	0.99*** (0.99,1.00)	1.00 (1.00,1.01)
Trust (%)	1.00 (1.00,1.01)	1.00 (1.00,1.01)	1.01* (1.00,1.01)	1.00 (0.99,1.01)	1.01** (1.00,1.01)	1.00 (0.99,1.01)
Year						
National GDP (trillion <i>yuan</i>)	--	--	1.03 (0.99,1.06)	1.01 (0.98,1.04)	1.03 (1.00,1.06)	1.01 (0.98,1.04)
Annually National GDP Growth (%)	--	--	1.13 (0.87,1.46)	1.02 (0.81,1.30)	1.13 (0.94,1.36)	1.03 (0.87,1.22)
<i>N of individuals</i>	42,829	42,829	42,829	42,829	42,829	42,829
<i>N of counties</i>	520	520	520	520	520	520
<i>N of years</i>	--	--	4	4	--	--
<i>ICC (At year level)</i>	--	--	0.003	0.003	--	--

<i>ICC (At county level)</i>	0.041	0.040	0.079	0.080	0.078	0.080
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* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; 1 trillion *yuan* \approx 141 billion US\$

As ICCs at the year level were too small in the previous three-level models, we treat National GDP and Annually National GDP Growth as Level 1 factors. We calculated 95%CI based on the standard errors clustered on the year level given that observations within each year might not be independent with each other.

Supplementary Table 6. Interaction effects between social capital indicators and survey year on physical health, pooled data from 2010-2015 (Two-level binary logistic model, with “poor” physical health as references)

	Adjusted OR (95% CI)					
Interaction term						
<i>Individual-level social capital</i>						
High frequency of socializing × 2010	1	--	--	--	--	--
High frequency of socializing × 2012	0.95 (0.82,1.10)	--	--	--	--	--
High frequency of socializing × 2013	0.88 (0.76,1.01)	--	--	--	--	--
High frequency of socializing × 2015	1.01 (0.87,1.16)	--	--	--	--	--
Civic participation (Yes) × 2010	--	1	--	--	--	--
Civic participation (Yes) × 2012	--	0.93 (0.83,1.05)	--	--	--	--
Civic participation (Yes) × 2013	--	0.91 (0.81,1.03)	--	--	--	--
Civic participation (Yes) × 2015	--	0.91 (0.81,1.03)	--	--	--	--
High trust × 2010	--	--	1	--	--	--
High trust × 2012	--	--	0.98 (0.87,1.11)	--	--	--
High trust × 2013	--	--	0.90 (0.79,1.02)	--	--	--
High trust × 2015	--	--	1.08	--	--	--

				(0.95,1.22)		
County-level social capital						
High frequency of socializing × 2010	--	--	--	1	--	--
High frequency of socializing × 2012	--	--	--	1.00 (0.99,1.01)	--	--
High frequency of socializing × 2013	--	--	--	1.01 (1.00,1.01)	--	--
High frequency of socializing × 2015	--	--	--	1.02*** (1.01,1.03)	--	--
Civic participation (Yes) × 2010	--	--	--	--	1	--
Civic participation (Yes) × 2012	--	--	--	--	0.99* (0.99,1.00)	--
Civic participation (Yes) × 2013	--	--	--	--	1.00 (0.99,1.00)	--
Civic participation (Yes) × 2015	--	--	--	--	1.00 (0.99,1.00)	--
High trust × 2010	--	--	--	--	--	1
High trust × 2012	--	--	--	--	--	1.00 (0.99,1.01)
High trust × 2013	--	--	--	--	--	1.00 (0.99,1.01)
High trust × 2015	--	--	--	--	--	1.00 (0.99,1.01)
<i>N of individuals</i>	42,829	42,829	42,829	42,829	42,829	42,829
<i>ICC</i>	0.043	0.043	0.043	0.043	0.043	0.043

* p < 0.05, ** p < 0.01, *** p < 0.001; Year and all other variables in Table 2 and Table 3 are adjusted.

Supplementary Table 7. Interaction effects between social capital indicators and survey year on mental health, pooled data from 2010-2015 (Two-level binary logistic model, with “poor” mental health as references)

	Adjusted OR (95% CI)					
Interaction term						
<i>Individual-level social capital</i>						
High frequency of socializing × 2010	1	--	--	--	--	--
High frequency of socializing × 2012	0.93 (0.81,1.08)	--	--	--	--	--
High frequency of socializing × 2013	1.03 (0.89,1.19)	--	--	--	--	--
High frequency of socializing × 2015	1.10 (0.95,1.27)	--	--	--	--	--
Civic participation (Yes) × 2010	--	1	--	--	--	--
Civic participation (Yes) × 2012	--	1.09 (0.97,1.22)	--	--	--	--
Civic participation (Yes) × 2013	--	1.13 (1.00,1.27)	--	--	--	--
Civic participation (Yes) × 2015	--	1.02 (0.90,1.15)	--	--	--	--
High trust × 2010	--	--	1	--	--	--
High trust × 2012	--	--	1.04 (0.92,1.17)	--	--	--
High trust × 2013	--	--	0.96 (0.85,1.08)	--	--	--
High trust × 2015	--	--	1.02	--	--	--

				(0.90,1.16)		
County-level social capital						
High frequency of socializing × 2010	--	--	--	1	--	--
High frequency of socializing × 2012	--	--	--	1.01	--	--
				(1.00,1.02)		
High frequency of socializing × 2013	--	--	--	1.01	--	--
				(1.00,1.01)		
High frequency of socializing × 2015	--	--	--	1.02***	--	--
				(1.01,1.03)		
Civic participation (Yes) × 2010	--	--	--	--	1	--
Civic participation (Yes) × 2012	--	--	--	--	1.00	--
					(0.99,1.00)	
Civic participation (Yes) × 2013	--	--	--	--	0.99*	--
					(0.99,1.00)	
Civic participation (Yes) × 2015	--	--	--	--	1.00	--
					(0.99,1.00)	
High trust × 2010	--	--	--	--	--	1
High trust × 2012	--	--	--	--	--	1.01***
						(1.01,1.02)
High trust × 2013	--	--	--	--	--	1.01*
						(1.00,1.02)
High trust × 2015	--	--	--	--	--	1.01
						(1.00,1.02)
<i>N of individuals</i>	42,829	42,829	42,829	42,829	42,829	42,829
<i>ICC</i>	0.040	0.040	0.040	0.040	0.040	0.040

* p < 0.05, ** p < 0.01, *** p < 0.001; Year and all other variables in Table 2 and Table 3 are adjusted.

Supplementary Table 8. Associations of individual- and county-level social capital with physical health, 2010-2015, based on weighted data (Two-level binary logistic model, with “poor” physical health as the reference group)

	2010	2012	2013	2015
	Adjusted OR	Adjusted OR	Adjusted OR	Adjusted OR
	(95% CI)	(95% CI)	(95% CI)	(95% CI)
Sociodemographic factors				
Gender				
Female	1	1	1	1
Male	1.24** (1.08,1.43)	1.38*** (1.23,1.55)	1.14* (1.02,1.28)	1.29*** (1.14,1.46)
Age	0.96*** (0.95,0.96)	0.96*** (0.95,0.96)	0.96*** (0.96,0.97)	0.96*** (0.96,0.96)
Ethnicity				
Non-Han	1	1	1	1
Han	0.86 (0.73,1.01)	0.92 (0.73,1.15)	0.91 (0.65,1.26)	0.97 (0.76,1.25)
Marriage				
Single/separated/divorced/widowed	1	1	1	1
Cohabit/married	0.92 (0.80,1.04)	0.95 (0.78,1.15)	1.10 (0.92,1.32)	0.92 (0.80,1.07)
Socioeconomic factors				
Education				
Primary school or below	1	1	1	1
Junior secondary school	1.33*** (1.15,1.53)	1.25** (1.09,1.43)	1.48*** (1.22,1.79)	1.29** (1.09,1.53)
Senior secondary school or equal	1.40*** (1.18,1.67)	1.55*** (1.30,1.83)	1.74*** (1.42,2.13)	1.65*** (1.37,1.98)
College or above	1.61*** (1.30,2.00)	1.63*** (1.27,2.08)	2.09*** (1.64,2.66)	1.92*** (1.53,2.42)
Poverty				
Poor	1	1	1	1
Non-poor	1.66*** (1.39,1.97)	1.54*** (1.31,1.81)	1.57*** (1.33,1.87)	1.59*** (1.34,1.88)
Do not know income	1.60*** (1.24,2.07)	1.55*** (1.23,1.95)	1.55*** (1.22,1.96)	1.24 (0.91,1.68)
Occupation				
Skill level 3 or 4	1	1	1	1
Skill level 2	0.87 (0.70,1.07)	0.83 (0.64,1.07)	0.81 (0.64,1.02)	1.03 (0.81,1.30)
Skill level 1	1.37 (0.94,1.99)	0.79 (0.54,1.17)	0.99 (0.74,1.33)	1.03 (0.73,1.47)
Non-employed	0.69** (0.55,0.87)	0.74** (0.59,0.93)	0.62*** (0.50,0.77)	0.89 (0.70,1.13)

Place of residence				
Rural	1	1	1	1
Urban	1.01 (0.86,1.19)	1.10 (0.96,1.24)	1.15 (0.99,1.33)	1.18* (1.01,1.38)
Individual-level social capital				
Frequency of socializing				
Low	1	1	1	1
High	1.48*** (1.29,1.70)	1.40*** (1.24,1.59)	1.17* (1.03,1.33)	1.26** (1.08,1.48)
Civic participation				
No	1	1	1	1
Yes	0.96 (0.84,1.10)	1.10 (0.96,1.25)	0.97 (0.85,1.10)	0.97 (0.85,1.11)
Trust [#]				
Low	1	1	1	1
High	1.35*** (1.21,1.52)	1.32*** (1.17,1.48)	1.14 (0.99,1.30)	1.46*** (1.28,1.67)
County-level social capital				
Frequency of socializing (%)				
	0.98* (0.96,1.00)	1.01 (1.00,1.02)	1.00 (0.99,1.02)	1.02*** (1.01,1.03)
Civic participation (%)				
	1.00 (0.99,1.01)	1.00 (0.99,1.01)	0.99 (0.98,1.01)	0.99 (0.99,1.00)
Trust (%)				
	0.99 (0.97,1.01)	1.01 (0.99,1.02)	1.01 (1.00,1.03)	1.01 (1.00,1.03)
<i>N of individuals</i>	10,827	11,104	10,663	10,235
<i>N of counties</i>	133	131	126	130
<i>ICC</i>	0.096	0.059	0.093	0.043

* p < 0.05, ** p < 0.01, *** p < 0.001

[#] p = 0.063 in 2013

Supplementary Table 9. Associations of individual- and county-level social capital with mental health, 2010–2015, based on weighted data (Two-level binary logistic model, with “poor” mental health as the reference group)

	2010		2012		2013		2015	
	Adjusted	OR	Adjusted	OR	Adjusted	OR	Adjusted	OR
	(95% CI)		(95% CI)		(95% CI)		(95% CI)	
Sociodemographic factors								
Gender								
Female		1		1		1		1
Male	1.22***		1.48***		1.04		1.30***	
	(1.09,1.38)		(1.33,1.65)		(0.91,1.18)		(1.15,1.45)	
Age	0.98***		0.98***		0.99***		0.99***	
	(0.98,0.99)		(0.98,0.99)		(0.98,0.99)		(0.99,1.00)	
Ethnicity								
Non-Han		1		1		1		1
Han	0.80*		0.98		0.93		0.93	
	(0.66,0.98)		(0.79,1.21)		(0.68,1.28)		(0.74,1.15)	
Marriage								
Single/separated/divorced/widowed		1		1		1		1
Cohabit/married	1.23**		1.16		1.47***		1.32***	
	(1.06,1.43)		(0.99,1.35)		(1.24,1.73)		(1.12,1.55)	
Socioeconomic factors								
Education								
Primary school or below		1		1		1		1
Junior secondary school	1.34***		1.23**		1.41***		1.31***	
	(1.17,1.53)		(1.05,1.42)		(1.16,1.71)		(1.12,1.54)	
Senior secondary school or equal	1.33**		1.62***		1.57**		1.65***	
	(1.11,1.59)		(1.34,1.96)		(1.15,2.14)		(1.34,2.03)	
College or above	1.43**		1.45***		2.02***		1.94***	
	(1.12,1.81)		(1.17,1.80)		(1.47,2.77)		(1.51,2.48)	
Poverty								
Poor		1		1		1		1
Non-poor	1.71***		1.58***		1.65***		1.55***	
	(1.47,2.00)		(1.37,1.81)		(1.41,1.94)		(1.33,1.81)	
Do not know income	1.92***		1.39**		1.34*		1.46*	
	(1.48,2.50)		(1.10,1.77)		(1.07,1.67)		(1.09,1.95)	
Occupation								
Skill level 3 or 4		1		1		1		1
Skill level 2	0.98		0.88		1.17		1.31*	
	(0.78,1.24)		(0.70,1.10)		(0.87,1.56)		(1.01,1.69)	
Skill level 1	0.94		0.65*		1.28		1.54	
	(0.66,1.34)		(0.46,0.92)		(0.81,2.03)		(0.98,2.42)	
Non-employed	0.94		0.95		1.10		1.20	
	(0.75,1.18)		(0.76,1.20)		(0.80,1.50)		(0.92,1.55)	

Place of residence				
Rural	1	1	1	1
Urban	1.04 (0.90,1.19)	0.92 (0.79,1.06)	0.97 (0.84,1.12)	1.06 (0.93,1.22)
Individual-level social capital				
Frequency of socializing [#]				
Low	1	1	1	1
High	1.19 (1.00,1.42)	1.14* (1.00,1.31)	1.29*** (1.14,1.46)	1.36*** (1.17,1.59)
Civic participation				
No	1	1	1	1
Yes	0.96 (0.85,1.08)	0.95 (0.84,1.07)	1.10 (0.95,1.27)	0.93 (0.81,1.08)
Trust				
Low	1	1	1	1
High	1.43*** (1.28,1.59)	1.40*** (1.24,1.57)	1.27*** (1.12,1.46)	1.34*** (1.20,1.49)
County-level social capital				
Frequency of socializing (%)	0.99 (0.97,1.01)	1.01* (1.00,1.02)	1.00 (0.99,1.01)	1.01* (1.00,1.03)
Civic participation (%)	1.01 (1.00,1.01)	1.01 (1.00,1.02)	1.00 (0.99,1.01)	1.00 (0.99,1.01)
Trust (%)	0.98* (0.97,1.00)	1.01* (1.00,1.02)	1.00 (0.98,1.02)	1.00 (0.99,1.02)
<i>N of individuals</i>	10,827	11,104	10,663	10,235
<i>N of counties</i>	133	131	126	130
<i>ICC</i>	0.064	0.055	0.100	0.053

* p < 0.05, ** p < 0.01, *** p < 0.001

[#] p = 0.053 in 2010

Supplementary Table 10. Sensitivity analysis on associations of individual- and county-level social capital with physical health, 2010-2015 (Two-level ordinal logistic model)

	2010	2012	2013	2015
	Adjusted OR	Adjusted OR	Adjusted OR	Adjusted OR
	(95% CI)	(95% CI)	(95% CI)	(95% CI)
Sociodemographic factors				
Gender				
Female	1	1	1	1
Male	1.31*** (1.22,1.41)	1.38*** (1.29,1.49)	1.25*** (1.16,1.34)	1.29*** (1.20,1.39)
Age	0.96*** (0.96,0.96)	0.96*** (0.96,0.96)	0.96*** (0.96,0.96)	0.96*** (0.96,0.96)
Ethnicity				
Non-Han	1	1	1	1
Han	0.89 (0.76,1.05)	1.01 (0.86,1.19)	0.94 (0.80,1.12)	1.08 (0.90,1.28)
Marriage				
Single/separated/divorced/widowed	1	1	1	1
Cohabit/married	1.00 (0.91,1.10)	0.96 (0.88,1.05)	1.00 (0.91,1.10)	0.94 (0.86,1.03)
Socioeconomic factors				
Education				
Primary school or below	1	1	1	1
Junior secondary school	1.31*** (1.19,1.45)	1.22*** (1.11,1.35)	1.29*** (1.17,1.43)	1.19*** (1.07,1.31)
Senior secondary school or equal	1.43*** (1.27,1.61)	1.39*** (1.23,1.56)	1.52*** (1.35,1.71)	1.44*** (1.27,1.62)
College or above	1.36*** (1.17,1.57)	1.44*** (1.25,1.66)	1.45*** (1.26,1.68)	1.43*** (1.23,1.66)
Poverty				
Poor	1	1	1	1
Non-poor	1.85*** (1.64,2.09)	1.70*** (1.53,1.90)	1.82*** (1.63,2.04)	1.66*** (1.49,1.85)
Do not know income	1.76*** (1.47,2.11)	1.54*** (1.30,1.81)	1.61*** (1.37,1.90)	1.36** (1.13,1.64)
Occupation				
Skill level 3 or 4	1	1	1	1
Skill level 2	0.95 (0.83,1.08)	0.97 (0.85,1.10)	0.99 (0.87,1.12)	1.05 (0.91,1.22)
Skill level 1	1.11 (0.89,1.39)	1.06 (0.84,1.35)	1.08 (0.86,1.35)	0.99 (0.79,1.24)
Non-employed	0.70*** (0.61,0.81)	0.79*** (0.69,0.90)	0.76*** (0.66,0.87)	0.84* (0.73,0.98)
Place of residence				

Rural	1	1	1	1
Urban	1.14**	1.20***	1.22***	1.36***
	(1.03,1.26)	(1.09,1.32)	(1.11,1.34)	(1.23,1.50)
Individual-level social capital				
Frequency of socializing				
Low	1	1	1	1
High	1.40***	1.35***	1.29***	1.35***
	(1.28,1.53)	(1.25,1.47)	(1.18,1.40)	(1.24,1.46)
Civic participation				
No	1	1	1	1
Yes	0.96	1.05	1.03	1.04
	(0.89,1.04)	(0.97,1.13)	(0.95,1.11)	(0.96,1.13)
Trust				
Low	1	1	1	1
High	1.24***	1.23***	1.19***	1.28***
	(1.15,1.33)	(1.14,1.33)	(1.11,1.28)	(1.19,1.39)
County-level social capital				
Frequency of socializing (%)				
	0.99	1.00	1.01*	1.01*
	(0.98,1.01)	(0.99,1.01)	(1.00,1.02)	(1.00,1.02)
Civic participation (%)				
	1.00	1.00	0.99	1.00
	(0.99,1.01)	(0.99,1.00)	(0.98,1.00)	(0.99,1.00)
Trust (%)				
	1.00	1.01	1.00	1.01
	(0.99,1.01)	(1.00,1.02)	(0.99,1.01)	(1.00,1.02)
<hr/>				
<i>N of individuals</i>	10,827	11,104	10,663	10,235
<i>N of counties</i>	133	131	126	130

* p < 0.05, ** p < 0.01, *** p < 0.001

Supplementary Table 11. Sensitivity analysis on associations of individual- and county-level social capital with mental health, 2010-2015 (Two-level ordinal logistic model)

	2010	2012	2013	2015
	Adjusted OR	Adjusted OR	Adjusted OR	Adjusted OR
	(95% CI)	(95% CI)	(95% CI)	(95% CI)
Sociodemographic factors				
Gender				
Female	1	1	1	1
Male	1.23*** (1.14,1.32)	1.37*** (1.27,1.47)	1.17*** (1.09,1.26)	1.23*** (1.14,1.32)
Age	0.99*** (0.99,0.99)	0.99*** (0.99,0.99)	0.99*** (0.99,0.99)	0.99*** (0.99,0.99)
Ethnicity				
Non-Han	1	1	1	1
Han	0.81* (0.69,0.96)	0.90 (0.76,1.07)	0.94 (0.79,1.11)	0.95 (0.80,1.14)
Marriage				
Single/separated/divorced/widowed	1	1	1	1
Cohabit/married	1.23*** (1.12,1.35)	1.23*** (1.12,1.34)	1.21*** (1.10,1.33)	1.14** (1.04,1.25)
Socioeconomic factors				
Education				
Primary school or below	1	1	1	1
Junior secondary school	1.35*** (1.22,1.49)	1.23*** (1.11,1.35)	1.24*** (1.12,1.37)	1.31*** (1.19,1.45)
Senior secondary school or equal	1.42*** (1.27,1.60)	1.49*** (1.33,1.68)	1.38*** (1.22,1.56)	1.51*** (1.34,1.71)
College or above	1.42*** (1.22,1.64)	1.50*** (1.30,1.74)	1.47*** (1.26,1.70)	1.62*** (1.39,1.89)
Poverty				
Poor	1	1	1	1
Non-poor	1.79*** (1.60,2.01)	1.70*** (1.53,1.89)	1.65*** (1.47,1.84)	1.56*** (1.40,1.73)
Do not know income	1.94*** (1.62,2.31)	1.57*** (1.34,1.85)	1.38*** (1.17,1.63)	1.40*** (1.16,1.68)
Occupation				
Skill level 3 or 4	1	1	1	1
Skill level 2	1.06 (0.93,1.22)	1.05 (0.92,1.19)	1.06 (0.93,1.22)	1.11 (0.96,1.28)
Skill level 1	1.19 (0.95,1.49)	1.06 (0.84,1.34)	0.99 (0.79,1.24)	1.03 (0.82,1.29)
Non-employed	0.96 (0.83,1.11)	1.11 (0.98,1.27)	1.03 (0.89,1.18)	1.07 (0.92,1.24)
Place of residence				

Rural	1	1	1	1
Urban	1.11*	1.03	1.10	1.19***
	(1.01,1.22)	(0.93,1.13)	(0.99,1.21)	(1.08,1.31)
Individual-level social capital				
Frequency of socializing				
Low	1	1	1	1
High	1.21***	1.20***	1.22***	1.28***
	(1.11,1.32)	(1.11,1.30)	(1.12,1.33)	(1.18,1.40)
Civic participation				
No	1	1	1	1
Yes	0.97	1.04	1.12**	1.06
	(0.90,1.05)	(0.96,1.12)	(1.04,1.22)	(0.98,1.15)
Trust				
Low	1	1	1	1
High	1.36***	1.32***	1.35***	1.35***
	(1.26,1.47)	(1.22,1.42)	(1.25,1.45)	(1.25,1.46)
County-level social capital				
Frequency of socializing (%)				
	1.00	1.00	1.01	1.00
	(0.99,1.02)	(0.99,1.01)	(0.99,1.02)	(0.99,1.01)
Civic participation (%)				
	1.01	1.01*	1.00	1.01
	(1.00,1.01)	(1.00,1.02)	(0.99,1.01)	(1.00,1.01)
Trust (%)				
	0.99	1.00	0.99	1.00
	(0.98,1.00)	(1.00,1.01)	(0.98,1.00)	(0.99,1.01)
<hr/>				
<i>N of individuals</i>	10,827	11,104	10,663	10,235
<i>N of counties</i>	133	131	126	130

* p < 0.05, ** p < 0.01, *** p < 0.001

References

- 1 National People's Congress. Organic Law of the Urban Residents Committee of the People's Republic of China. 2010. http://www.npc.gov.cn/wxzl/gongbao/1989-12/26/content_1481131.htm (accessed Feb 9, 2020).
- 2 National People's Congress. Organic Law of the Villagers' Committees of the People's Republic of China. 1989. http://www.gov.cn/flfg/2010-10/28/content_1732986.htm (accessed Feb 9, 2020).
- 3 Borgonovi F. A life-cycle approach to the analysis of the relationship between social capital and health in Britain. *Social Science & Medicine* 2010; **71**: 1927–34.
- 4 Islam MK, Gerdtham U-G, Gullberg B, Lindström M, Merlo J. Social capital externalities and mortality in Sweden. *Economics & Human Biology* 2008; **6**: 19–42.
- 5 Iversen T. An exploratory study of associations between social capital and self-assessed health in Norway. *Health Economics, Policy and Law* 2008; **3**: 349–64.
- 6 Sundquist J, Hamano T, Li X, Kawakami N, Shiwaku K, Sundquist K. Neighborhood linking social capital as a predictor of psychiatric medication prescription in the elderly: A Swedish national cohort study. *Journal of Psychiatric Research* 2014; **55**: 44–51.
- 7 Subramanian SV, Lochner KA, Kawachi I. Neighborhood differences in social capital: a compositional artifact or a contextual construct? *Health & Place* 2003; **9**: 33–44.
- 8 Mohnen SM, Groenewegen PP, Völker B, Flap H. Neighborhood social capital and individual health. *Social Science & Medicine* 2011; **72**: 660–7.
- 9 Han S. Compositional and contextual associations of social capital and self-rated health in Seoul, South Korea: A multilevel analysis of longitudinal evidence. *Social Science & Medicine* 2013; **80**: 113–20.
- 10 Snelgrove JW, Pikhart H, Stafford M. A multilevel analysis of social capital and self-rated health: Evidence from the British Household Panel Survey. *Social Science & Medicine* 2009; **68**: 1993–2001.
- 11 International Labour Office. International Standard Classification of Occupations. Geneva, 2012 https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_172572.pdf (accessed March 10, 2020).
- 12 Asparouhov T. General Multi-Level Modeling with Sampling Weights. *Communications in Statistics - Theory and Methods* 2006; **35**: 439–60.
- 13 Pfeiffermann D, Skinner CJ, Holmes DJ, Goldstein H, Rasbash J. Weighting for unequal selection probabilities in multilevel models. *Journal of the Royal Statistical Society: Series B (Statistical Methodology)* 1998; **60**: 23–40.
- 14 Rabe-Hesketh S, Skrondal A. Multilevel modelling of complex survey data. *Journal of the Royal Statistical Society: Series A (Statistics in Society)* 2006; **169**: 805–27.

- 15 Carle AC. Fitting multilevel models in complex survey data with design weights: Recommendations. *BMC Medical Research Methodology* 2009; **9**. DOI:10.1186/1471-2288-9-49.