

Online Resource 1

The association between ADL disability and subjective well-being among older adults in China: a moderated mediation model of social participation and subjective economic status

Aging Clinical and Experimental Research

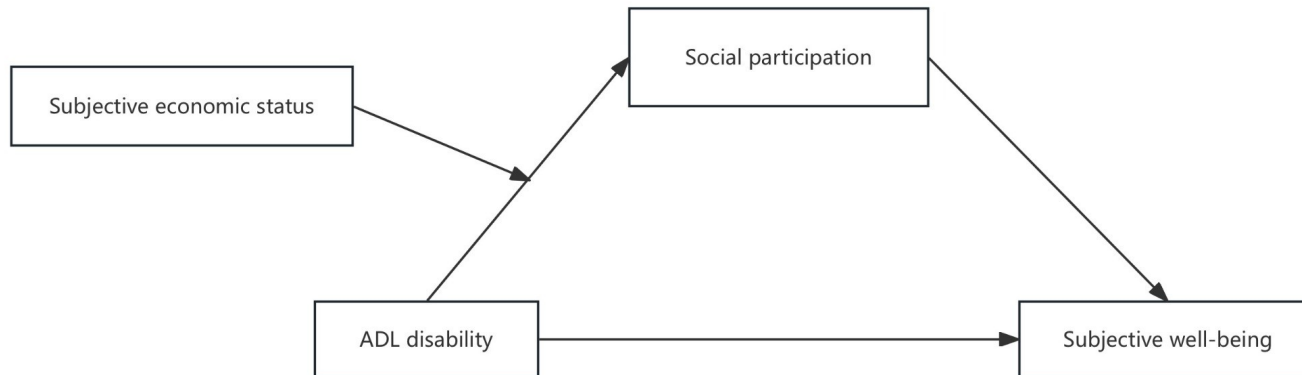
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Fig. S1 Conceptual model of the first-stage moderated mediation analysis



ADL disability was specified as the independent variable, social participation as the mediator, subjective economic status as the moderator of the first-stage ADL disability-social participation association, and subjective well-being as the dependent variable.

Supplementary Table S1. Pearson correlations among analytic variables (N = 8,853)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1. SWB	1.000																					
2. ADL	-0.170**	1.000																				
3. SP	0.277**	-0.265**	1.000																			
4. SES	0.278**	-0.013	0.191**	1.000																		
5. Age	-0.116**	0.367**	-0.391**	0.026*	1.000																	
6. Male	0.073**	-0.074**	0.232**	0.057**	-0.102**	1.000																
7. Edu	0.176**	-0.088**	0.488**	0.196**	-0.318**	0.341**	1.000															
8. Married	0.129**	-0.204**	0.297**	0.022*	-0.544**	0.297**	0.314**	1.000														
9. Alone	-0.064**	-0.101**	-0.048**	-0.072**	0.039**	-0.083**	-0.090**	-0.336**	1.000													
10. Inst	-0.036**	0.126**	0.006	0.034**	0.078**	-0.017	0.040**	-0.107**	-0.079**	1.000												
11. SRH	0.487**	-0.145**	0.120**	0.237**	0.002	0.041**	0.037**	-0.009	-0.010	-0.015	1.000											
12. Chronic	-0.037**	0.070**	0.143**	0.044**	-0.074**	-0.007	0.208**	0.045**	-0.023*	0.066**	-0.225**	1.000										
13. IADL	-0.243**	0.568**	-0.450**	-0.035**	0.659**	-0.165**	-0.260**	-0.408**	-0.064**	0.140**	-0.169**	0.057**	1.000									
14. MMSE	0.234**	-0.425**	0.414**	0.090**	-0.502**	0.196**	0.328**	0.329**	0.003	-0.053**	0.128**	0.072**	-0.547**	1.000								
15. Exercise	0.235**	-0.185**	0.368**	0.121**	-0.198**	0.104**	0.235**	0.132**	-0.003	0.017	0.135**	0.074**	-0.300**	0.194**	1.000							
16. Fruit	0.202**	0.022*	0.198**	0.165**	-0.015	0.005	0.238**	0.036**	-0.051**	0.068**	0.125**	0.098**	-0.011	0.089**	0.153**	1.000						
17. Sleep	0.302**	-0.032**	0.075**	0.159**	0.005	0.113**	0.048**	0.034**	-0.042**	-0.008	0.287**	-0.101**	-0.061**	0.048**	0.076**	0.094**	1.000					
18. Smoking	0.053**	-0.073**	0.106**	-0.011	-0.107**	0.345**	0.081**	0.127**	-0.015	-0.036**	0.037**	-0.077**	-0.146**	0.088**	0.031**	-0.057**	0.068**	1.000				
19. Drinking	0.090**	-0.076**	0.132**	0.010	-0.100**	0.282**	0.094**	0.124**	-0.016	-0.031**	0.097**	-0.071**	-0.134**	0.088**	0.044**	-0.013	0.071**	0.305**	1.000			
20. Comm	0.010	0.034**	0.068**	0.052**	-0.018	0.012	0.034**	0.033**	-0.025*	0.031**	0.009	0.058**	0.006	0.003	0.011	-0.023*	0.014	-0.019	-0.003	1.000		
21. Child	-0.061**	-0.047**	-0.043**	-0.084**	-0.014	-0.060**	-0.125**	-0.011	0.021*	-0.033**	-0.030**	-0.043**	-0.034**	0.003	-0.070**	-0.092**	-0.034*	-0.000	-0.014	0.045**	1.000	
22. Insurance	0.016	-0.049**	0.084**	0.042**	-0.079**	0.058**	0.072**	0.049**	0.005	-0.024*	-0.006	0.028**	-0.084**	0.072**	0.023*	0.002	0.004	0.029**	0.014	0.048**	-0.017	1.000

Note. Two-sided Pearson correlations are shown. *P < .05; **P < .01; ***P < .001. Abbreviations: ADL, activities of daily living; Comm, community; Edu, education; IADL, instrumental activities of daily living; MMSE, Mini-Mental State Examination; SES, subjective economic status; SP, social participation; SRH, self-rated health; supp, support; svc, service; SWB, subjective well-being.

Supplementary Table S2. Sensitivity analyses excluding participants aged >100 years and institutional residents

Association component	Primary analysis (n = 8,853)	Excluding participants aged >100 years (n = 8,117)	95% CI	Excluding institutional residents (n = 8,573)	95% CI
Total association, c	-0.0687	-0.0784	—	-0.0850	—
Indirect association, ab	-0.0105*	-0.0136*	[-0.0216, -0.0057]	-0.0080*	[-0.0144, -0.0017]
Proportion mediated	15.4%	17.4%	—	9.5%	—

Note. * The bootstrap 95% CI excludes zero. A total of 736 participants aged >100 years and 280 institutional residents were excluded in the respective sensitivity analyses.

Supplementary Table S3. Mediation analyses for components of subjective well-being

Association component	Positive well-being	95% CI	Reverse-scored negative well-being	95% CI	Life satisfaction	95% CI
Total association, c	-0.0444	—	-0.0297	—	0.0054	—
Direct association, c'	-0.0375	—	-0.0266	—	0.0060	—
Indirect association, ab	-0.0069*	[-0.0111, -0.0027]	-0.0031*	[-0.0054, -0.0008]	-0.0005	[-0.0011, 0.0000]
Proportion mediated	15.5%	—	10.4%	—	—	—

Note. * The bootstrap 95% CI excludes zero. All models were adjusted for the same covariates as the primary analysis. The proportion mediated was not reported for life satisfaction because the total and indirect associations had opposite signs.

Supplementary Table S4. Variance inflation factor diagnostics for assessed predictors

Predictor	VIF	Tolerance (1/VIF)
Age	2.43	0.411
Male	1.45	0.688
Years of education	1.76	0.569
Currently married	1.88	0.532
Living alone	1.24	0.809
Living in an institution	1.06	0.942
Self-rated health score	1.22	0.816
Work income	1.32	0.759
Pension income	1.73	0.579
Government/community assistance	1.14	0.880
Other sources	1.16	0.864
ADL disability score	1.57	0.637
IADL disability	2.70	0.371
23-item MMSE-derived cognitive score	1.68	0.596
Social participation	1.77	0.564
Subjective economic status	1.18	0.850
Regular exercise	1.24	0.805
Daily or near-daily fresh fruit intake	1.16	0.863
Good or very good sleep quality	1.12	0.894
Current smoking	1.22	0.820
Current alcohol use	1.17	0.856
Availability of ≥ 1 community-based service	1.02	0.980
Financial support from children or grandchildren	1.09	0.917
Any social security or commercial insurance	1.02	0.978
Mean VIF	1.43	—

Note. VIF, variance inflation factor. Among the 24 assessed predictors, the maximum VIF was 2.70 for IADL disability and the mean VIF was 1.43.

Supplementary Table S5. Ordinal logistic regression of subjective well-being quintiles

Variable	B	Robust SE	95% CI	P
Key study variables				
ADL	0.000	0.021	[−0.041, 0.041]	1.000
Social participation	0.053	0.007	[0.039, 0.067]	< 0.001
Subjective economic status	0.336	0.035	[0.267, 0.405]	< 0.001
Primary source of financial support				
Work income	−0.001	0.075	[−0.148, 0.146]	0.989
Pension income	0.134	0.060	[0.016, 0.252]	0.026
Government/community assistance	0.005	0.072	[−0.136, 0.146]	0.945
Other sources	0.215	0.071	[0.076, 0.354]	0.002
Sociodemographic characteristics				
Age	0.010	0.003	[0.004, 0.016]	< 0.001
Male	−0.237	0.049	[−0.333, −0.141]	< 0.001
Years of education	0.007	0.006	[−0.005, 0.019]	0.243
Currently married	0.223	0.056	[0.113, 0.333]	< 0.001
Living alone	−0.159	0.060	[−0.277, −0.041]	0.008
Living in an institution	−0.485	0.122	[−0.724, −0.246]	< 0.001
Health-related characteristics				
Self-rated health score	0.862	0.028	[0.807, 0.917]	< 0.001
No. of self-reported chronic conditions	0.053	0.014	[0.026, 0.080]	< 0.001
IADL	−0.050	0.011	[−0.072, −0.028]	< 0.001
23-item MMSE-derived cognitive score	0.033	0.006	[0.021, 0.045]	< 0.001
Health-related behaviours				
Regular exercise	0.377	0.046	[0.287, 0.467]	< 0.001
Daily or near-daily fresh fruit intake	0.407	0.051	[0.307, 0.507]	< 0.001
Good or very good sleep quality	0.675	0.042	[0.593, 0.757]	< 0.001
Current smoking	0.112	0.061	[−0.008, 0.232]	0.066
Current alcohol use	0.168	0.059	[0.052, 0.284]	0.004
Social resources				
Availability of ≥1 community-based service	−0.047	0.043	[−0.131, 0.037]	0.274
Financial support from children or grandchildren	−0.071	0.048	[−0.165, 0.023]	0.139
Any social security or commercial insurance	−0.113	0.099	[−0.307, 0.081]	0.254

Note. The dependent variable was SWB quintile (Q1-Q5), with higher categories indicating greater subjective well-being. B values are log-odds coefficients from a fully adjusted proportional-odds ordinal logistic regression with robust SEs. Coefficients, SEs, and 95% CIs are reported to three decimal places. Exact two-sided P values are reported to three decimal places; values smaller than 0.001 are shown as P < 0.001. Reference categories were female, not currently married, living with family members, and primary financial support from children or unclassified sources; absence of the stated characteristic was the reference for other binary indicators. N = 8,853. Abbreviations: ADL, activities of daily living; CI, confidence interval; IADL, instrumental activities of daily living; MMSE, Mini-Mental State Examination; SE, standard error; SWB, subjective well-being.