Online Resource 1 Psychometric Evaluation of the Study Measures

Perceived social support and psychosocial need satisfaction among rural left-behind older adults

Purpose and analytic approach

This online resource reports the complete English translations of the retained questionnaire items and the psychometric analyses used in the study. Exploratory factor analyses were conducted separately for the 29 perceived-social-support items and the 18 psychosocial-need-satisfactionitems using principal axis factoring with Promax rotation. The number of factors was evaluated using parallel analysis with 1,000 random samples. Because Promax permits correlated factors, pattern coefficients are reported.

Items were considered satisfactory when the loading on the intended factor was at least .40, cross-loadings were below .30, and communality was above .30. Discriminant validity across the four support dimensions and three need-satisfaction dimensions was evaluated with the heterotrait-monotrait ratio of correlations. Values below .85 were treated as evidence that the constructs were empirically distinguishable.

The questionnaire was administered in Chinese. The item wordings below are English translations prepared for reporting purposes.

Item screening and scale scoring

The administered questionnaire initially contained 40 perceived-support items. Two items in the instrumental-support section had identical wording; one duplicate item was removed during data preparation, leaving 39 unique items. A subsequent content review excluded 10 items that primarily assessed general satisfaction, perceived importance, psychological outcomes, or content that overlapped with psychosocial need satisfaction. The final measure contained 29 items: eight instrumental-support items, nine informational-support items, seven social-companionship items, and five emotional-support items. The excluded items and reasons for exclusion are reported in Table S1.

Table S1

Summary of the exploratory factor analyses

Scale	Items	KMO	Bartlett chi-square	df	p	PA factors	Factors extracted	Variance explained
Perceived social support	29	0.932	3697.2	406	< .001	4	4	60.339%
Psychosocial need satisfaction	18	0.928	2326.5	153	< .001	3	3	62.942%

Note. PA = parallel analysis.

Table S1

Excluded Items and Reasons for Exclusion

Original dimension and item number	Excluded item	Reason for exclusion
Instrumental support, Item 2	I am satisfied with my current financial situation.	Assesses financial satisfaction rather than perceived support.
Informational support, Item 8	I believe that access to accurate information is important in my daily life.	Assesses the perceived importance of information rather than perceived informational support.
Social companionship, Item 5	I am satisfied with my current level of social activity.	Assesses satisfaction with social activity and is conceptually close to an outcome measure.

Social companionship, Item 8	I feel that I am an important member of the village.	More closely reflects the satisfaction of belonging or esteem needs.
Social companionship, Item 10	My social needs are adequately met.	Directly assesses need satisfaction and overlaps with the outcome variable.
Emotional support, Item 3	I am satisfied with the care I currently receive from my adult children.	Primarily reflects practical care and satisfaction rather than emotional support.
Emotional support, Item 4	I feel valued within my family.	More closely reflects esteem need satisfaction.
Emotional support, Item 5	I believe that I can still make valuable contributions to my family.	More closely reflects self-worth or self-actualization.
Emotional support, Item 7	I rarely feel lonely or isolated.	Assesses a psychological or social outcome rather than emotional support.
Emotional support, Item 10	I feel confident about my future.	Assesses a positive psychological state rather than emotional support.

Table S2

Promax-rotated pattern matrix for perceived social support items

Item	English item wording	Target dimension	Instrumental	Informational	Social companionship	Emotional	h2
IS1	My sources of income are sufficient to meet my basic living needs.	Instrumental	.746	.001	.043	.004	.590
IS3	Financial support from my children is sufficient to meet my needs.	Instrumental	.774	.029	-.055	.034	.608
IS4	I can obtain government financial subsidies in a timely manner.	Instrumental	.743	-.000	-.033	-.013	.523
IS6	When I encounter financial difficulties, I can receive timely help.	Instrumental	.732	-.030	.000	.069	.563
IS7	I can obtain the help I need with daily activities such as laundry, cooking, and shopping.	Instrumental	.758	.009	-.009	.012	.582
IS8	I am satisfied with the government or community services I currently receive.	Instrumental	.752	.008	-.009	-.023	.550
IS9	The community or relevant organizations can provide the practical services I need.	Instrumental	.759	.017	.004	-.067	.551
IS10	I receive adequate support with activities of daily living.	Instrumental	.781	-.021	.029	-.004	.612
IN1	I can obtain information about welfare policies relevant to me in a timely manner.	Informational	-.058	.822	-.028	.019	.632
IN2	I have multiple channels through which I can obtain the information I need.	Informational	.054	.765	.016	-.021	.621
IN3	I can understand government policies and welfare information.	Informational	.002	.812	.020	-.039	.645
IN4	When I need information, I can obtain it easily.	Informational	-.044	.751	-.109	.131	.578
IN5	I am aware of the services provided by the government or community for older adults.	Informational	.038	.759	-.027	.004	.589
IN6	I can understand the health and medical information I receive.	Informational	-.028	.830	.066	-.066	.666
IN7	I can understand the details of social welfare policies.	Informational	.040	.827	.016	-.036	.699
IN9	I can obtain guidance and advice from professionals.	Informational	-.012	.793	.037	.013	.658
IN10	I am satisfied with the ways in which I currently obtain information.	Informational	.022	.791	.006	.018	.660

Item	English item wording	Target dimension	Instrumental	Informational	Social companionship	Emotional	h2
SC1	The community where I live provides adequate recreational spaces.	Social companionship	-.057	.035	.824	-.036	.640
SC2	I frequently participate in activities organized by the village or community.	Social companionship	.087	.055	.685	-.015	.558
SC3	I have regular friends with whom I can talk or take walks.	Social companionship	.004	-.050	.744	.102	.601
SC4	My daily life includes varied social interaction.	Social companionship	-.005	-.063	.764	.062	.585
SC6	I maintain good relationships with my neighbors and friends.	Social companionship	-.043	-.027	.784	.030	.591
SC7	I can use modern communication tools to stay in contact with others.	Social companionship	-.002	.023	.806	-.067	.619
SC9	I have my own social circle in the village.	Social companionship	.040	.078	.718	-.052	.562
EM1	I maintain a good emotional relationship with my children.	Emotional	.044	.006	.056	.711	.579
EM2	My children show sufficient concern for my psychological and emotional well-being.	Emotional	.018	.020	.047	.737	.606
EM6	When I am troubled, someone is available to listen to me and help me.	Emotional	.001	-.087	-.002	.834	.631
EM8	Village officials show concern for my emotional well-being.	Emotional	-.009	.093	-.002	.690	.541
EM9	I can obtain psychological support and emotional comfort when needed.	Emotional	-.024	.012	-.052	.837	.659

Note. N = 199. PAF with Promax rotation. Bold coefficients identify the theoretically expected factor. The minimum target loading was .685, the maximum cross-loading was .131, and no item failed the hypothesized target factor

Table S3

Promax-rotated pattern matrix for psychosocial need satisfaction items

Item	English item wording	Target dimension	Social belonging	Esteem	Self-actualization	h2
SB1	I often chat with my neighbors and feel close to them.	Social belonging	.727	.107	-.000	.616
SB2	Although my children do not live nearby, I frequently stay in contact with them by telephone or video call.	Social belonging	.854	-.116	.014	.659
SB3	I have long-standing friends in the village with whom I can talk.	Social belonging	.693	.085	.019	.563
SB4	I feel that I am part of this village and that people here know me.	Social belonging	.693	.033	.067	.565
SB5	When I need help, someone is willing to help me.	Social belonging	.848	-.043	-.033	.654
SB6	I seldom feel lonely because people around me care about me.	Social belonging	.856	-.014	-.022	.699
ES1	My family still seeks my opinion about important and everyday family matters.	Esteem	-.049	.843	.023	.693
ES2	People in the village regard me as an experienced and respected older person.	Esteem	-.017	.701	.114	.581
ES3	I believe that my life experience and knowledge are valuable.	Esteem	-.017	.844	-.047	.658
ES4	Although my children work away from home, they still respect me.	Esteem	-.004	.882	-.094	.691
ES5	I play an important role in caring for my grandchildren.	Esteem	.014	.774	-.006	.605
ES6	I feel that I am still useful in old age and am not a burden on others.	Esteem	.037	.716	.061	.594
SA1	I can pass my life experience on to younger people.	Self-actualization	-.010	.023	.778	.617
SA2	I can still do farm work or housework within my abilities, which gives me a sense of satisfaction.	Self-actualization	.027	.015	.776	.641
SA3	I participate in village activities, such as weddings, funerals, and village meetings, and find this meaningful.	Self-actualization	-.000	-.059	.840	.653
SA4	I feel that my life has been worthwhile and valuable.	Self-actualization	-.050	-.023	.855	.663

Item	English item wording	Target dimension	Social belonging	Esteem	Self-actualization	h2
SA5	I can still learn new things, such as using a mobile phone or learning about new policies.	Self-actualization	-.012	.050	.731	.566
SA6	I hope to remain healthy and live a long life so that I can continue contributing to my family and village.	Self-actualization	.082	-.013	.740	.613

Note. N = 199. PAF with Promax rotation. Bold coefficients identify the prespecified target factor. The minimum target loading was .693, the maximum cross-loading was .116, all retained items met the stated loading and communality criteria

Table S4

Factor correlation matrices from the Promax solutions

Panel A Perceived social support

Dimension	Instrumental	Informational	Social companionship	Emotional
Instrumental	1.000			
Informational	.458	1.000		
Social companionship	.440	.429	1.000	
Emotional	.425	.494	.449	1.000

Panel B Psychosocial need satisfaction

Dimension	Social belonging	Esteem	Self-actualization
Social belonging	1.000		
Esteem	.491	1.000	
Self-actualization	.586	.561	1.000

Note. Factor correlations are based on the oblique Promax solutions.

Table S5

Heterotrait-monotrait ratios across the seven study constructs

Dimension	Instrumental	Informational	Social companionship	Emotional	Social belonging	Esteem	Self-actualization
Instrumental	-						
Informational	.462	-					
Social companionship	.444	.441	-				
Emotional	.439	.510	.471	-			
Social belonging	.473	.459	.572	.489	-		
Esteem	.518	.499	.548	.572	.500	-	

Dimension	Instrumental	Informational	Social companionship	Emotional	Social belonging	Esteem	Self-actualization
Self-actualization	.466	.474	.510	.514	.601	.567	-

Note. The maximum HTMT value was .601. All values were below the .85 criterion, supporting discriminant validity among the four support dimensions and three psychosocial-need-satisfaction dimensions.