



ARTICLE

Assessing Flourishing in a Collectivist Context: Psychometric Evaluation of the Flourishing Scale in Chinese Middle School Students

Baijun Chen^{1,#}, Song Gui^{1,2,#}, Yujing Xie³, Lijun Ma^{3,*} and Can Jiao^{1,4,*}

¹The Shenzhen Humanities & Social Sciences Key Research Bases of the Center for Mental Health, Shenzhen University, Shenzhen, China

²School of Psychology, Shenzhen University, Shenzhen, China

³School of Public Health and Management, Guangzhou University of Chinese Medicine, Guangzhou, China

⁴School of Government, Shenzhen University, Shenzhen, China

*Corresponding Authors: Lijun Ma. Email: malj@gzucm.edu.cn; Can Jiao. Email: jiaocan@szu.edu.cn

#These authors are co-first authors of the article

Received: 01 December 2025; Accepted: 11 February 2026; Published: 31 March 2026

ABSTRACT: Objectives: Flourishing, a central concept in positive psychology, encompasses multifaceted dimensions such as meaning, positive relationships, and engagement. Despite growing research interest, empirical studies focusing specifically on the flourishing of middle school students remain scarce. Given the critical need to promote flourishing among Chinese middle school students, the study aimed to adapt Diener's Flourishing Scale for Chinese middle school students, examine its psychometric properties, and establish its measurement invariance across gender and time within this population. **Methods:** Participants were recruited from secondary schools in two Chinese provinces. The Chinese versions of the Flourishing Scale (CFS), along with the Index of Well-being (IWB) and the Satisfaction with Life Scale (SWLS), were employed. Data collection occurred in three phases, the first two for exploratory factor analysis (EFA) and confirmatory factor analysis (CFA), respectively, and the last one for testing longitudinal measurement invariance and gender measurement invariance. **Results:** The CFS demonstrated excellent discrimination and consistency with Diener's original model. Significant positive correlations emerged between the CFS scores and well-being ($r = 0.75$, $p < 0.01$) as well as life satisfaction ($r = 0.74$, $p < 0.01$). Cronbach's α was 0.948, and the Pearson correlation coefficient (PCC) for test-retest reliability was 0.85 ($p < 0.01$). The CFS demonstrated strict measurement invariance across both gender and time. **Conclusion:** The CFS demonstrates robust psychometric properties—including structural validity, reliability, and measurement invariance—for its application among Chinese middle school students.

KEYWORDS: Flourishing scale; Chinese middle school students; psychometric properties; positive psychology

1 Introduction

Flourishing represents a state of optimal human functioning that extends beyond the absence of mental illness, encapsulating positive emotions, psychological, and social functioning [1]. Despite growing scholarly interest in this construct, questions remain regarding the optimal conceptualization and measurement of flourishing across diverse cultural contexts, particularly in collectivist societies and among middle school students. The middle school stage, characterized by rapid biopsychosocial development and significant academic pressures, constitutes a formative period during which flourishing is strongly linked to positive academic, behavioral, and long-term developmental outcomes [2,3]. Therefore, valid and developmentally appropriate measures are crucial for both research and practice aimed at promoting youth well-being.

The manifestation and antecedents of flourishing are profoundly shaped by cultural values [4]. In individualistic cultures, well-being often emphasizes personal achievement, autonomy, and self-esteem [5,6]. In contrast, in collectivist societies such as China, well-being is frequently grounded in social harmony, familial obligation, and group belonging [7–9], suggesting potential differences in how Chinese middle school students interpret and prioritize aspects of flourishing. While the Flourishing Scale (FS) developed by Diener et al. [10] has been widely used, its validation in collectivist East Asian contexts, specifically with Chinese middle school students, remains limited. Recent positive psychology research in China and other collectivist cultures has begun to explore these nuances [11,12], underscoring the necessity for measures that are not only linguistically translated but also culturally adapted [13].

Currently, there is a lack of a psychometrically validated measure of flourishing tailored for Chinese middle school students. To address this gap, this study aimed to (1) culturally adapt the FS for Chinese middle school students, resulting in the Chinese version of the Flourishing Scale (CFS); (2) assess its psychometric properties including factor structure, internal consistency, test-retest reliability, and criterion validity against well-being and life satisfaction measures; and (3) test its measurement invariance across gender and over time. Establishing a reliable and valid measure will support culturally informed assessment and intervention efforts, thereby contributing to both local and global positive psychology research.

2 Methods

2.1 Participants

Participants were recruited from three middle schools in Guangdong Province between April and July 2025. Within each school, two classes were randomly selected from each of the three junior grade levels. Data collection was conducted in three phases: the first two for exploratory factor analysis (EFA) and confirmatory factor analysis (CFA), respectively, and the last one for testing longitudinal measurement invariance and gender measurement invariance.

In Phase One, 360 questionnaires were distributed. After excluding invalid responses containing errors, omissions, careless completion, or logical inconsistencies, 328 valid questionnaires (Sample 1) were retained, yielding a valid response rate of 91.11%.

In Phase Two, 378 questionnaires were distributed. After applying the same screening criteria as in Phase One, 342 valid questionnaires (Sample 2) were retained, yielding a valid response rate of 90.48%. Following a four-week interval, a repeated measures assessment was conducted with a subsample of 108 participants from three classes in Phase Two. This procedure retained 104 valid responses (Sample 3; Valid response rate of 96.30%).

In Phase Three, using a cluster sampling approach, seventh- and eighth-grade students from secondary schools in Guangdong and Anhui provinces were recruited as participants. A total of 1580 questionnaires were distributed. After excluding invalid responses using the same criteria in Phase One, 1526 questionnaires (Sample 4) were retained, yielding a valid response rate of 96.58%. After a four-month interval, the same cohort was reassessed. Following the removal of invalid responses, 1171 (Sample 5) matched. Descriptive statistics and the purpose of each sample are presented in Table 1.

Table 1: Descriptive statistics and purpose of samples.

Sample	N	Gender (N, %)	Grade (N, %)	Primary Purpose
1	328	Male: 151 (46.04%) Female: 177 (53.96%)	Grade 7: 110 (33.54%) Grade 8: 115 (35.06%) Grade 9: 103 (31.40%)	Item analysis and EFA
2	342	Male: 179 (52.34%) Female: 163 (47.66%)	Grade 7: 121 (35.38%) Grade 8: 103 (30.70%) Grade 9: 116 (33.92%)	CFA
3	104	Male: 50 (48.08%) Female: 54 (51.92%)	Grade 7: 36 (34.62%) Grade 8: 35 (33.65%) Grade 9: 33 (31.73%)	Test-retest reliability
4	1526	Male: 797 (52.23%) Female: 729 (47.77%)	Grade 7: 781 (51.18%) Grade 8: 745 (48.82%)	Measurement invariance across gender
5	1171	Male: 598 (51.07%) Female: 573 (48.93%)	Grade 7: 601 (51.32%) Grade 8: 570 (48.68%)	Measurement invariance across time

Note: EFA, exploratory factor analysis; CFA, confirmatory factor analysis.

2.2 Measures

2.2.1 Chinese Version of the Flourishing Scale (CFS)

The CFS was adapted from the FS developed by Diener et al. [10]. The FS comprises eight items measuring multidimensional constructions that aforementioned. Respondents rate the items on a 7-point Likert scale ranging from 1 (completely disagree) to 7 (completely agree). No items are reverse-coded, yielding a total score range of 8–56, with higher scores indicating better positive psychological functioning.

The CFS employed in this study underwent rigorous cross-cultural adaptation. A translation-backtranslation procedure was conducted by a panel comprising two doctoral-level psychologists, five master's-level psychologists, and two master's-level English linguists. This process prioritized linguistic equivalence while optimizing conceptual relevance for the target population. Subsequently, pilot testing and cognitive interviews were conducted with 30 randomly selected middle school students in Shenzhen to assess the comprehensibility and cultural appropriateness of each item. Final revision incorporated participants' feedback to ensure the scale's developmental appropriateness and response validity for Chinese middle school students. Cronbach's α was 0.948 in this study.

2.2.2 Index of Well-Being (IWB)

The IWB, culturally adapted by Wang et al. [14] from Campbell et al. [15], was employed. This localized version demonstrates enhanced validity in the Chinese cultural background. The IWB consists of the Affective Balance Index (8 items) and Life Satisfaction (1 item). Responses were captured using a 7-point Likert scale, ranging from 1 (extremely dissatisfied) to 7 (extremely satisfied). Scoring applies differential weighting: Affective Balance Index carries a weight of 1.0, while Life Satisfaction is weighted at 1.1. Consequently, the total score range is 2.1 to 14.7, with a higher score indicating greater psychological well-being. Cronbach's α was 0.881 in this study.

2.2.3 Satisfaction with Life Scale (SWLS)

The SWLS, which was originally developed by Diener et al. [16] and validated with Chinese middle school students through cultural adaptation by Yue et al. [17], was administered. This 5-item scale employs a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Total scores range from 5 to

35, with higher scores indicating greater life satisfaction. As a widely validated measure of life satisfaction, the SWLS has been extensively utilized in cross-cultural research. Cronbach's α was 0.863 in this study.

2.3 Data Collection

The study employed a cluster-based sampling approach at the class level. Data were collected via paper-and-pencil questionnaires administered in groups during regular class sessions. All instruments were distributed and collected on-site under the supervision of a rigorously trained master's-level psychologist. Meanwhile, strict adherence to ethical guidelines and privacy protection protocols was maintained throughout the process. This study was approved by the Institutional Ethics Committee at Shenzhen University, and data collection was conducted between April and July 2025 (Reference No.: SZU_PSY_2025_013). All participants signed the informed consent form, and their legal guardians also signed the guardian consent form.

2.4 Statistical Analysis

Data were entered using EpiData 3.1 (EpiData Association, Odense, Denmark) with a dual independent entry protocol. All data underwent cross-verification, and any discrepancies were resolved through a third-party researcher examining the source data to ensure data accuracy.

Following data entry, item analysis was conducted on the first-phase data using SPSS 27.0 (IBM Corp., Armonk, NY, USA). Participants were divided into two groups using the Critical Ratio (CR) method, and independent samples *t*-tests were conducted to calculate the differences between the two groups on each item. Item-total correlations were calculated using Pearson correlation analysis. Factor loadings were computed for all items. EFA was subsequently conducted using Principal Components Analysis (PCA) with varimax rotation. PCA was chosen for initial data reduction and to examine the dominant component structure, consistent with the scale's unidimensional theoretical foundation and common practice in initial validation studies.

Confirmatory factor analysis (CFA) was performed on the second-phase data using Mplus 8.3 (Muthén & Muthén, Los Angeles, CA, USA) to evaluate the goodness-of-fit between the hypothesized dimensional structure and empirical data. The indices of the goodness-of-fit were as follows: χ^2/df , comparative fit index (CFI), Tucker-Lewis index (TLI), root mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR). Criterion validity was assessed via Pearson correlation coefficients between the CFS and its criterion measures (IWB and SWLS). Reliability analyses included computation of Cronbach's α to evaluate consistency, and test-retest was examined by Pearson correlations of data from repeated measurements. Lastly, measurement invariance analysis was performed using the repeated measurement data. Hierarchical models were sequentially specified: configural invariance, weak or metric invariance, strong or scalar invariance, and strict or error variance invariance. Model fit was compared using Satorra-Bentler scaled χ^2 difference tests ($\Delta\chi^2$ test) and changes in RMSEA, CFI, and TLI values. Invariance was established if the following criteria held true: $\Delta\chi^2$ test (i.e., *p*-value) ≥ 0.05 (i.e., nonsignificant), $\Delta\text{RMSEA} \leq 0.015$, $\Delta\text{CFI} \leq 0.01$, and $\Delta\text{TLI} \leq 0.01$ [18,19].

3 Results

3.1 Item Discrimination and Homogeneity

The item analysis results for the CFS are presented in Table 2. Discriminative power of items was assessed using the CR method. Participants were ranked by flourishing scores in descending order, with the top 27% designated as the high-score group and the bottom 27% as the low-score group. Independent

samples *t*-test revealed significantly higher scores on all items in the high-score group compared to the low-score group ($p < 0.001$), demonstrating that each item has adequate discrimination. Pearson correlation analyses indicated item-total correlations ranging from 0.79 to 0.89 ($p < 0.01$), exceeding the recommended threshold of 0.40, confirming satisfactory item homogeneity. Under a one-factor model, all items' factor loadings were between 0.62 and 0.79, exceeding the criterion of 0.45, which confirms effective measurement of the core flourishing construct.

3.2 Construct Validity

3.2.1 Exploratory Factor Analysis (EFA)

All assumptions for factor analysis were met: Kaiser-Meyer-Olkin (KMO) value reached excellence ($0.94 > 0.60$), and Bartlett's test indicated a statistically significant result ($\chi^2 = 2344;86:df = 28, p < 0.001$). These metrics collectively demonstrate strong variable intercorrelations and the presence of common factors within the correlation matrix, confirming the data's suitability for EFA.

To ensure factor structure clarity and interpretability, principal component analysis (PCA) was conducted with varimax rotation. One dominant component ($\lambda = 5.90$) was extracted, accounting for 73.80% of the total variance. This indicated that the factor effectively captures the majority of the variance of the items. The factor loadings of each item ranged from 0.79 to 0.89, confirming high measurement consistency. See Table 2 for detailed results.

Table 2: Item discrimination and homogeneity indices and exploratory factor loadings for the Chinese version of Flourishing Scale (CFS) (N = 328).

Items	High-Score Group (n = 91)	Low-Score Group (n = 90)	<i>t</i>	<i>r</i>	Factor Loadings	Exploratory Factor Loadings
1	5.53 ± 0.75	2.50 ± 1.04	22.42***	0.87**	0.76	0.87
2	5.67 ± 0.80	2.52 ± 0.99	23.50***	0.86**	0.74	0.86
3	5.71 ± 0.72	2.48 ± 1.27	21.13***	0.89**	0.79	0.89
4	6.04 ± 0.67	2.56 ± 1.14	25.06***	0.88**	0.77	0.88
5	5.36 ± 0.80	2.39 ± 0.91	23.44***	0.87**	0.75	0.87
6	5.52 ± 0.77	2.49 ± 0.95	23.58***	0.85**	0.74	0.86
7	5.77 ± 0.78	2.48 ± 1.41	19.45***	0.86**	0.73	0.85
8	5.29 ± 0.90	2.44 ± 0.97	20.42***	0.79**	0.62	0.79

Note: ** $p < 0.01$; *** $p < 0.001$. All factor loadings refer to exploratory factor analysis (EFA) results. Extraction method: principal components analysis with varimax rotation. CR, critical ratio; *r*, item-total correlation.

3.2.2 Confirmatory Factor Analysis

In general, fitting of a model is considered acceptable when meeting the following criteria: $\chi^2/df < 3$, CFI > 0.90 , TLI > 0.90 , RMSEA < 0.08 , and SRMR < 0.05 [20]. The CFA results for this study demonstrated good model fitting ($\chi^2/df = 2.821$, CFI = 0.984, TLI = 0.978, RMSEA = 0.073, and SRMR = 0.018). Fig. 1 displays the standardized path diagram derived from the CFA. All factor loadings were statistically significant and exceeded the recommended threshold. For visual clarity, error terms are omitted from the diagram.

The model visually confirms the single-factor structure of the CFS, indicating that all eight items load substantially onto a unified latent construct of flourishing. These results provide further evidence for the scale's construct validity in the Chinese middle school students.

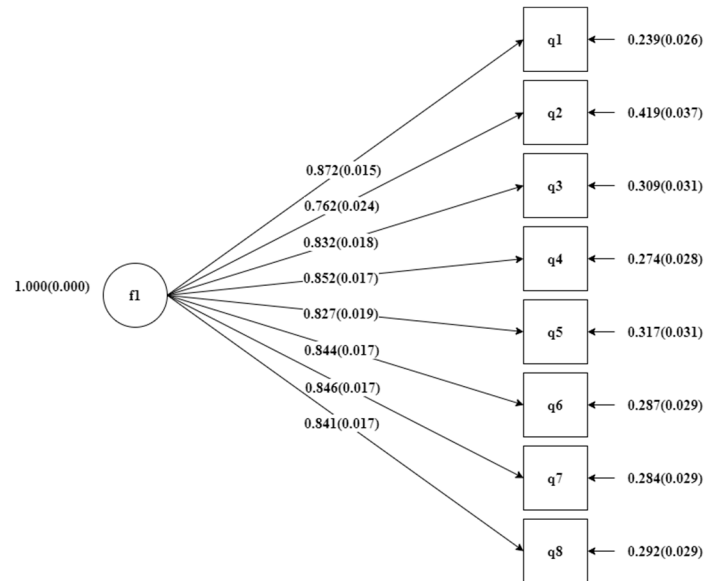


Figure 1: Standardized path diagram of the single-factor model for the Chinese version of Flourishing Scale (CFS). Note: All paths are significant at $p < 0.001$. Error terms are omitted for clarity. The values in the middle represent the standardized model estimates with their standard errors (SE). The values on the right represent the residual variances with SE. f1, flourishing; q1–8, item 1–8.

3.2.3 Criterion Validity

Using well-being and life satisfaction as criterion variables, Pearson correlation analysis (see Table 3) revealed statistically significant positive relationships between the score of the CFS and the two criteria ($p < 0.01$). The correlation coefficients (>0.60) showed strong criterion validity of the CFS.

3.3 Internal Consistency and Stability

In the current study, the CFS demonstrated excellent internal consistency with a Cronbach's α of 0.948, exceeding the criterion of 0.70. This indicates high item homogeneity and measurement reliability. The scale also demonstrated strong temporal stability, as indicated by a test-retest reliability coefficient of 0.85 at the total score level. At the item level, test-retest correlation coefficients ranged from 0.68 to 0.76. See Table 3 for detailed results. Reliability analysis confirmed that the CFS is a reliable measurement for research.

Table 3: Pearson correlations between the Chinese version of Flourishing Scale (CFS) items and external criteria (Well-being and life satisfaction) (N = 342) and test-retest reliability over four weeks (N = 104).

Item	Well-Being	Life Satisfaction	Test-Retest Correlation Coefficients
1	0.65**	0.64**	0.73**
2	0.60**	0.60**	0.70**
3	0.63**	0.60**	0.76**
4	0.67**	0.65**	0.73**
5	0.64**	0.61**	0.69**
6	0.65**	0.66**	0.68**
7	0.65**	0.67**	0.76**
8	0.61**	0.62**	0.68**
Total score	0.75**	0.74**	0.85**

Note: ** $p < 0.01$.

3.4 Measurement Invariance

3.4.1 Gender Invariance

The results of gender invariance are presented in Table 4. From configural to metric invariance, metric to scalar invariance, and scalar to error variance invariance, the $\Delta\chi^2$ Test was not significant, and the changes in RMSEA, CFI, and TLI all remained within 0.01. Thus, the CFS demonstrated strict measurement invariance across gender.

3.4.2 Longitudinal Invariance

Longitudinal invariance revealed that the $\Delta\chi^2$ Test was nonsignificant, and all changes in model fitting indices (Δ RMSEA, Δ CFI, Δ TLI) remained within acceptable thresholds when constraining from configural to strict invariance (See Table 4 for detailed results.). Consequently, strict invariance of the CFS across time was supported.

Table 4: Gender invariance (N = 1526) and longitudinal invariance (N = 1171) of the Chinese version of Flourishing Scale (CFS).

Model	Model	χ^2 (df)	RMSEA (90%CI)	CFI	TLI	$\Delta\chi^2$ (Δ df)	Δ RMSEA	Δ CFI	Δ TLI
Gender invariance (N = 1526)	Model 1	171.310 (95)	0.032 (0.025, 0.040)	0.991	0.989	-	-	-	-
	Model 2	177.786 (102)	0.031 (0.023, 0.039)	0.991	0.989	5.661 (7)	-0.001	0.000	0.000
	Model 3	185.703 (109)	0.030 (0.023, 0.038)	0.991	0.990	6.976 (7)	-0.001	0.000	0.001
	Model 4	190.464 (117)	0.029 (0.021, 0.036)	0.991	0.991	7.753 (8)	-0.001	0.000	0.001
Longitudinal invariance over four months (N = 1171)	Model 1	300.691 (95)	0.043 (0.038, 0.049)	0.986	0.983	-	-	-	-
	Model 2	310.908 (102)	0.042 (0.037, 0.047)	0.986	0.984	9.403 (7)	-0.001	0.000	0.001
	Model 3	323.028 (109)	0.041 (0.036, 0.046)	0.986	0.985	10.467 (7)	-0.001	0.000	0.001
	Model 4	319.597 (117)	0.038 (0.033, 0.044)	0.987	0.986	7.028 (8)	-0.003	0.001	0.001

Note: Model 1 = configural; Model 2 = metric; Model 3 = scalar; Model 4 = error variance. Thresholds: Δ RMSEA \leq 0.015; Δ CFI, Δ TLI \leq 0.01.

4 Discussion

4.1 General Discussion

With the rise of positive psychology, increasing attention has been directed toward mental health and well-being [21]. Flourishing embodies these two conceptions, considered synonymous with “high-level of mental well-being” [22]. This advanced psychological state deserves more nuanced exploration. The current study successfully adapted and validated the FS for use with Chinese middle school students. The CFS demonstrated strong psychometric properties, including excellent item discrimination, high internal consistency, good test-retest stability, and expected correlations with well-being and life satisfaction. Crucially, the scale exhibited strict measurement invariance across gender and over a four-month period. This means that observed differences or changes in scores can be meaningfully interpreted as reflecting true differences in flourishing levels.

4.2 Theoretical Implications

The present findings offer empirical support for the conceptualization of flourishing as a unidimensional construct reflecting optimal psychological and social functioning [23], consistent with the original framework proposed by Diener et al. [10]. The strong item-total correlations and factor loadings observed in both exploratory and confirmatory factor analyses underscore the internal coherence of the scale and its robustness in a Chinese middle school student sample.

While the structure mirrors the original, the discussion of its potential cultural meaning warrants caution. We posit, as a hypothesis for future study, that the high intercorrelation among items might reflect a culturally integrated conception of well-being where personal competence and social connectedness are perceived as more interdependent than oppositional. The perspective is consistent with relational models of flourishing in collectivist societies. The relational flourishing framework emphasizes the need to consider social harmony and contribution to community as core components of well-being in collectivist contexts [24,25]. Our findings underscore the importance of ensuring that flourishing measures, even when structurally invariant, are interpreted within their cultural frame of reference.

4.3 Practical Implications

The CFS's strong psychometric properties make it appropriate for both research and applied settings, including large-scale assessments, school-based screening, and program evaluation in Chinese middle school students. Its brevity and ease of administration make it especially suited for large-scale assessments [26] and longitudinal monitoring.

Beyond its role as an assessment instrument, the CFS can also function as a "reflection trigger" in educational contexts. For students, responding to flourishing-related items may enhance awareness of their own well-being patterns and prompt meaningful self-reflection. For educators and school psychologists, the scale offers a structured framework for initiating discussions around life purpose, relationships, and emotional functioning. In this way, the measurement process itself can serve as an entry point for well-being conversations and psychoeducational engagement.

Moreover, the confirmation of strict measurement invariance across gender and time is particularly important. It suggests that observed differences in flourishing across sexes or over developmental periods reflect true differences rather than measurement bias [27]. This finding may facilitate future research into the developmental trajectories and gender-specific correlations of flourishing in adolescence.

4.4 Limitations and Future Directions

Several limitations must be acknowledged.

First, the sample was drawn primarily from middle schools in two provinces. While this controlled for age-related confounds, it limits the generalizability of the findings to older adolescents (e.g., high school students) and to the broader geographical and socio-economic diversity of China. Future studies should validate the scale in more diverse regions, including rural populations or ethnic minority groups.

Second, the present study relied solely on self-report measures, which are vulnerable to social desirability and shared method variance [28]. Incorporating multi-informant reports (e.g., from teachers or parents) or behavioral indicators would enhance measurement validity [29].

Third, while we conducted cognitive interviews during adaptation, a deeper qualitative exploration of how Chinese middle school students subjectively understand and experience flourishing is needed to fully validate the cultural relevance of the construct and its indicators. To empirically test the cultural interpretations suggested in our discussion, future work should directly compare the factor structure and item functioning of the FS between Chinese and Western middle school students.

5 Conclusions

This study provides robust psychometric evidence for the use of the Flourishing Scale among Chinese middle school students, supporting its structural validity, reliability, and measurement invariance. Beyond methodological contribution, it highlights how flourishing manifests within a specific cultural and

developmental context. Future research should expand culturally grounded approaches to flourishing, refining measurement tools that capture both universal structures and context-specific meanings. Such tools can inform not only cross-cultural research but also locally responsive educational and psychological interventions.

Acknowledgement: Not applicable.

Funding Statement: This work was supported by Innovation Team Project of General Colleges and Universities in Guangdong Province (Grand number: 2022WCXTD004); Guangzhou University of Chinese Medicine Young Innovative and Top-notch Talent (Team) Cultivation Project, Guangzhou Philosophy and Social Sciences Development “14th Five-Year Plan” 2024 Annual Project (Co-construction Project) (Grant number: 2024GZGJ277); and Guangdong Province 2024 Annual Education Science Planning Project (Higher Education Special Project) (Grant number: 2024GXJK123).

Author Contributions: The authors confirm contribution to the paper as follows: Conceptualization, Song Gui and Can Jiao; methodology, Baijun Chen and Song Gui; validation, Baijun Chen, Song Gui and Yujing Xie; formal analysis, Baijun Chen, Song Gui and Yujing Xie; investigation, Baijun Chen and Song Gui; data curation, Baijun Chen and Song Gui; writing—original draft, Baijun Chen; writing—review and editing, Can Jiao and Lijun Ma; visualization, Song Gui; supervision, Can Jiao and Lijun Ma; project administration, Can Jiao and Lijun Ma; funding acquisition, Lijun Ma. All authors reviewed and approved the final version of the manuscript.

Availability of Data and Materials: The data that support the findings are available from the corresponding author upon reasonable request, but are not publicly available to ensure the confidentiality of the participants.

Ethics Approval: Ethical approval was obtained from the Institutional Ethics Committee at Shenzhen University and data collection was conducted between April and July 2025 (Reference No.: SZU_PSY_2025_013). All participants signed the informed consent form, and their legal guardians also signed the guardian consent form.

Conflicts of Interest: The authors declare no conflicts of interest.

References

1. Ramandi Z, Ali Soleimani M, Allen KA, Gorgulu O, Motalebi SA. Validity and reliability of the flourishing scale in a sample of older adults in Iran. *Clin Interv Aging*. 2020;15:673–81. [[CrossRef](#)].
2. Datu JAD. Flourishing is associated with higher academic achievement and engagement in Filipino undergraduate and high school students. *J Happiness Stud*. 2018;19(1):27–39. [[CrossRef](#)].
3. Chen L, Li Y, Lu X, Miao Q, Zheng Z. The role of self-esteem between perceived social support and positive Pyscap in middle school students based on network analysis and mediation model. *Sci Rep*. 2025;15:35456. [[CrossRef](#)].
4. Rothenberg WA, Lansford JE, Bornstein MH, Tirado LMU, Yotanyamaneewong S, Alampay LP, et al. Cross-cultural associations of four parenting behaviors with child flourishing: Examining cultural specificity and commonality in cultural normativeness and intergenerational transmission processes. *Child Dev*. 2021;92(6):e1138–53. [[CrossRef](#)].
5. Okely JA, Weiss A, Gale CR. The interaction between individualism and wellbeing in predicting mortality: Survey of Health Ageing and Retirement in Europe. *J Behav Med*. 2018;41(1):1–11. [[CrossRef](#)].
6. Mead J, Fisher Z, Kemp AH. Moving beyond disciplinary silos towards a transdisciplinary model of wellbeing: An invited review. *Front Psychol*. 2021;12:642093. [[CrossRef](#)].
7. Yang Y, Zhan J, Fan Y. From national identity to well-being: The crucial mediating role of self-esteem in adolescents. *BMC Psychol*. 2025;13(1):507. [[CrossRef](#)].
8. Jiang L, Zeng X, He H, Wang SB. Meaning in life and adolescent depression and anxiety in China: A large-scale study of dual pathways through life satisfaction and resilience. *BMC Psychol*. 2026;14(1):150. [[CrossRef](#)].
9. Tsai W, Nusrath S, Zhu R. Systematic review of depressive, anxiety and post-traumatic stress symptoms among Asian American breast cancer survivors. *BMJ Open*. 2020;10(9):e037078. [[CrossRef](#)].
10. Diener E, Wirtz D, Tov W, Kim-Prieto C, Choi DW, Oishi S, et al. New well-being measures: Short scales to assess flourishing and positive and negative feelings. *Soc Indic Res*. 2010;97(2):143–56. [[CrossRef](#)].

11. van Zyl LE, Rothmann S. Grand challenges for positive psychology: Future perspectives and opportunities. *Front Psychol.* 2022;13:833057. [[CrossRef](#)].
12. Granot R, Spitz DH, Cherki BR, Loui P, Timmers R, Schaefer RS, et al. “Help! I need somebody”: Music as a global resource for obtaining wellbeing goals in times of crisis. *Front Psychol.* 2021;12:648013. [[CrossRef](#)].
13. Balgansuren D, Bayanmunkh B, Zhu H, Bat-Ulzii N, Bat-Erdene E, Tsend B, et al. The Positive and Negative Affect Schedule (PANAS): Psychometric properties of a Mongolian version in university students. *BMC Psychol.* 2025;13(1):1205. [[CrossRef](#)].
14. Wang XD, Wang XL, Ma H. *Handbook of mental health rating scale.* Beijing, China: Chinese Mental Health Journal Press; 1999. p. 75–6. (In Chinese).
15. Campbell A, Converse PE, Rodgers WL. *The quality of American life: Perceptions, evaluations, and satisfactions.* New York, NY, USA: Russell Sage Foundation; 1976.
16. Diener E, Emmons RA, Larsen RJ, Griffin S. The satisfaction with life scale. *J Pers Assess.* 1985;49(1):71–5. [[CrossRef](#)].
17. Yue SH, Zhang W, Huang HQ, Li DP. The adolescent’s subjective well-being and mental health and relationships with stress coping. *Psychol Dev Educ.* 2006;22(3):93–8.
18. Chen F, Curran PJ, Bollen KA, Kirby J, Paxton P. An empirical evaluation of the use of fixed cutoff points in RMSEA test statistic in structural equation models. *Sociol Meth Res.* 2008;36(4):462–94. [[CrossRef](#)].
19. Satorra A, Bentler PM. Ensuring positiveness of the scaled difference Chi-square test statistic. *Psychometrika.* 2010;75(2):243–8. [[CrossRef](#)].
20. Wen ZL, Hau KT, Marsh HW. Structural equation model testing: Cutoff criteria for goodness of fit indices and chi-square test. *Acta Psychol Sin.* 2004;36(2):186–94.
21. Nie W, Gao L, Cui K. Bullying victimization and mental health among migrant children in urban China: A moderated mediation model of school belonging and resilience. *Int J Environ Res Public Health.* 2022;19(12):7135. [[CrossRef](#)].
22. Zheng CH, Fang R, Gao KT. High-level of mental well-being: Concepts, measurements, and perspectives on flourishing. *J Shandong Univ Technol Social Sci Ed.* 2025;41(2):74–80. (In Chinese).
23. Kutscher T, Eid M. Psychometric benefits of self-chosen rating scales over given rating scales. *Behav Res Meth.* 2024;56(7):7440–64. [[CrossRef](#)].
24. Hitokoto H, Uchida Y. Interdependent happiness: Theoretical importance and measurement validity. *J Happiness Stud.* 2015;16(1):211–39. [[CrossRef](#)].
25. Krys K, Zelenski JM, Capaldi CA, Park J, van Tilburg W, van Osch Y, et al. Putting the “we” into well-being: Using collectivism-themed measures of well-being attenuates well-being’s association with individualism. *Asian J Social Psycho.* 2019;22(3):256–67. [[CrossRef](#)].
26. Taouk Y, King T, Leineweber C, Churchill B, Ruppanner L, Hanson LM. Gender differences in work–family conflict and mental health of Swedish workers by childcare responsibilities: Findings from the SLOSH cohort study. *Scand J Work Environ Health.* 2025;51(5):413–22. [[CrossRef](#)].
27. Faro A, Pereira CR. Factor structure and gender invariance of the Beck Depression Inventory–second edition (BDI-II) in a community-dwelling sample of adults. *Health Psychol Behav Med.* 2020;8(1):16–31. [[CrossRef](#)].
28. Li X, Su Y, Gan Y, Zuo C. Association between attitude toward seeking professional psychological help and mental health service need in college students: A cross-sectional study. *BMC Public Health.* 2025;25(1):4371. [[CrossRef](#)].
29. Xiang C, Li X. Effects of mindfulness, music therapy, and social support on adolescents test anxiety. *BMC Psychol.* 2025;13(1):505. [[CrossRef](#)].