



Family Resilience and Adolescent Mental Health in Chinese Families: The Mediating Role of Personal Strengths

Lu Yu¹ · Xiaohua Zhou² · Daniel Tan Lei Shek¹ · Yifan Wang³

Received: 9 December 2024 / Accepted: 22 April 2025
© The Author(s) 2025

Abstract

The role of family resilience in protecting family well-being has become increasingly important, particularly in relation to adolescents' mental health. While previous studies on family resilience typically focus on families facing specific adversities, there remains a gap in research on the general population. This study examined family resilience among 1,331 adolescents in China and analyzed the relationship between family resilience and adolescents' mental health. Moreover, the study investigated the mediating role of personal strengths in the relationship between family resilience and mental health outcomes. Latent profile analysis revealed four family resilience groups: highest, moderate high, moderate low, and lowest family resilience. Adolescents in the first two groups reported significantly lower levels of mental health issues, including depression, anxiety, and stress, compared to their peers. Structural equation modeling showed that personal strengths partially mediated the negative relationship between family resilience and adolescents' mental health issues. This study suggests that family resilience has both direct protective effects on adolescents' mental health and indirect effects through the cultivation of their personal strengths. The findings suggest a multi-dimensional approach that targets both family dynamics and personal strengths for future interventions.

Keywords Family resilience · Personal strengths · Mental health · Adolescent · China

✉ Lu Yu
lu.yu@polyu.edu.hk

¹ Department of Applied Social Sciences, The Hong Kong Polytechnic University, Hung Hom, Hong Kong, PR China

² Teaching and Learning Centre, Lingnan University, 8 Castle Peak Road, Hong Kong, PR China

³ Key Laboratory of Brain, Cognition and Education Sciences, Ministry of Education, South China Normal University, Guangzhou, PR China

Introduction

In today's increasingly complex and unpredictable world, families are confronted with unprecedented challenges—such as the economic hardship, global pandemic, and changes within a family—making the concept of family resilience particularly relevant (Walsh, 1996). The way a family collectively navigates these difficulties with both flexibility and cohesion significantly impacts the well-being of individual members and the family unit as a whole. Family resilience refers to the adaptive processes and interactions that strengthen both individual family members and the family system (Walsh, 1996). By fostering resilience, families can enhance their overall functioning and support each member's well-being in the face of inevitable adversities.

One of the most well-known theories of family resilience is Walsh's (2003) family resilience framework, which synthesizes family functioning across three major dimensions: family belief systems, organizational patterns, and communication processes. Family belief systems shape how family members collectively interpret and respond to adversity. These systems include meaning-making, fostering a positive outlook, and embracing transcendence and spirituality. To effectively cope with challenges, families must organize themselves in flexible, connected ways, while drawing on social and economic resources. Organizational patterns encompass flexibility, connectedness, and external support systems (Walsh, 2003). Finally, communication processes that nurture family resilience rely on clear communication, open emotional expression, and collaborative problem-solving. Understanding the influence of family resilience is essential for comprehending how families navigate difficulties and promote positive developmental outcomes for children.

Walsh's framework also supports the notion that families can be strong in some dimensions while weak in others. Walsh (2003, 2016) emphasizes that family resilience is a dynamic process, with families experiencing varying levels of resilience across the three dimensions. Resilient families are not necessarily equally strong in all areas and may rely more heavily on certain dimensions depending on the context and the type of adversity they face. For instance, a family might struggle with belief systems but possess strong communication processes, which allow them to openly discuss their challenges. Their strengths in communication may help them maintain close relationships during crises and enable effective coping.

Recent studies have sought to identify specific profiles of family resilience, yet the findings remain inconclusive. Some research supports Walsh's theoretical hypothesis, showing that different families indeed have varying strengths and weaknesses across the dimensions of family resilience. For example, a study by Sullivan et al. (2021) examined family resilience profiles in military families adapting to stress caused by family separations and military deployments. The results indicated that some military families had strong belief systems, particularly in their ability to find meaning in deployment and maintain a positive outlook. However, these same families often struggled with organizational flexibility, finding it difficult to reorganize family roles during deployment and reintegration. Another study (Gao et al., 2023), which examined family resilience in families caring children with autism spectrum disorder (ASD), revealed that some families demonstrated strong organizational patterns

while struggling with belief systems, particularly in making meaning of adversity. While these families effectively coordinated caregiving roles and shared responsibilities, they found it difficult to maintain a positive outlook.

Conversely, research has found that families with high resilience consistently perform well across all dimensions, while families with low resilience tend to struggle across multiple dimensions. For instance, Dong et al. (2021) identified three latent profiles of family resilience: high, moderate, and low. These profiles reflected corresponding levels of resilience across five of six measured dimensions, with family spirituality being the exception. Similarly, a study on families of cancer patients revealed four distinct profiles—high, moderate, lower-middle, and low family resilience—which demonstrated consistent patterns across most dimensions of family resilience (Lin et al., 2024). This pattern of consistency was also evident during the COVID-19 pandemic. Barton et al. (2023) found that families whose resilience declined exhibited poorer outcomes across all measures of family resilience. These findings support the consistency across different dimensions of family resilience. In other words, families that are strong in one dimension tend to be strong in other dimensions as well, while families that are weak in one dimension tend to be weak in others.

Family Resilience and Adolescent Mental Health

Family resilience has been shown to contribute to multiple positive outcomes, particularly for young family members (Patterson, 2002; Van Breda, 2018; Maurović et al., 2020). Resilient families provide children with a sense of security, emotional support, and adaptive coping mechanisms, all of which enhance their ability to navigate adversity and foster positive developmental outcomes (Walsh, 2016). For instance, Masten and Shaffer (2006) reported that family resilience was associated with long-term benefits for children, including better academic performance, stronger social skills, and reduced behavioral problems. Similarly, Kumpfer and Alvarado (2003) found that adolescents from resilient families were less likely to engage in high-risk behaviors and more likely to have positive social relationships and academic success. In their systematic reviews, Mackay (2003) and Fritz et al. (2018) identified several key protective factors within resilient families, including family cohesion, effective communication, positive family climate, family support, and problem-solving skills. These factors contribute to positive developmental outcomes across a variety of challenging contexts, such as economic hardship, illness, and childhood adversity (Fritz et al., 2018; Mackay, 2003). Another review paper provided evidence for the positive connections between family resilience and adolescent outcomes, including mental health, within Western contexts (Mackay, 2003).

Despite these important findings, research on family resilience and its impact on adolescent mental health in non-Western contexts—particularly in China—remains relatively limited. Existing studies in China have primarily focused on specific adversities or crisis situations, such as families dealing with chronic illness (Song et al., 2021) or during the COVID-19 pandemic (Zhuo et al., 2022). For example, Song et al. (2021) found that adolescents diagnosed with attention-deficit/hyperactivity dis-

order (ADHD) and with lower family resilience levels were more prone to conduct problems and depression. In the context of the pandemic, research revealed that family resilience negatively predicted a range of mental health issues, including depression, anxiety, post-traumatic stress disorder (PTSD), and poor sleep quality (He et al., 2022; Zhuo et al., 2022). Ao et al. (2024) further demonstrated a negative relationship between perceived family resilience and anxiety in both parents and children.

However, research on the profiles and effects of family resilience within the general population remains limited, despite the fact that family resilience serves as an important protective factor for all families. There is a significant research gap in understanding the broader relationship between family resilience and adolescent mental health in the general population, particularly in China, where empirical studies on family resilience are sparse (Shek et al., 2023).

Several distinct cultural characteristics—such as Chinese beliefs about adversity (Shek, 2004), the values placed on family ties (Lee, 2005), filial piety (Fuligni & Zhang, 2004), and a more implicit expression of emotions (Deng et al., 2019; Yu & Zhou, 2024) — are likely to influence how family resilience operates and affects adolescent mental health. In particular, indigenous Chinese concepts of family resilience highlight the importance of family cohesion and each members' responsibilities to the family (Shek, 2006). Chinese values also advocate sacrificing oneself for the good of the family (Leung et al., 2016; Swan et al., 2014). These cultural factors may moderate the impact of family resilience, suggesting that the mechanism through which resilience supports mental health could differ from those observed in Western contexts. Addressing this gap is crucial for developing a more comprehensive understanding of how family resilience functions as a protective mechanism for adolescents' mental health across varying contexts, not just during periods of heightened adversity. This understanding could inform culturally tailored interventions that promote mental health and resilience among adolescents in China and other non-Western societies.

The Mediating Role of Children's Personal Strengths

Existing research highlights the relationship between children's personal strengths and family resilience, as well as the link between children's personal strengths and their mental health. However, the role of personal strengths as a potential mediator in understanding how family resilience protects youth mental health remains underexplored.

According to Ho et al.'s (2016) framework of personal strengths, there are three key dimensions: intellectual strength, interpersonal strength, and temperance. Interpersonal strength refers to qualities that foster healthy relationships and positive social interactions, such as empathy, compassion, and the ability to appreciate relationships. These qualities are essential for emotional wellbeing, particularly in collective cultures like China, where relationships are highly valued (Wang et al., 2019). Intellectual strength encompasses curiosity and a passion for exploring new ideas and engaging in creative activities. Individuals with high intellectual strength tend to be inquisitive and motivated by learning and exploring the world around them (Kashdan et al., 2004). Temperance relates to self-regulation, persistence, and self-

control, which enable individuals to stay focused on long-term goals and demonstrate resilience when facing difficulties (Baumeister et al., 2007). These essential personal strengths can be identified, cultivated, and reinforced through regular practice in daily life, leading to increased life satisfaction and reduced mental health issues.

A positive correlation between family resilience and children's personal strengths has been consistently demonstrated in the literature. Recent research further supports the idea that family resilience plays a significant role in fostering interpersonal, intellectual, and temperance strengths in children and adolescents. First, family resilience likely exerts a significant influence on the development of interpersonal strengths. Families that demonstrate resilience often model effective communication, emotional regulation, and conflict resolution which are directly linked to interpersonal competencies like empathy and social awareness (Prime et al., 2020). Second, family resilience may positively influence adolescent intellectual strength. The potential of family resilience plays a crucial role in shaping intellectual strengths in adolescents. Cognitive flexibility and openness to new experiences are nurtured in resilient families that encourage open communication and supporting children's engagement in learning and exploration, even in the face of adversity (Masten, 2018). Early interventions targeting children from disadvantaged backgrounds have shown that combining educational support with family resilience enhanced long-term intellectual growth (Campbell et al., 2001; Mackay, 2003). Moreover, recent literature highlights the significant role family resilience plays in promoting temperance. Families that model effective coping mechanisms and provide emotional support foster self-regulation and persistence (Bethell et al., 2022). Resilient families also help children develop self-discipline by offering consistent support and encouraging goal-directed behavior (Masten & Barnes, 2018).

Empirical research provides robust evidence linking personal strengths to youth wellbeing and mental health. Studies showed that interpersonal strength protects young people against depression and anxiety through fostering strong social relationships and peer support (Morelli et al., 2015; Lamblin et al., 2017). In terms of intellectual strength, research indicates that curiosity, creativity, and cognitive engagement are associated with better mental health outcomes (Lavrijsen, & Verschueren, 2023). Kashdan et al. (2013) reported that adolescents who display high levels of curiosity are more adaptive to stress and less likely to show anxiety and depressive symptoms. Temperance, involving self-regulation, persistence, and self-control, has been found as a strong predictor of positive mental health outcomes. For instance, Duckworth and Gross (2014) found that self-regulation in adolescents is associated with lower levels of stress and anxiety, as well as greater overall satisfaction. Tangney et al. (2004) also showed that youth with higher self-control are better able to manage emotional responses, which leads to fewer behavioral problems and a reduced risk of developing mental health disorders.

While these findings underscore the importance of personal strengths in youth mental health, as well as the relationship between family resilience and personal strengths, a significant research gap remains regarding the potential mediating role of personal strengths in the link between family resilience and youth mental health. It is still unclear whether family resilience protects adolescents' mental health by fostering the development of their personal strengths. Addressing this issue could provide

valuable insights into the mechanisms that protect youth mental health and help guide the development of more effective and holistic preventative mental health strategies that empower families and enhance the wellbeing of adolescents.

The Present Study

Against the above background, the present study aimed to (1) identify the profiles of family resilience among general Chinese families, without focusing on specific adversities; (2) examine the relationship between family resilience and youth mental health outcomes among general adolescent population; (3) evaluate the mediating role of personal strengths in the relationship between family resilience and youth mental health outcomes.

Methods

Participants and Procedure

Participants for this study were recruited from four secondary schools located in the Greater Bay Area of Mainland China from May to June 2023. Prior to the study, consents were obtained from the principal of each school. All students in Secondary One (Grade 7) across the selected schools were invited to participate. Information about the research objectives and procedures was shared in class and sent to their parents via an information sheet. Parents had the option to opt their children out of the study by filling in and returning a form to the school. Students were informed that participation was voluntary, and they could choose not to participate or withdraw at any time without any penalty. All students who agreed to participate signed a written consent form.

The survey was self-administered in a classroom setting, supervised by an experienced researcher from the research team who was available to address any general enquires from the students. The questionnaires were completed anonymously, and class teachers were not present during the survey. Students were assured that their responses would remain confidential and that neither teachers nor parents would have access to the collected data. The survey session lasted approximately half an hour. A total of 1,331 questionnaires were collected from students, aged 12.4 ± 0.8 years, including 688 males (51.7%), 636 females (47.8%) and seven students (0.5%) who did not specify their gender.

Instruments

In this study, family resilience was assessed using the Chinese Family Resilience Scale. The Depression, Anxiety, and Stress Scale was employed to evaluate the mental health status of students, while the Brief Strengths Scale was used to measure stu-

dents' personal strengths. Further details on these three questionnaires are provided below.

The Chinese Family Resilience Scale

The Chinese Family Resilience Scale (CFRS; Leung et al., 2023) is a self-reported questionnaire comprising 35 items distributed across three dimensions based on the model of Walsh (2016): belief systems (13 items), organizational patterns (10 items), and communication processes (12 items). Responses are recorded on a six-point scale, ranging from "1=Very dissimilar" to "6=Very similar," with higher scores indicating greater family resilience. The CFRS has demonstrated robust validity and reliability in prior studies involving Chinese adolescents (Leung et al., 2023). In the present study, both the total scale and subscales of CFRS showed good internal consistencies, with Cronbach's alpha ranging from 0.78 to 0.97.

Depression Anxiety Stress Scale

The 21-item Depression Anxiety Stress Scale (DASS-Y; Szabo & Lovibond, 2022) is a self-reported measure designed to assess "the ubiquitous and clinically significant emotional states usually described as depression, anxiety and stress" (Psychology Foundation of Australia, 2018). The scale can be used by both researchers and clinicians for screening in both normal adolescents and adults, or for pinpointing the specific areas of emotional disturbance. Each of the three subscales contains seven items, measuring depression, anxiety, and stress, respectively. In the present study, the Chinese version of DASS-Y was adopted, which has been validated in the Chinese population and demonstrated superior psychometric properties (Cao et al., 2023). Participants rate how much they have experienced the described emotional state over the past week using a four-point scale, with 0=did not apply to me at all and 3=applied to me very much, or most of the time. In the current study, the Cronbach's alpha coefficients were 0.85 for depression, 0.76 for anxiety, and 0.80 for stress.

Brief Strengths Scale

The 12-item Brief Strengths Scale (BSS, Ho et al., 2016) was employed to assess three dimensions of strengths: intellectual, interpersonal, and temperance. Developed by Chinese researchers, the BSS has been validated through several empirical studies involving diverse Chinese samples, demonstrating excellent psychometric and linguistic properties (Duan & Ho, 2016). The subscales for the three strengths have shown high internal consistency, with Cronbach's alpha values ranging from 0.86 to 0.89.

Data Analysis

Descriptive statistics for the key variables were first calculated using SPSS 24.0. To identify latent classes of participants based on family resilience, a Latent Profile Analysis (LPA) was conducted in Mplus 8.3 (Ferguson et al., 2020), using the three dimensions of family resilience—belief systems, organizational patterns, and communication processes—as continuous indicator variables. To compare mental health across participants from different family resilience classes, mean differences in depression, anxiety, and stress were examined across the latent profiles using MANOVA. Lastly, the mediating effect of brief personal strengths on the relationship between family resilience and mental health was analyzed using Mplus 8.3, based on Maximum Likelihood Estimates. Model fit was assessed using the following indices: Tucker-Lewis Index (TLI), Comparative Fit Index (CFI), and Root Mean Square Error of Approximation (RMSEA). A model is considered to have an adequate fit when χ^2/df is below 5, CFI and TLI are greater than 0.90, and RMSEA is below 0.08 (Hu & Bentler, 1999).

Results

Descriptive Statistics

Table 1 presents the means, standard deviations, and Cronbach's alphas for all key variables. The Cronbach's alphas ranged from 0.80 to 0.97, indicating satisfactory reliability. All family resilience indicators were positively associated with the three

Table 1 Means, standard deviations, and correlations among key variables

| Variables | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|-----------------------------------|---------|---------|---------|---------|---------|---------|--------|--------|------|
| 1.Belief system | - | | | | | | | | |
| 2.Family Organizational Processes | 0.75** | - | | | | | | | |
| 3.Communication Processes | 0.64** | 0.86** | - | | | | | | |
| 4.Temperance | 0.32** | 0.41** | 0.42** | - | | | | | |
| 5.Intellectual | 0.37** | 0.42** | 0.40** | 0.60** | - | | | | |
| 6.Interpersonal | 0.36** | 0.39** | 0.36** | 0.58** | 0.69** | - | | | |
| 7.Depression | -0.20** | -0.30** | -0.30** | -0.32** | -0.35** | -0.20** | - | | |
| 8.Anxiety | -0.11** | -0.22** | -0.24** | -0.23** | -0.25** | -0.14** | 0.74** | - | |
| 9.Stress | -0.09** | -0.22** | -0.26** | -0.33** | -0.24** | -0.10** | 0.68** | 0.62** | - |
| Mean | 4.40 | 4.58 | 4.49 | 18.45 | 21.39 | 22.07 | 2.65 | 1.51 | 5.26 |
| SD | 1.06 | 1.03 | 1.13 | 4.87 | 5.13 | 4.56 | 4.01 | 3.05 | 5.48 |
| Cronbach's α | 0.95 | 0.94 | 0.97 | 0.84 | 0.86 | 0.80 | 0.90 | 0.87 | 0.91 |

Note: ** $p < .01$

personal strengths, and both family resilience and personal strengths were negatively correlated with mental health problems. These relationship patterns align with our hypotheses.

Profiles of Family Resilience

Information-based fit indices revealed solutions ranging from one to six classes (Table 2). These criteria indicated improved model fit up to the five-profile model, which exhibited lower AIC (Akaike Information Criterion), BIC (Bayesian Information Criterion), and aBIC (Adjusted Bayesian Information Criterion) values compared to other models. However, despite the improved model fit, the smallest group in the five-profile solution accounted for only 2% of the total sample. Therefore, the four-profile model was selected, as it provided a meaningful and adequately sized classification, with an entropy value of 0.87, indicating clear delineation among the profiles.

As depicted in Fig. 1 and Table 3, the four profiles were categorized based on their distinct patterns of family resilience. The four-profile solution showed significant mean differences between the manifest indicators for each profile (Table 3). The largest proportion of participants belonged to the Moderate Low Family Resilience profile ($n=448$, 35.5%), characterized by the moderately low levels of family resilience across all three subscales. The Moderate High Family Resilience profile was the second most common ($n=424$, 31.7%), featuring moderately high levels of belief systems, organizational patterns, and communication processes relative to other profiles. The third most common profile was the Highest Family Resilience profile ($n=386$, 28.9%), where participants reported the highest levels across almost all family resilience subscales. The fourth profile was the Lowest Family Resilience profile ($n=79$, 5.9%), where participants reported the lowest levels across nearly all family resilience subscales. The mean values for each dimension in the four profiles are presented in Table 3. Overall, family resilience exhibited a relatively homogeneous distribution across the profiles. Therefore, the four profiles were primarily characterized by differences observed in belief systems, organizational patterns, and communication processes.

Table 2 Model fit indices for latent profile analysis of family resilience

| | AIC | BIC | aBIC | Entropy | LMRT <i>p</i> value | BLRT <i>p</i> value | Profile prevalence |
|-----------|----------|----------|----------|---------|------------------------|------------------------|-------------------------------|
| 1 Class | 11926.57 | 11957.76 | 11938.70 | -- | -- | -- | -- |
| 2 Classes | 10325.69 | 10377.68 | 10345.91 | 0.83 | <0.001 | <0.001 | 0.55/0.45 |
| 3 Classes | 9519.23 | 9592.01 | 9547.54 | 0.87 | <0.001 | <0.001 | 0.09/0.49/0.42 |
| 4 Classes | 9092.89 | 9186.45 | 9129.28 | 0.87 | 0.002 | <0.001 | 0.06/0.29/0.32/0.34 |
| 5 Classes | 8829.68 | 8944.04 | 8874.15 | 0.89 | 0.004 | <0.001 | 0.02/0.06/0.33/0.31/0.28 |
| 6 Classes | 8561.35 | 8696.51 | 8613.92 | 0.90 | 0.012 | <0.001 | 0.03/0.10/0.02/0.29/0.29/0.27 |

Note: AIC: Akaike Information Criterion; BIC: Bayesian Information Criterion; aBIC: Adjusted Bayesian Information Criterion; LMRT: Lo-Mendell-Rubin Adjusted Likelihood Ratio Test; BLRT: Bootstrap-Based Likelihood Ratio Test

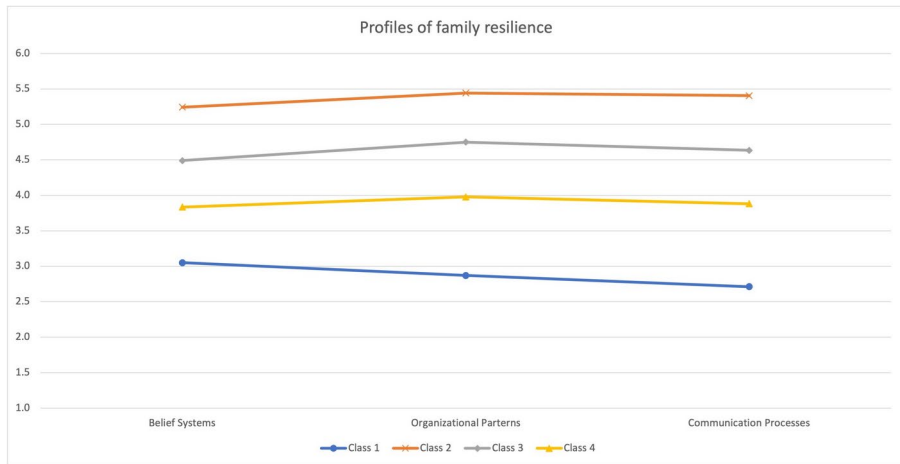


Fig. 1 Latent profiles of family resilience

Table 3 Means and standardized deviations of family resilience subscales and mental health problems in the four classes

| | Class 1 Mean (SD) | Class 2 Mean (SD) | Class 3 Mean (SD) | Class 4 Mean (SD) | F | p | Partial η^2 | Post hoc Compari- son |
|------------------------------|----------------------|-------------------------|-------------------------|-------------------------|--------|--------|---------------------|-------------------------------|
| Belief systems | 3.05 (1.23) | 5.24 (0.77) | 4.49 (0.78) | 3.83 (0.87) | 263.56 | <0.001 | 0.37 | 2>3>4>1 |
| Organizational patterns | 2.87 (1.28) | 5.44 (0.75) | 4.75 (0.59) | 3.98 (0.71) | 423.04 | <0.001 | 0.49 | 2>3>4>1 |
| Communica- tion processes | 2.71 (1.41) | 5.40 (0.82) | 4.63 (0.74) | 3.88 (0.85) | 339.54 | <0.001 | 0.44 | 2>3>4>1 |
| Depression | 4.94 (5.38) | 1.66 (3.43) | 2.26 (3.41) | 3.20 (4.22) | 20.63 | <0.001 | 0.05 | 1>2; 1>3; 1>4; 4>2; 4>3 |
| Anxiety | 2.59 (4.13) | 0.93 (2.43) | 1.39 (2.80) | 1.81 (3.32) | 9.36 | <0.001 | 0.02 | 1>2; 1>3; 1>4; 4>2 |
| Stress | 7.83 (6.79) | 3.92 (4.91) | 4.99 (5.11) | 5.92 (5.65) | 15.38 | <0.001 | 0.04 | 1>2; 1>3; 1>4; 3>2; 4>2 |

Note: Multivariate test results for comparing three dimensions of family resilience: $F(9, 3215) = 127.09$, Wilk's $\lambda = 0.48$, partial $\eta^2 = 0.22$

Multivariate test results for comparing three mental health issues: $F(9, 3064) = 7.64$, Wilk's $\lambda = 0.95$, partial $\eta^2 = 0.02$

Relationship Between Family Resilience Profile and Mental Health Problems

MANOVA was further conducted to examine the relationship between family resilience and mental health among adolescents. Table 3 showed the means and standard deviations of depression, anxiety, and stress among participants of different family resilience groups. Post-hoc comparison revealed that moderate high and highest family resilience groups reported better mental health than the other two groups.

Table 4 Results of confirmatory factor analyses of C-FRS, BSS-12 and DASS-Y-21

| Description | χ^2 | df | χ^2/df | CFI | TLI | RMSEA |
|---------------------------------|----------|-----|-------------|------|------|-------|
| Chinese Family resilience scale | 2479.72 | 548 | 4.53 | 0.93 | 0.92 | 0.05 |
| Brief strengths | 447.86 | 51 | 8.78 | 0.92 | 0.90 | 0.08 |
| Mental health | 735.04 | 186 | 3.95 | 0.93 | 0.92 | 0.04 |

Note: χ^2 : Chi Square test statistics, RMSEA: Root Mean Squared Error of Approximation, CFI: Comparative Fit Index, TLI: Tucker-Lewis Index

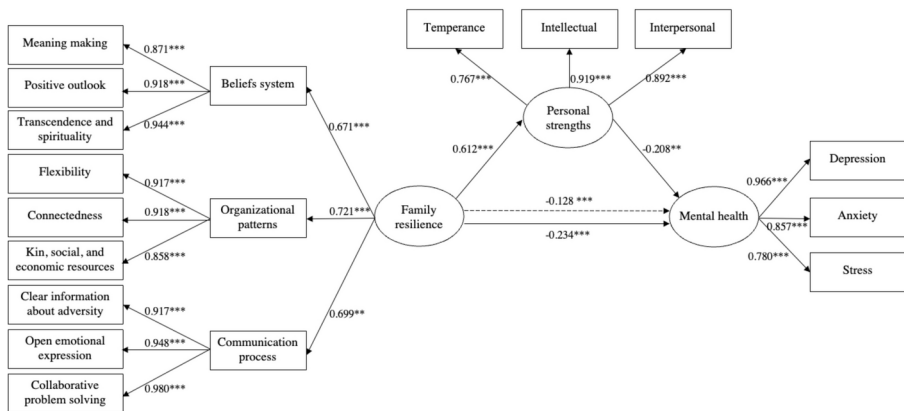


Fig. 2 Partial mediation model of the relationships among family resilience, personal strengths, and mental health problems

Note: *** $p < .001$, ** $p < .01$

Relationships Between Family Resilience and Adolescent Mental Health Mediated by Personal Strengths

Confirmatory Factor Analysis (CFA) was first conducted to test the factorial structures of the three latent variables: family resilience (second-order three-factor structure), personal strengths (first-order three-factor structure), and mental health problems (first-order three-factor structure). The results, presented in Table 4, indicate a good fit for the three factorial structures. Factor loadings ranged from 0.60 to 0.97, all of which were significant at the 0.05 level.

The mediating effect of personal strengths on the relationship between family resilience and mental health was further tested through Structural Equation Modelling (see Fig. 2). The findings revealed a robust fit between the model and the empirical data, as indicated by a χ^2/df ratio of 4.93 (< 5), a CFI of 0.88 (close to 0.90), a TLI of 0.89 (close to 0.90), and an RMSEA of 0.05 (< 0.08). All pathways within the model demonstrated significant associations at $p < .001$, as depicted in Table 4. Notably, the direct path from family resilience to mental health exhibited a standardized coefficient of -0.234 (95% CI = -0.322 to -0.145). The indirect effect from family resilience to mental health, mediated by personal strengths, was -0.128 (95% CI = -0.180 to -0.084). The total effect was -0.362, encompassing both direct (-0.234, 95% CI = -0.322 to -0.145) and indirect influence (-0.128, 95% CI = -0.180 to -0.084) (see Fig. 2 for a comprehensive illustration). The standardized indirect effect

mediated by personal strength accounted for over one third of the total effect ($-0.128 / -0.362 = 35.36\%$). Therefore, the partial mediation effect of personal strengths on the relationship between family resilience and mental health was evident.

Discussion

This study provides valuable insights into the profiles and the role of family resilience in adolescent mental health among Chinese families. Our findings support a four-profile model of family resilience: a high resilience group, a moderately high group, a moderately low group and a low resilience group. Adolescents from families with the highest and moderately high levels of family resilience reported significantly fewer mental health issues than those from families in the lowest and moderately low groups, consistent with family resilience theory and prior empirical studies focusing on families facing specific adversities. A novel finding is that the relationship between family resilience and adolescent mental health was partially mediated by personal strengths, including intellectual strengths, interpersonal strengths, and temperance. This suggests that family resilience not only exerts a direct protective effect on youth mental health, but also fosters the development of personal strengths in adolescents, which further enhances their ability to manage stress and negative emotions.

Our findings contribute to the understanding of the pathways through which family resilience may impact youth mental health. Specifically, the dual role of family resilience: as a direct buffer against mental health challenges and as a facilitator of personal strengths that enable adolescents to cope with adversity. These results point to the value of family-based interventions that target both family dynamics and individual development, which offers a more comprehensive approach to promoting adolescent mental wellbeing.

A notable finding of this study is the strong interconnectedness observed among the dimensions of family resilience—belief systems, organizational patterns, and communication processes. Families with high resilience demonstrated strengths across all three dimensions. This finding aligns with the results of Lin et al. (2024) and Barton et al. (2023), and challenges Walsh's earlier theoretical proposition that families may exhibit strengths in different, rather than all, dimensions. Instead, our findings suggest that families with positive belief systems are also likely to display flexibility, strong commitment and financial stability within their organizational patterns. Moreover, these families tend to foster open emotional expression, effective communication in the face of uncertainty, and collaborative problem-solving. This integrated pattern indicates that these dimensions work synergistically to support overall family functioning and in turn, adolescent mental health.

This finding aligns with previous research by Dong et al. (2021), Chen et al. (2024), and Lin et al. (2024) which also reported consistent performance across the three dimensions of family resilience in different populations, e.g., adult patients. Our study extends this understanding to a broader population—adolescents in a general school population. This suggests that a holistic approach to family resilience may be universally beneficial. The interconnectedness of these dimensions suggests that strengthening one dimension (e.g., belief system) could simultaneously enhance

others (e.g., communication and organization), leading to greater overall family resilience.

Our findings provide further empirical support for the protective role of family resilience in adolescent mental health (Patterson, 2002). Adolescents in the highest and moderately high resilience groups displayed significantly fewer mental health issues compared to those in the low resilience groups. This corroborates existing literature demonstrating the positive influence of family resilience on adolescent mental health across both Western and Chinese contexts (e.g., Mackay, 2003; Song et al., 2021; Zhuo et al., 2022). While previous research has often focused on families facing specific adversities, our study broadens this understanding by showing that family resilience benefits adolescents in the general population, not just those experiencing crises. This suggests that, even in everyday life, a positive family belief system, flexible and connected organizational patterns, and open communication are crucial to protect adolescents from depression, anxiety, and stress.

Another key finding is the mediating role of personal strengths—intellectual strength, interpersonal strength, and temperance—in the relationship between family resilience and adolescent mental health. Adolescents from resilient families are more likely to develop these strengths, which in turn help them to navigate stress and adversity. For example, adolescents with strong interpersonal skills are better equipped to form supportive relationships outside families (Koesten & Anderson, 2004), which contribute to their emotional wellbeing and reduce the likelihood of experiencing mental health issues. In contrast, adolescents from lower-resilience families not only receive less protection at the family level but also are less likely to develop personal strengths that could buffer against mental health challenges.

This study makes several important theoretical and practical contributions. Theoretically, it challenges the assumption that families may possess unique strengths in different dimensions of family resilience. Instead, families in our study demonstrated consistent performance across the three dimensions of family resilience, rather than exhibiting differentiated strengths in specific areas. Our findings provide evidence for the interconnectedness of these dimensions, particularly within a general population in China. This integrated view encourages a more holistic approach to examining family systems and suggests that interventions should aim to enhance all dimensions simultaneously for maximum effect. On the other hand, it may also be that Chinese families tend to view their family dynamics in a more undifferentiated manner.

Additionally, this study reveals the mediating role of personal strengths in the relationship between family resilience and mental health outcome, highlighting the importance of considering both family-level and individual-level factors in models of resilience. This adds a new dimension to the theoretical framework of how family dynamics influence youth mental health and emphasizes the need to account for individual attributes in the resilience process. Lastly, the study extends the applicability of family resilience to the general population, rather than focusing solely on populations facing specific adversities. It indicates that the importance of family resilience in protecting adolescent mental health and promoting personal strengths is not limited to times of adversities, but is also crucial in everyday life.

Practically, these findings highlight the importance of fostering both family resilience and personal strengths in interventions aimed at improving adolescent mental

health. Programs that promote open family communication, emotional support, and flexibility, while simultaneously promoting the development of personal qualities like self-control, curiosity, and empathy, could be particularly effective in reducing mental health issues such as anxiety, depression, and stress among adolescents. By targeting both family dynamics and personal strengths, interventions can better equip adolescents to cope with challenges, ultimately enhancing their overall wellbeing.

Several limitations of this study should be acknowledged. First, family resilience was assessed only through adolescents' self-reported responses. Adolescents' perceptions of family resilience might differ from those of their parents, potentially leading to incomplete or biased representations of family dynamics. To provide a more comprehensive understanding, future research could benefit from incorporating multiple perspectives, particularly those of parents or other family members, through dyadic or multi-informant approaches. Second, the sample was drawn from only four schools within the Greater Bay Area in China, which may limit the generalizability of the findings. To ensure that the results are applicable to a broader population, future studies should recruit participants from more diverse backgrounds. Third, the cross-sectional design of the study limits our ability to determine the directionality or causality of the observed relationships. While we identified associations among family resilience, personal strengths, and adolescent mental health, it is possible that mental health issues may negatively impact family resilience, rather than the reverse. Longitudinal studies are needed to track these variables over time and to provide clearer insights into causal pathways and long-term effects. Fourth, this study included a limited number of confounding variables (e.g., gender). Future research should incorporate additional confounding factors (e.g., social support) to enhance the robustness of the findings.

Despite the limitations, this study highlights the interconnected nature of family resilience and individual factors in shaping adolescent mental health. The findings encourage future research and interventions to adopt a multi-dimensional approach that recognizes the synergistic effects of family resilience and personal strengths in promoting positive mental health outcomes. To safeguard adolescents' mental wellbeing, social workers, educators, and helping professionals should focus not only on the adolescents themselves but also on strengthening the belief system, organizational patterns, and communication processes within their families.

Funding Open access funding provided by The Hong Kong Polytechnic University

This project and this paper are financially supported by the General Research Fund, Research Grants Council of Hong Kong. Project title: Family resilience of Hong Kong low-income families with adolescent children: The role of positive youth development attributes (PolyU 15611822) and the Departmental Research Fund, Department of Applied Social Sciences, The Hong Kong Polytechnic University. Project title: A longitudinal investigation of quality of life and resilience of rural-to-urban migrant children in the greater bay area cities in mainland China: A holistic positive youth developmental approach (P0041161).

Declarations

Competing Interests As the Editor in Chief, Prof. Daniel T. L. Shek, is a co-author of the paper, the Special Issue Editor will take care of the review process and make the editorial decisions in an independent manner.

Open Access This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>.

References

- Ao, L., Cheng, X., An, D., An, Y., & Yuan, G. (2024). Relationship between perceived family resilience, emotional flexibility, and anxiety symptoms: A parent–adolescent dyadic perspective. *Journal of Youth and Adolescence*, 1–12. <https://doi.org/10.1007/s10964-024-02083-7>
- Barton, A. W., Larsen, N. B., Gong, Q., & Stanley, S. M. (2023). Family resiliency in the aftermath of COVID-19 pandemic: A latent profile analysis. *Journal of Marriage and Family*, 85(5), 1125–1137.
- Baumeister, R. F., Vohs, K. D., & Tice, D. M. (2007). The strength model of self-control. *Current Directions in Psychological Science*, 16(6), 351–355.
- Bethell, C. D., Garner, A. S., Gombojav, N., Blackwell, C., Heller, L., & Mendelson, T. (2022). Social and relational health risks and common mental health problems among US children: The mitigating role of family resilience and connection to promote positive socioemotional and School-Related outcomes. *Child and Adolescent Psychiatric Clinics of North America*, 31(1), 45–70.
- Campbell, F. A., Pungello, E. P., Miller-Johnson, S., Burchinal, M., & Ramey, C. T. (2001). The development of cognitive and academic abilities: Growth curves from an early childhood educational experiment. *Developmental Psychology*, 37(2), 231–242.
- Cao, C., Liao, X., Gamble, J. H., Li, L., Jiang, X., Li, X., Griffiths, M. D., Chen, I. H., & Lin, C. Y. (2023). Evaluating the psychometric properties of the Chinese depression anxiety stress scale for youth (DASS-Y) and DASS-21. *Child and Adolescent Psychiatry and Mental Health*, 17, 106. <https://doi.org/10.1186/s13034-023-00655-2>
- Chen, L., Yao, L., Zhang, L., Jia, S., Lu, Z., & Zhang, X. (2024). Classification and influencing factors of family resilience and post-traumatic growth in spinal tumor patients: A latent profile analysis. *Research Square*. <https://doi.org/10.21203/rs.3.rs-4854293/v1>
- Deng, X., An, S., & Cheng, C. (2019). Cultural differences in the implicit and explicit attitudes toward emotion regulation. *Personality and Individual Differences*, 149, 220–222.
- Dong, C., Wu, Q., Pan, Y., Yan, Q., Xu, R., & Zhang, R. (2021). Family resilience and its association with psychosocial adjustment of children with chronic illness: A latent profile analysis. *Journal of Pediatric Nursing*, 60, e6–e12.
- Duckworth, A. L., & Gross, J. J. (2014). Self-control and Grit: Related but separable determinants of success. *Current Directions in Psychological Science*, 23(5), 319–325.
- Ferguson, S. L., Moore, G., E. W., & Hull, D. M. (2020). Finding latent groups in observed data: A primer on latent profile analysis in Mplus for applied researchers. *International Journal of Behavioral Development*, 44(5), 458–468.
- Fritz, J., de Graaff, A. M., Caisley, H., van Harmelen, A. L., & Wilkinson, P. O. (2018). A systematic review of amenable resilience factors that moderate and/or mediate the relationship between childhood adversity and mental health in young people. *Frontiers in Psychiatry*, 9, 230–230.
- Fulgini, A. J., & Zhang, W. (2004). Attitudes toward family obligation among adolescents in contemporary urban and rural China. *Child Development*, 75(1), 180–192.
- He, Y., Li, X. S., Zhao, J., & An, Y. (2022). Family resilience, media exposure, and children's mental health in China during COVID-19. *The Family Journal*, 30(4), 579–588.
- Ho, S. M., Li, W. L., Duan, W., Siu, B. P., Yau, S., Yeung, G., & Wong, K. (2016). A brief strengths scale for individuals with mental health issues. *Psychological Assessment*, 28(2), 147.
- Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1–55.

- Kashdan, T. B., Goodman, F. R., Mallard, T. T., & DeWall, C. N. (2013). Curiosity has comprehensive benefits in the context of adversity. *Emotion, 13*(5), 817–827.
- Koesten, J., & Anderson, K. (2004). Exploring the influence of family communication patterns, cognitive complexity, and interpersonal competence on adolescent risk behaviors. *The Journal of Family Communication, 4*(2), 99–121.
- Kumpfer, K. L., & Alvarado, R. (2003). Family-strengthening approaches for the prevention of youth problem behaviors. *American Psychologist, 58*(6–7), 457.
- Lamblin, M., Murawski, C., Whittle, S., & Fornito, A. (2017). Social connectedness, mental health and the adolescent brain. *Neuroscience & Biobehavioral Reviews, 80*, 57–68.
- Lavrijsen, J., & Verschuere, K. (2023). High cognitive ability and mental health: Findings from a large community sample of adolescents. *Journal of Intelligence, 11*(2), 38.
- Lee, E., & Mock, M. R. (2005). Chinese families. *Ethnicity and Family Therapy, 3*, 302–318.
- Leung, J. T., Shek, D. T. L., & Ma, C. M. S. (2016). Measuring perceived parental sacrifice among adolescents in Hong Kong: Confirmatory factor analyses of the Chinese parental sacrifice scale. *Child Indicators Research, 9*, 173–192.
- Lin, J., Yang, X., Chen, Q., Wang, A., Arbing, R., Chen, W. T., & Huang, F. (2024). A latent class analysis of family resilience and its relationship with fear of recurrence in lung cancer patients: A cross-sectional study. *Supportive Care in Cancer, 32*(4), 211.
- Mackay, R. (2003). Family resilience And good child outcomes: An overview of the research literature. *Social Policy Journal of New Zealand, 20*, 98–118.
- Masten, A. S. (2018). Resilience theory and research on children and families: Past, present, and promise. *Journal of Family Theory & Review, 10*(1), 12–31.
- Masten, A. S., & Barnes, A. J. (2018). Resilience in children: Developmental perspectives. *Children, 5*(7), 98. <https://doi.org/10.3390/children5070098>
- Masten, A. S., & Shaffer, A. (2006). How families matter in child development: Reflections from Research on Risk and Resilience. In A. Clarke-Stewart & J. Dunn (Eds.), *Families count: Effects on child and adolescent development* (pp. 5–25). Cambridge University Press. <https://doi.org/10.1017/CBO9780511616259.002>
- Maurović, I., Liebenberg, L., & Ferić, M. (2020). A review of family resilience: Understanding the concept and operationalization challenges to inform research and practice. *Child Care in Practice, 26*(4), 337–357.
- Morelli, S. A., Lieberman, M. D., & Zaki, J. (2015). The emerging study of positive empathy. *Social and Personality Psychology Compass, 9*(2), 57–68.
- Patterson, J. M. (2002). Integrating family resilience and family stress theory. *Journal of Marriage and Family, 64*(2), 349–360.
- Prime, H., Wade, M., & Browne, D. T. (2020). Risk and resilience in family Well- being during the COVID-19 pandemic. *American Psychological Association, 75*(5), 631–643.
- Psychology Foundation of Australia (2018). *Overview of the DASS and its uses*. Retrieved from <http://www.w2.psy.unsw.edu.au/dass/over.htm>. [November 08, 2024].
- Shek, D. T. L. (2004). Chinese cultural beliefs about adversity: Its relationship to psychological well-being, school adjustment and problem behavior in Hong Kong adolescents with and without economic disadvantage. *Childhood, 11*, 63–80.
- Shek, D. T. L. (2006). Chinese family research: Puzzles, progress, paradigms, and policy implications. *Journal of Family Issues, 27*, 275–284.
- Shek, D. T., Leung, J. T., & Tan, L. (2023). Social policies and theories on quality of life under COVID-19: In search of the missing links. *Applied Research in Quality of Life, 18*(3), 1149–1165.
- Shoshani, A., & Slone, M. (2013). Middle school transition from the strengths perspective: Young adolescents' character strengths, subjective well- being, and school adjustment. *Journal of Happiness Studies, 14*(4), 1163–1181. <https://doi.org/10.1007/s10902-012-9374-y>
- Song, J., Fogarty, K., Suk, R., & Gillen, M. (2021). Behavioral and mental health problems in adolescents with ADHD: Exploring the role of family resilience. *Journal of Affective Disorders, 294*, 450–458.
- Swann, W. B. Jr., Buhrmester, M. D., Gómez, A., Jetten, J., Bastian, B., Vázquez, A., et al. (2014). What makes a group worth dying for? Identity fusion fosters perception of Familial ties, promoting self-sacrifice. *Journal of Personality and Social Psychology, 106*(6), 912–925.
- Szabo, M., & Lovibond, P. F. (2022). Development And psychometric properties of the DASS-youth (DASS-Y): An extension of the depression Anxiety stress scales (DASS) to adolescents And children. *Frontiers in Psychology, 13*, 766890.

- T Leung, J., D Shek, T., & M Tang, C. (2023). Development and validation of the Chinese family resilience scale in families in Hong Kong. *International Journal of Environmental Research and Public Health*, 20(3), 1929.
- Tangney, J. P., Baumeister, R. F., & Boone, A. L. (2004). High self-control predicts good adjustment, less pathology, better grades, and interpersonal success. *Journal of Personality*, 72(2), 271–324.
- Van Breda, A. D. (2018). A critical review of resilience theory and its relevance for social work. *Social Work*, 54(1), 1–18.
- Walsh, F. (1996). The concept of family resilience: Crisis and challenge. *Family Process*, 35(3), 261–281.
- Walsh, F. (2003). Family resilience: A framework for clinical practice. *Family Process*, 42(1), 1–18.
- Walsh, F. (2016). Family resilience: A developmental systems framework. *European Journal of Developmental Psychology*, 13(3), 313–324.
- Wang, S., Li, Y., & Tu, Y. (2019). Linking proactive personality to life satisfaction in the Chinese context: The mediation of interpersonal trust and moderation of positive reciprocity beliefs. *Journal of Happiness Studies*, 20, 2471–2488.
- Yu, L., & Zhou, X. (2024). Social media addiction among Hong Kong adolescents before and after the pandemic: The effects of parenting behaviors. *Computers in Human Behavior*, 156. <https://doi.org/10.1016/j.chb.2024.108233>
- Zhuo, R., Yu, Y., & Shi, X. (2022). Family resilience and adolescent mental health during COVID-19: A moderated mediation model. *International Journal of Environmental Research and Public Health*, 19(8), 4801.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.