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Mediating Effects of Financial Resilience Between Family Economic Adversity and Mental Health: Population Heterogeneity in Multiple Subgroups

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Purpose: Family economic adversity is important for predicting mental health. Stress process theory elucidates how stressors, particularly in the socioeconomic domain, impair health and well-being. Resilience theory further identifies various mediating and counteractive factors in the stress-coping process. Previous literature has primarily focused on the psychological aspect of resilience, neglecting the importance of financial coping capabilities and resources. As a specific financial capability for coping with emergencies and crises, financial resilience is perceived to improve health and well-being. However, the roles of financial resilience in family processes from economic adversity to mental health and how these paths are relevant to different populations have been understudied, particularly regarding outcomes like psychological distress, subjective happiness, and life satisfaction.

Methods: This study used data from the China Family Panel Studies with a sample of 3,710 household heads to conduct path analyses to examine the roles of financial resilience between family economic adversity and mental health. Multi-group analyses were used to explore population heterogeneity in the proposed model.

Results: The full sample results reveal that financial resilience significantly mediated the effects of family economic adversity on psychological distress, subjective happiness, and life satisfaction after controlling for socioeconomic covariates in income, education, employment, and subjective socioeconomic status. The model applied to different sexes, migrant status subgroups, residence region subgroups, and younger generations, while showing nonsignificant results amongst older adults over 65.

Conclusion: This study enriches mainstream psychological theories of resilience in stress–health nexuses and family processes by providing novel evidence of financial resilience. It provides practical implications for socioeconomic empowerment and health promotion in the face of adversity and uncertainty. Future research is suggested to explore unique population subgroups in health and family economic issues.

Keywords: financial well-being, stress, psychological distress, socioeconomic status, family, population health

Introduction

Economic adversity, an external threat to family processes, is considered to directly increase an individual's risk of mental health problems, as informed by perspectives of stress–health nexuses.[1,2] However, previous studies have not consistently supported such relationships, promoting debate about whether this association depends on the response of potential mechanisms.[3,4] Several theoretical models elucidate the mechanism of coping with the impact of stress on health and development.[5] Research on resilience in development and psychosocial determinants of health has identified numerous factors mediating the relationship between family economic adversity and psychological well-being and health, such as relational support, personal competence, and positive mindset.[6,7] However, these studies have primarily focused on the psychological aspects of resilience, neglecting how people respond to stress in different socioeconomic ways, such as adjusting coping strategies to save money and seek financial support, as indicated by experiences of previous financial crises.[8,9] Financial resilience, the financial coping capability to respond to and recover from adverse situations, particularly in financial emergencies, is considered to impact human development, health, and well-being.[10–12]

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However, it remains empirically unclear how financial resilience affects mental health in the face of adversity. In addition, whether such processes are sustained across different mental health outcomes and population subgroups still remains unknown. This study used the adult sample from a national database to propose a conceptual framework of financial resilience, examined its effect in the nexus between family economic adversity and mental health, and explored its applicability and heterogeneity among different population subgroups.

Economic Adversity and Mental Health

Numerous theories and perspectives suggest a direct link between economic adversity and mental health. For example, stress process theory elucidates how stressors, particularly economic hardships and risks, impair personal health and well-being.[2] Its stress-distress paradigm explains that various sources of life stress deteriorate psychological distress. The family stress model further proposes a series of family processes and health outcomes resulting from economic hardship, adversity, and pressure.[1] More broadly, social determinants of health have been explored across disciplines and contexts to explain the socioeconomic gradients of physical and mental health, health inequality, and human well-being.[13] In this regard, lower socioeconomic status or adverse economic situations are perceived to relate to worse health and development outcomes directly. However, empirical evidence has shown inconsistent associations between economic adversity and mental health outcomes. For example, some studies have found a significant link between the two domains.[4,14] In contrast, other studies have identified only a weak or nonsignificant relationship between them. Wickrama et al[15] demonstrated that family economic adversity did not significantly impact couples' later-life psychological loneliness. Frankham et al[3] systematically reviewed the mechanisms underlying the controversial finding that not all people who experience financial hardships develop mental health difficulties. Additionally, Chen et al[16] reported that family poverty and economic deprivation were not significantly associated with children's psychological distress.

In terms of different mental health outcomes, existing research suggests that the dual-factor model of mental health has better explanatory power because it includes both the negative features of psychopathological symptoms and positive features relevant to subjective well-being.[17] For the positive facet, researchers tend to use life satisfaction and subjective happiness to evaluate human well-being and quality of life.[18] For psychopathological symptoms, a wide range of mental disorders have been well-documented, such as depression, anxiety, and addiction.[17] Psychological distress, as a general and classic psychopathological affliction, is often used to screen for potential mental illness.[19] Furthermore, previous literature has explored the epidemiology and etiology of distinctive features of these diverse mental health outcomes, particularly in the context of economic adversity.[20] It is also assumed that external shocks differentially impact the positive and negative facets of mental health. In this regard, including dual facets to evaluate mental health facilitates a comprehensive understanding of the psychological implications of economic shocks and disadvantages. However, little empirical research has examined this direction to compare the effects of economic adversity on different mental health outcomes in psychological distress, life satisfaction, and subjective happiness.

Resilience in the Stress-Coping Process

Inconsistent empirical results raise an important question: whether a potential mechanism is underlying the direct link between economic adversity and mental health. Several theoretical models provide useful foundations to understand this potential mechanism of stress coping and adaptation toward human development and health. Resilience theory emphasizes the dynamic capacity of a complex adaptive system (eg, appropriate resource utilization and strength-based capability) to cope with life or environmental challenges successfully.[7] Research on resilience in development has identified various mediating and counteractive factors at individual, family, and community levels in the stress-coping process.[7] Conger and Conger[5] proposed a resilience framework in the family stress model, in which various biopsychosocial resources, such as sense of mastery, emotional responsiveness, and family support, play a mediating or buffering role in the process between economic adversity and health or well-being outcomes across generations. Ye et al[21] found that psychological resilience mediated the impact of COVID-19 stresses on mental health and disorders. Broadly, research on the psychosocial determinants of health has also explored various mediating mechanisms, such as social support or relationships, that can be utilized to cope with specific material, financial, and economic stresses on mental health and subjective well-being.[6]

However, the psychological understanding of resilience processes should not be the only pathway, as people also respond to stressors in different socioeconomic ways. For example, families tend to reduce expenditure, increase savings, limit consumer behaviors, decrease risky investments, budget for long-term goals, and seek financial support to weather financial crises, as seen in the Great Depression (1929–1939), the Great Inflation (1965–1982), the Great Recession (2007–2009), and the COVID-19 pandemic.[8,9] In this regard, researchers have highlighted the role of socioeconomic resources, financial capabilities, and coping processes in the face of an emergency and adversity, which have been conceptualized as financial resilience.[12,22]

Incorporating Financial Resilience into Family Process

Since the recovery from the Great Recession, financial resilience has attracted emerging attention. The World Bank initially defined it as people's ability to come up with emergency funds.[23] In the recent decade, unforeseen crises and risks have been increasing in social, financial, environmental, health, and political domains; thus, researchers further widely discussed financial resilience and developed it into various socioeconomic components for people to actively cope with adverse situations embedded in the external environmental structure, such as emergency funds and current assets, accessible financial products and services, financial knowledge and behaviors in daily life or specific situations, and social networks to access financial support.[11,12] Financial resilience has been recognized as an important socioeconomic determinant of health, development, and well-being compared to conventional socioeconomic status or poverty indicators, such as income, education, employment, and subjective socioeconomic status.[24,25] For example, in a South African study, Essel-Gaisey et al[10] found that financial resilience was positively associated with life satisfaction and negatively associated with mental disorders. In Australia, Jayasinghe et al[26] and Tahir et al[27] suggested the positive nexus between financial resilience and life satisfaction. However, there is a lack of empirical evidence on financial resilience in adverse contexts; in other words, whether and how financial resilience takes effect in the face of an emergency, such as economic adversity, remains unclear in the previous literature.[11,12]

Financial resilience could be incorporated as a mediator between family economic adversity and mental health. As an emerging domain, empirical studies have not yet examined the effect of financial resilience in family processes between economic adversity and mental health outcomes. However, resilience theory in stress-coping processes suggests that various resilient resources could mediate and counteract the stressors on health outcomes. Furthermore, empirical evidence on financial resilience also provides indirect implications. For example, Kulshreshtha et al[28] found that financial and psychological resilience mediated the negative relationship between income crises and financial well-being during the COVID-19 pandemic. Economic adversity has been considered an important family stressor that adversely impacts various personal outcomes such as financial security, subjective happiness, and psychological well-being.[29] Financial well-being also shows close relationships with individual mental health, such as the relevance of financial satisfaction to life satisfaction.[27]

According to the theoretical and empirical support above, financial resilience could explain and mediate the relationship between economic adversity and mental health. To elaborate, families exposed to economic stressors and adversity may experience a crisis if they do not have access to adequate emergency assets, financial planning and management, and secure financial services and networks. On the other hand, their financial coping capability may be mobilized simultaneously to respond to crises. For example, they may decrease consumption and risky investments, learn to manage wealth and expenses, and save more money. Drawing on these financially resilient resources and processes may prevent damage to their mental well-being from economic shocks. The latest theoretical framework of financial resilience also provides foundations for the above argument to unpack the dynamic three stages of a financial resilience process.[12]

It is important to incorporate financial resilience into family processes from multidisciplinary and global perspectives. A systematic scoping review documents that the surge of financial resilience in recent years has benefited from multidisciplinary discussions and incorporations, including economics, business, marketing, social policy, sociology, psychology, environmental science, family studies, development studies, demography, geriatrics, and public health.[12] Applying financial-related constructs to family science could thus facilitate more systemic discourses in both disciplines. Moreover, a series of experiments by behavioral economists have shown that economic shocks in income and expense have tremendous impacts on daily life, which activate various financial coping behaviors among distinct human

interactions and family dynamics.[30] Some psychological studies on family economic issues have also found that interpersonal and intrapersonal adjustments in financial planning and support are crucial counteractive pathways for various families to cope with emergencies together.[9,31]

Furthermore, multidisciplinary studies from different countries support that financial resilience could be universal and contextual in exploring family processes across the globe. Although financial coping and resilience may be prevalent in family hardships and difficulties, the emerging research on incorporative perspectives should pay attention to accumulating diverse contextual evidence. Indeed, Liu et al argued that situational and cultural factors, such as household characteristics, family processes, and perceptions of economic adversity, should be noted when exploring the roles of financial resilience.[12] Considering this global comparative perspective can enhance a better understanding of financial resilience in economic adversity. Overall, this study aims to fill the important empirical gaps in previous literature on stress, coping, and mental health, which may bring the financial coping perspective into family studies on traditional stress processes using the evidence from China's context.

Population Heterogeneity in the Mediating Process

In addition to the general mediating process of financial resilience between family economic adversity and mental health, its variation and heterogeneity across different population subgroups should be considered. Intersectionality theory elucidates how different population identities and subgroups intersect to shape vulnerabilities and disadvantages.[32] Generally, it suggests that being female and older, having migrant status, and residing in poorer localities comprise risk factors that expose these disadvantaged subgroups to worse health conditions[33–35] and financial resilience levels.[11,23,36] Population heterogeneity also exists in economic adversity, financial resilience, and mental health. Particularly, previous research has produced inconsistent findings for sex and age group differences. For example, women and older people were more vulnerable to stressors arising from economic adversity or financial strain in the Great Recession, and they thus showed worse psychological distress or mental disorders than men and younger people.[37,38] However, other studies found no sex or age differences in the relationships between various economic difficulties and mental health outcomes.[39] These mixed findings indicate the need to validate whether relationships between economic adversity and mental health vary across sex and age subgroups.

Moreover, the pathway from financial resilience to mental health may also vary across sex and age subgroups, although only a few studies have examined this direction. Essel-Gaisey et al[10] found that the negative associations between financial resilience and mental disorders were stronger among males than females. Liu and Chen[25] examined the significant effects of sex and age when examining positive mental health outcomes of financial resilience. Broadly, the significant differences in sex and age groups also exist in the relationship between overall financial capability and holistic health in life satisfaction and well-being.[32] Finally, it is also worth noting that scarce research examines the differences in migrant status and regional development subgroups regarding mechanisms between economic adversity, financial resilience, and mental health.[35] In summary, there is limited or conflicting evidence on population heterogeneity in subgroups of sex, age, migrant status, and residence region when examining the proposed mechanisms in this study. Still, exploring these group differences is necessary and important because they help us better understand the mediating process of financial resilience among intersectional population identities and provide implications for targeted policy and service practices promoting public health in economic adversity.

The Present Study

Based on the theories and reviews above, this study proposed a conceptual framework to explore the mediating role of financial resilience between family economic adversity and psychological distress, subjective happiness, and life satisfaction after controlling for conventional socioeconomic covariates in income, education, employment, and subjective socioeconomic status (Figure 1). This framework assumes that financial resilience positively counteracts the deteriorative impacts of economic adversity on mental health, and the mediating pathways apply to different adult population subgroups in terms of sex, age, migrant status, and residence region. The framework was examined in the Chinese context using the China Family Panel Studies.

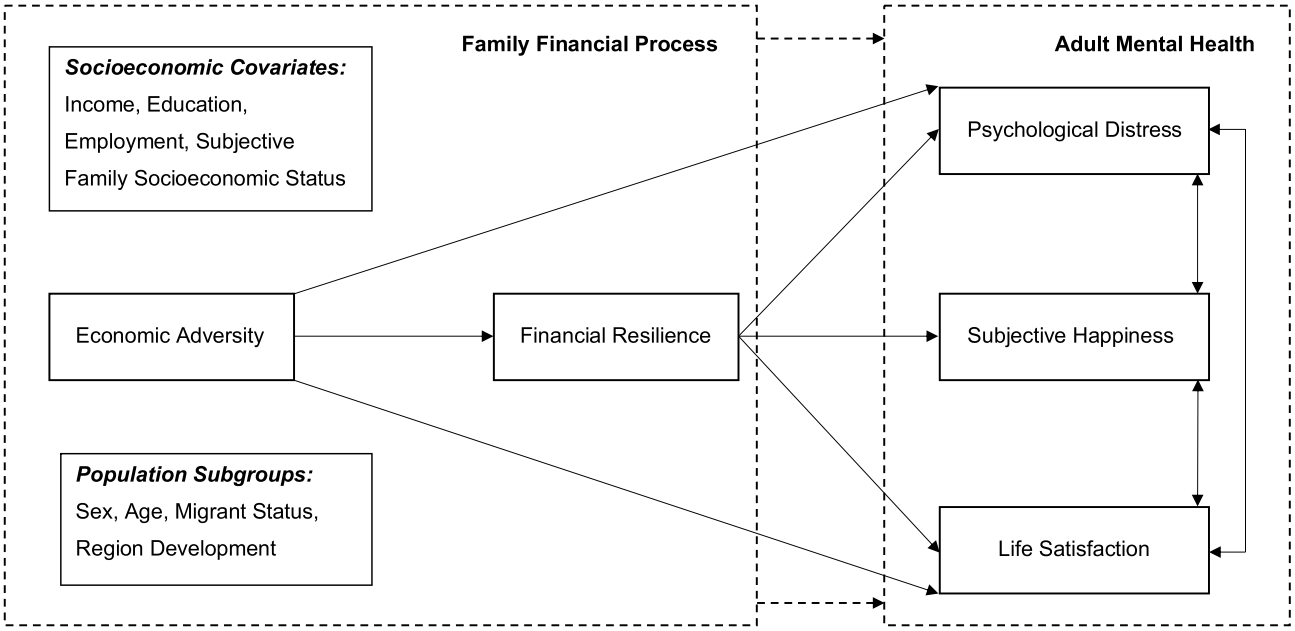

Figure 1 Conceptual framework.

The China's context is important for us to understand financial resilience in family processes of economic adversity and mental health. First, China's economy has been in a transitional period in the recent decade, with its economic growth rates gradually becoming steady and social problems emerging.[11] The social welfare system in Mainland China pays attention to vulnerable groups in great need, and this extensive system is distinct from the traditional welfare state that highlights the universal provision of public benefits.[40,41] The socioeconomic transition of macro backgrounds poses challenges to national welfare provision and delivery, and shapes family economic issues and human well-being.[11,20] Under the circumstances, it is valuable to explore how Chinese people cope with economic transition and adversity through positive financial strategies and whether the family financial process can promote human mental health and well-being. This research direction also aligns with the theoretical highlights in the family stress model and financial resilience perspective.

Second, the traditional Confucianism culture makes family financial coping processes in the face of adversity more complicated. Previous literature has documented that Chinese people brought up in this unique cultural background tend to save more money and live a prudent life.[24] Thus, family financial planning and budgeting in the Chinese context is prominent and different from conventional discussions about financial resilience in Western countries, where planning issues might be a prior target.[8,25] Furthermore, policy priority in family economic issues might also be distinct in the Chinese context from other countries. For example, the exceptionally high savings rates might hinder household consumption and financial investment, thus bringing about side effects.[11,42] In this regard, encouraging financial resilience is necessary, as it combines financial literacy, financial access, and positive financial behaviors into accumulative assets and supportive social networks. The empirical examinations in this study are thus valuable in providing policy implications for contexts like China, where saving is favored and the financial transition is developing.

To the best of our knowledge, this study originally examines how financial resilience promotes mental health in adversity. We believe it enriches theoretical perspectives of resilience in stress–health coping processes through its original contribution augmenting the traditional psychological mainstream with the socioeconomic concept of financial resilience; it can respond to controversies about the relationship between economic adversity and mental health and subgroup differences in the sex and age; it can elucidate the nuanced heterogeneity among different population subgroups and mental health outcomes, and it can also provide targeted policy and service implications for health promotion, prevention, and intervention, particularly in the face of risks and emergencies.

Materials and Methods

Data and Sample

This study utilized data from the China Family Panel Studies 2014–2015. This database was chosen due to its theoretical relevance and methodological rigor. This database used multistage probability proportional to size sampling and face-to-face interviews aided by computer-assisted personal interviewing technology to collect data from 25 provinces, representing 94.5% of the total population in Mainland China. This database primarily investigated family economic issues, financial attitudes and behaviors, and well-being, and thus is suitable for answering our research question. The 2014 wave was chosen because it included more questions about family financial resilience, adversity, and mental health.[43] In this wave, 4085 urban families and their heads answered the individual survey and family finance survey. After matching the household data and removing respondents who did not answer financial literacy questions, 3821 family heads and their families were included. A total of 3710 family heads were finally included as the research sample, given that they provided complete responses to all variables covering family economic adversity, financial resilience, demographic characteristics, and mental health outcomes. The above listwise deletion approach to handling the missing data is suitable for this study, considering that cases with missing values only accounted for less than 10% and were at random. The mean age of the final sample was 46.7 years, 18.5% of whom were aged over 65. Around half of respondents were female (52.9%).

Measures

Economic Adversity

Respondents were asked to report whether their families encountered any of the following adverse economic life events: financial hardship, housing difficulties, unaffordable medical expenses, and unemployment. This measure was often used to evaluate specific economic hardship, stress, and pressure in family contexts.[15] A score of 1 was given to the possession of any one of the four adverse economic life events; thus, total scores ranged from 0 to 4, with a higher score indicating more severe family economic adversity.

Financial Resilience

The study adopted a validated financial resilience index of sixteen items covering family emergency funds and current assets, financial access to products and services, financial knowledge and behaviors, and social networks for financial support.[11] For example, respondents were asked how difficult it would be for their family to raise ¥ 20,000 (approximately $2,760) in the event of an emergency, their expense-to-income ratios, access to bank accounts, objective subjective and financial literacy, financial planning actions in checking bank balance and monitoring financial situations, formal financial support from governmental subsidies, and informal financial support in exchanging gifts and money with relatives or friends during important life events. Each item was measured on a 4-point scale. Cronbach's alpha in this study was 0.67. Index scores were standardized into a continuous range from 1 to 4, with a higher score indicating greater financial coping ability in adversity. Appendix Table 1 presents the specific scoring methodology of the financial resilience index.

Mental Health

Three variables evaluated individual mental health outcomes: psychological distress, subjective happiness, and life satisfaction. Psychological distress was measured by the Kessler-6 scale, comprising six items on respondents' depression and anxiety symptoms in the past month.[19] Sample items included how often the respondent felt so depressed that nothing could cheer them up or they felt hopeless during the past 30 days. Responses were measured on a 5-point Likert scale ranging from 0 to 4, with higher scores indicating worse psychological distress and possible severe mental illness. Cronbach's alpha in this study was 0.86. A single 11-point "ladder" item to report respondents' feelings of happiness measured subjective happiness, with higher scores indicating higher happiness levels. Life satisfaction comprised three 5-point Likert items investigating respondents' satisfaction and future expectations toward personal and family lives.[40] Cronbach's alpha of the scale in this study was 0.84. Scores on the three items are summed up and range from 3 to 15, with higher scores indicating respondents' higher satisfaction with their life situations.

Socioeconomic Covariates

Four conventional variables measuring socioeconomic status were included as covariates. Previous studies have widely used these socioeconomic measures to examine determinants of mental health and well-being outcomes.[44,45] First, the database includes personal yearly income levels to be categorized into six ordinal responses ranging from 1 to 6, ie, Under ¥20,000, ¥20,000–39,999, ¥40,000–59,999, ¥60,000–79,999, ¥80,000–99,999, and ¥100,000 and above. Second, five ascending responses, illiterate, primary, middle, high school, and college or above, measured educational level. Third, employment status was coded from 1 to 5, indicating not in the labor force, unemployed, self-employed enterprise, part-time employed, and full-time employed. Fourth, a single item asking respondents to identify the social class they felt their families belonged to on a 5-point scale measured subjective socioeconomic status, with a higher score indicating higher perceived socioeconomic status.

Population Subgroups

Four dummy variables in demographics coded as 0 and 1 were used to conduct subgroup analysis. Previous studies have identified population heterogeneity in financial resilience[22,25] and mental health outcomes.[34,44] The following subgroups were thus included in this study: female and male, younger and older generation (ie, aged above 65), migrant and non-migrant, and developing and developed region. In the database, given that only the urban sample responded to financial resilience questions, respondents holding a rural hukou (residential registration) were regarded as migrants.[41,46] In terms of regional development, different provinces in China are at varying levels of socioeconomic development. Based on provincial codes in the database, respondents from East China were regarded as residents of the developed region and others as residents of the developing region.[35]

Data Analysis

Sample descriptive information and bivariate correlation coefficients were computed for the included variables. Multiple path analysis models were fitted to examine the mediating effects of financial resilience between economic adversity and mental health outcomes in psychological distress, subjective happiness, and life satisfaction. Path analysis was performed using the *lavaan* package of statistical software R. The results of path analysis were assessed by the following model fit indices: chi-square, comparative fit index (CFI), root-mean-square of approximation (RMSEA), and standardized root mean square residual (SRMR). The suggested cut-off criteria for acceptable model fit were CFI > 0.90, RMSEA < 0.08, and SRMR < 0.08.[47] Unstandardized parameter estimates, their standard errors, standardized parameter estimates, the significance tests of p values and 95% bias-corrected confidence intervals were calculated. Bootstrap analysis was conducted using 5000 bootstrap samples to estimate the indirect effects. The indirect effect was significant if the 95% bias-corrected confidence interval did not contain zero.[48] Income, education, employment, and subjective socioeconomic status were controlled for all these mediation models. Multi-group path analyses were then conducted to examine the potential moderating effects of population subgroups. Measurement invariance was ensured across all subgroups. Group differences in mediating effects were examined by defining the subtraction parameters and using the significance tests of 95% bias-corrected confidence intervals. Additionally, given that all variables were self-reported, the potential common method bias was examined by Harman's single factor test. Our results show that the first extracted common component can explain 28.40% of the total variance, and all extracted components can explain 58.96% of the total variance, which suggests that the common method bias in this study was not serious. Moreover, given that financial resilience is relevant to socioeconomic resources and four conventional socioeconomic covariates were included, the potential multicollinearity issue should be examined by conducting the Variance Inflation Factor (VIF) test. Our results show that the average VIF values were 1.27, and all VIF values were below 1.6 after estimating path models, which suggests that the multicollinearity issue was not serious in this study.

Results

Descriptive Statistics

Table 1 presents descriptive statistics for the full sample. Most of the sample (81.5%) were family heads under 65. Females accounted for 52.9% of the total sample. Most respondents were non-migrants (78.1%) and were developed

Table 1 Sample Descriptive Statistics

Variables	Categories	N	%
Sex	Female	1961	52.9
	Male	1749	47.1
Age	Younger	3025	81.5
	Older	685	18.5
Migrant Status	Migrant	814	21.9
	Non-migrant	2896	78.1
Residence Region	Developing region	1390	37.5
	Developed region	2320	62.5
Income yearly (¥)	Under 20,000	517	13.94
	20,000–39,999	889	23.96
	40,000–59,999	957	25.8
	60,000–79,999	490	13.21
	80,000–99,999	337	9.08
	100,000+	520	14.02
Education level	Illiterate	393	10.6
	Primary school	491	13.2
	Middle school	1098	29.6
	High school	938	25.3
	College+	790	21.3
Employment status	Not in the labor force	1564	42.2
	Unemployed	64	1.7
	Self-employed enterprise	388	10.5
	Part-time/casual/odd jobs	159	4.3
	Full-time employed	1535	41.4
Subjective Family Socioeconomic Status	Very low	234	6.3
	Low	527	14.2
	Middle	2238	60.3
	High	561	15.1
	Very high	150	4.0

Table 2 Bivariate Correlations

	M	SD	1	2	3	4	5
1. Economic Adversity	0.894	0.859	1.000				
2. Financial Resilience	2.798	0.374	–0.304***	1.000			
3. Psychological Distress	3.256	3.692	0.210***	–0.171***	1.000		
4. Subjective Happiness	7.453	2.093	–0.150***	0.184***	–0.343***	1.000	
5. Life Satisfaction	11.410	2.520	–0.203***	0.205***	–0.386***	0.623***	1.000

Note: *** p<0.001.
Abbreviations: M, mean; SD, standard deviation.

region residents (62.5%). Table 2 shows the mean, standard deviation, and bivariate correlation coefficients of all key variables. There was a moderate negative correlation between economic adversity and financial resilience (r = –0.304). Economic adversity was weakly and positively related to psychological distress (r = 0.210) but negatively related to subjective happiness (r = –0.150) and life satisfaction (r = –0.203). Financial resilience was moderately and negatively associated with psychological distress (r = –0.171) but positively associated with subjective happiness (r = 0.184) and life satisfaction (r = 0.205). Additionally, there were strong correlations among the three mental health outcomes with r values larger than 0.30. All correlations were significant at $p < 0.001$.

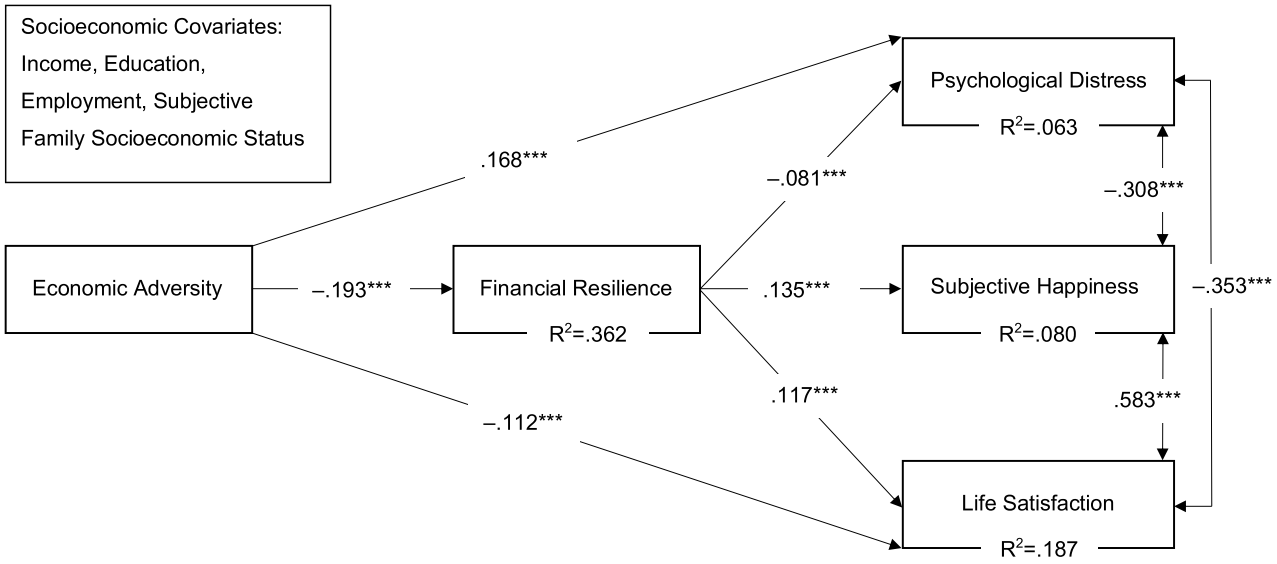

Figure 2 Standardized structural model (Full sample). For clarity of presentation, the direct path coefficient from Economic Adversity to Subjective Happiness is not shown in figure, which is –0.081***. ***p<0.001.

Mediating Effects of Financial Resilience in the Full Sample

Figure 2 and Table 3 show the path analysis results for the full sample. Economic adversity was negatively associated with financial resilience (β = –0.193, SE = 0.006, p < 0.001) after controlling for socioeconomic covariates. This model explained

Table 3 Path Analysis Results for Full Sample

Model Paths	B	β	SE	p	CI (Lower, Upper)	
FR<–EA	–0.084	–0.193	0.006	0.000	–0.096	–0.073
PD<–FR	–0.798	–0.081	0.203	0.000	–1.197	–0.399
PD<–EA	0.723	0.168	0.072	0.000	0.585	0.866
PD<–Income	–0.086	–0.037	0.046	0.063	–0.176	0.001
PD<–Education	–0.064	–0.022	0.058	0.266	–0.178	0.050
PD<–Employment	–0.063	–0.032	0.035	0.071	–0.133	0.006
PD<–SSES	–0.250	–0.057	0.082	0.002	–0.414	–0.088
SH<–FR	0.752	0.135	0.107	0.000	0.544	0.966
SH<–EA	–0.197	–0.081	0.041	0.000	–0.276	–0.118
SH<–Income	–0.012	–0.009	0.024	0.623	–0.058	0.035
SH<–Education	–0.001	–0.001	0.031	0.968	–0.063	0.060
SH<–Employment	–0.016	–0.014	0.019	0.398	–0.055	0.021
SH<–SSES	0.479	0.192	0.046	0.000	0.390	0.570
LS<–FR	0.788	0.117	0.125	0.000	0.541	1.031
LS<–EA	–0.328	–0.112	0.046	0.000	–0.417	–0.239
LS<–Income	0.027	0.017	0.027	0.323	–0.027	0.080
LS<–Education	–0.068	–0.034	0.035	0.048	–0.136	0.000
LS<–Employment	–0.009	–0.007	0.022	0.686	–0.053	0.034
LS<–SSES	1.056	0.352	0.053	0.000	0.953	1.158
PD<–FR<–EA	0.067	0.016	0.018	0.000	0.033	0.103
SH<–FR<–EA	–0.063	–0.026	0.010	0.000	–0.083	–0.045
LS<–FR<–EA	–0.066	–0.023	0.011	0.000	–0.090	–0.044

Abbreviations: FR, financial resilience; EA, economic adversity; PD, psychological distress; SSES, subjective family socioeconomic status; LS, life satisfaction. B, unstandardized coefficients; β, standardized coefficients; SE, standard error; p, significance p values; CI, 95% bias-corrected confidence interval, generated from 5000 times bootstrapping analysis.

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36.2% of the variance of financial resilience. Economic adversity had a significant positive association with psychological distress after controlling socioeconomic covariates (β = 0.168, SE = 0.072, p < 0.001). Conversely, the direct effects of economic adversity on subjective happiness (β = –0.081, SE = 0.041, p < 0.001) and life satisfaction (β = –0.112, SE = 0.046, p < 0.001) were significantly negative. Financial resilience was significantly associated with the three strongly intercorrelated mental health outcomes after including all covariates at the level of p < 0.001 (psychological distress: β = –0.081, SE = 0.203; subjective happiness: β = 0.135, SE = 0.107; life satisfaction: β = 0.117, SE = 0.125). Generally, income, education, and employment were not significantly associated with mental health outcomes, while subjective family socioeconomic status showed significant associations at the p < 0.001 level (β = –0.057, SE = 0.082; β = 0.192, SE = 0.046; β = 0.352, SE = 0.053, respectively). The bootstrapping analysis revealed that financial resilience significantly mediated the effects of economic adversity on mental health outcomes at the level of p < 0.001 (β = 0.016, SE = 0.018, 95% CI = [0.033, 0.103]; β = –0.026, SE = 0.010, 95% CI = [–0.083, –0.045]; β = –0.023, SE = 0.011, 95% CI = [–0.090, –0.044], respectively). This overall model was identified and showed good fit indices with CFI = 1.0, RMSEA = 0.0, and SRMR = 0.0. R-square results indicated that the model explained 6.3%, 8.0%, and 18.7% of the variances in psychological distress, subjective happiness, and life satisfaction, respectively.

Comparing Population Subgroup Differences

Figure 3 and Table 4 present the path analysis results for the female and male subgroups. Overall, the model coefficients in the female group were larger than those in the male group. For example, economic adversity was significantly negatively associated with financial resilience among female (β = –0.198) and male (β = –0.187) family heads. In contrast, financial resilience was significantly positively associated with subjective happiness and life satisfaction among female (β = 0.158 and 0.141, respectively) and male (β = 0.110 and 0.091, respectively) family heads. The mediating effects were significant in both groups and showed nonsignificant differences. For example, the indirect effects between economic adversity and life satisfaction via financial resilience had nonsignificant differences between female-headed and male-headed families (β = –0.011, SE = 0.021, 95% CI = [–0.067,0.014]).

Figure 4 and Table 5 present the path analysis results for the younger and older subgroups. Overall, the significant direct effects of economic adversity on psychological distress (β = 0.153), subjective happiness (β = –0.061), and life satisfaction (β = –0.085) were smaller in the younger than the older subgroup (β = 0.222, –0.151, and –0.229, respectively). Additionally, the significant effect of economic adversity on financial resilience in the younger subgroup was smaller than that of the older subgroup (β = –0.178 vs –0.156). Furthermore, the effects of financial resilience on

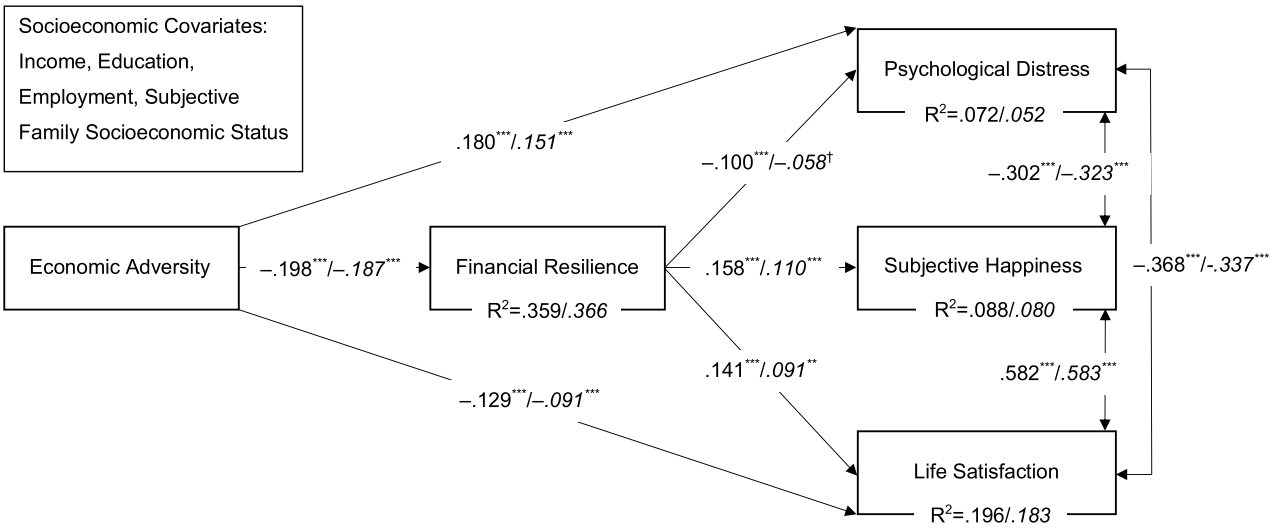

Figure 3 Standardized path analysis results (Sex subgroup). Standardized coefficients for the female subgroup are presented first, followed by the coefficients (in italic texts) for the male subgroup. For clarity of presentation, the direct path coefficients from Economic Adversity to Subjective Happiness are not shown in figure, which is –0.099***/ –0.062*. †p<0.1, *p<0.05, **p<0.01, ***p<0.001.

Table 4 Path Analysis Results for Sex Subgroups

Model Paths	Female Subgroup						Male Subgroup					
	B	β	SE	p	CI (Lower, Upper)		B	β	SE	p	CI (Lower, Upper)	
FR<–EA	–0.087	–0.198	0.008	0.000	–0.103	–0.071	–0.081	–0.187	0.008	0.000	–0.096	–0.064
PD<–FR	–1.016	–0.100	0.286	0.000	–1.588	–0.465	–0.542	–0.058	0.296	0.067	–1.139	0.024
PD<–EA	0.803	0.180	0.104	0.000	0.600	1.008	0.615	0.151	0.102	0.000	0.420	0.822
PD<–Income	–0.083	–0.034	0.067	0.213	–0.215	0.047	–0.100	–0.046	0.063	0.115	–0.224	0.021
PD<–Education	–0.100	–0.034	0.078	0.201	–0.251	0.054	0.001	0.000	0.083	0.991	–0.164	0.160
PD<–Employment	–0.048	–0.023	0.049	0.330	–0.146	0.047	–0.032	–0.016	0.051	0.524	–0.130	0.067
PD<–SSES	–0.167	–0.036	0.115	0.148	–0.397	0.051	–0.337	–0.081	0.118	0.004	–0.568	–0.103
SH<–FR	0.874	0.158	0.145	0.000	0.582	1.159	0.622	0.110	0.165	0.000	0.298	0.940
SH<–EA	–0.240	–0.099	0.055	0.000	–0.350	–0.132	–0.153	–0.062	0.062	0.014	–0.276	–0.034
SH<–Income	–0.081	–0.061	0.033	0.014	–0.145	–0.017	0.060	0.046	0.035	0.084	–0.007	0.128
SH<–Education	0.025	0.015	0.042	0.552	–0.059	0.107	–0.033	–0.019	0.047	0.482	–0.126	0.061
SH<–Employment	0.032	0.028	0.026	0.230	–0.020	0.084	–0.059	–0.049	0.029	0.043	–0.116	–0.002
SH<–SSES	0.475	0.192	0.060	0.000	0.359	0.592	0.487	0.195	0.069	0.000	0.352	0.619
LS<–FR	0.945	0.141	0.170	0.000	0.609	1.282	0.617	0.091	0.195	0.002	0.229	0.995
LS<–EA	–0.379	–0.129	0.065	0.000	–0.504	–0.250	–0.268	–0.091	0.070	0.000	–0.404	–0.133
LS<–Income	0.004	0.002	0.038	0.917	–0.072	0.075	0.054	0.034	0.040	0.176	–0.023	0.131
LS<–Education	–0.041	–0.021	0.045	0.362	–0.130	0.046	–0.111	–0.052	0.054	0.040	–0.219	–0.006
LS<–Employment	0.032	0.023	0.030	0.293	–0.027	0.090	–0.056	–0.040	0.033	0.088	–0.123	0.008
LS<–SSES	1.036	0.345	0.071	0.000	0.896	1.174	1.079	0.361	0.077	0.000	0.924	1.225
PD<–FR<–EA	0.088	0.020	0.026	0.001	0.039	0.143	0.044	0.011	0.025	0.074	–0.002	0.095
SH<–FR<–EA	–0.076	–0.031	0.014	0.000	–0.105	–0.050	–0.050	–0.021	0.015	0.001	–0.080	–0.023
LS<–FR<–EA	–0.082	–0.028	0.016	0.000	–0.115	–0.051	–0.050	–0.017	0.017	0.003	–0.085	–0.018
Subgroup differences in indirect effects: PD<–FR<–EA (female – male)							0.044	0.009	0.036	0.221	–0.027	0.116
Subgroup differences in indirect effects: SH<–FR<–EA (female – male)							–0.026	–0.011	0.021	0.213	–0.067	0.014
Subgroup differences in indirect effects: LS<–FR<–EA (female – male)							–0.032	–0.011	0.024	0.179	–0.079	0.015

Abbreviations: FR, financial resilience; EA, economic adversity; PD, psychological distress; SSES, subjective family socioeconomic status; LS, life satisfaction. B, unstandardized coefficients; β, standardized coefficients; SE, standard error; p, significance p values; CI, 95% bias-corrected confidence interval, generated from 5000 times bootstrapping analysis.

mental health outcomes were all nonsignificant and smaller in the older subgroup at the $p > 0.05$ level (β = –0.062,0.036, and 0.050) than in the younger subgroup (β = –0.104,0.149, and 0.142). The mediating effects of financial resilience between economic adversity and mental health were thus all nonsignificant in the older subgroup at the $p > 0.05$ level (psychological distress: β = 0.010, SE = 0.039, 95% CI = [–0.021,0.133]; subjective happiness: β = –0.006, SE = 0.019, 95% CI = [–0.054,0.021]; life satisfaction: β = –0.008, SE = 0.022, 95% CI = [–0.071,0.017]). Notably, the subgroup differences (younger – older) in financial resilience between economic adversity and subjective happiness were significant at the $p < 0.05$ level (β = –0.021, SE = 0.022, 95% CI = [–0.093, –0.007]). Furthermore, results like the previous sex subgroup analysis were also evident in the migrant status and region subgroups (see Appendix Figures 1, 2 and Appendix Tables 2 and 3).

Discussion

Overall Mediating Mechanisms of Financial Resilience

Financial resilience mediated the significant associations between economic adversity and three mental health outcomes: psychological distress, subjective happiness, and life satisfaction. This supports the argument that economic adversity threatens and challenges families' financial coping and mental well-being, while financial resilience acts as a transitional channel to facilitate and empower individuals. The significant association between economic adversity and mental health aligns with the theoretical assumptions of stress–health research[1,2] and empirical studies.[4,14] Given previous contradictory research findings, this study further validates the threat of economic adversity to personal mental health across populations and

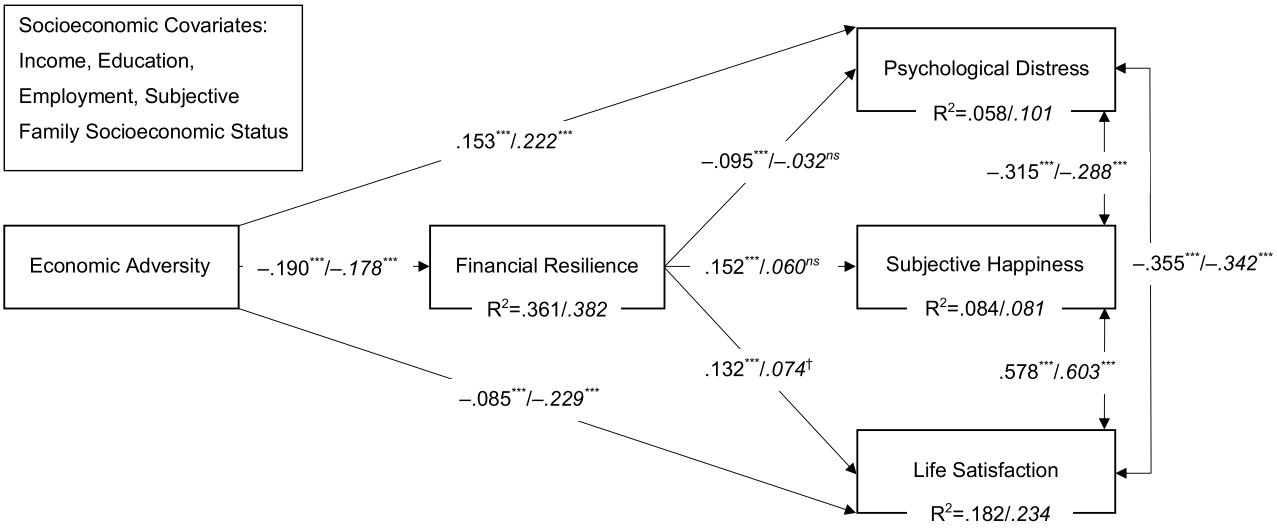

Figure 4 Standardized path analysis results (Age subgroup). Standardized coefficients for the younger subgroup are presented first, followed by the coefficients (in italic texts) for the older subgroup aged 65 years old and above. For clarity of presentation, the direct path coefficients from Economic Adversity to Subjective Happiness are not shown in figure, which is –0.061**/–*0.151****. †p<0.1, **p<0.01, ***p<0.001.
Abbreviation: ns, nonsignificant.

contexts. Additionally, the significant associations between financial resilience and mental health outcomes in this study are consistent with previous research.[10,26] Although financial resilience research is an emerging field with limited discussion on its outcomes, this finding provides empirical support for regarding financial resilience as an important socioeconomic determinant of health.[24,25] Taken together, this study advances our understanding of specific pathways by examining the mediating process between economic adversity and financial resilience and mental health, highlighting the important role of financial resilience in mitigating the negative and traumatic impact of economic adversity on mental health.

Table 5 Path Analysis Results for Age Subgroups

Model Paths	Younger Subgroup						Older Subgroup					
	B	β	SE	p	CI (Lower, Upper)		B	β	SE	p	CI (Lower, Upper)	
FR<–EA	–0.082	–0.190	0.007	0.000	–0.095	–0.069	–0.082	–0.178	0.014	0.000	–0.110	–0.054
PD<–FR	–0.913	–0.095	0.217	0.000	–1.338	–0.483	–0.351	–0.032	0.527	0.505	–1.402	0.677
PD<–EA	0.638	0.153	0.082	0.000	0.479	0.801	1.113	0.222	0.184	0.000	0.760	1.488
PD<–Income	–0.095	–0.042	0.050	0.056	–0.191	0.005	–0.084	–0.030	0.122	0.490	–0.315	0.162
PD<–Education	0.016	0.005	0.063	0.797	–0.106	0.141	–0.329	–0.100	0.138	0.017	–0.590	–0.049
PD<–Employment	–0.065	–0.032	0.038	0.092	–0.140	0.011	–0.270	–0.049	0.163	0.098	–0.591	0.040
PD<–SSES	–0.183	–0.042	0.092	0.048	–0.364	0.003	–0.513	–0.110	0.179	0.004	–0.867	–0.165
SH<–FR	0.852	0.152	0.118	0.000	0.623	1.088	0.337	0.060	0.265	0.204	–0.178	0.866
SH<–EA	–0.147	–0.061	0.045	0.001	–0.235	–0.061	–0.386	–0.151	0.105	0.000	–0.596	–0.183
SH<–Income	0.012	0.009	0.026	0.639	–0.038	0.062	–0.122	–0.086	0.065	0.060	–0.251	0.006
SH<–Education	0.012	0.006	0.036	0.749	–0.058	0.084	–0.026	–0.016	0.066	0.692	–0.157	0.106
SH<–Employment	–0.013	–0.011	0.022	0.554	–0.057	0.031	–0.092	–0.032	0.113	0.418	–0.314	0.125
SH<–SSES	0.473	0.187	0.052	0.000	0.372	0.576	0.484	0.202	0.094	0.000	0.300	0.663
LS<–FR	0.885	0.132	0.141	0.000	0.610	1.166	0.511	0.074	0.295	0.083	–0.083	1.084
LS<–EA	–0.245	–0.085	0.051	0.000	–0.347	–0.148	–0.726	–0.229	0.114	0.000	–0.947	–0.508
LS<–Income	0.058	0.037	0.030	0.049	0.000	0.114	–0.112	–0.064	0.070	0.110	–0.249	0.028
LS<–Education	–0.071	–0.033	0.040	0.074	–0.149	0.007	–0.087	–0.042	0.074	0.245	–0.231	0.060
LS<–Employment	–0.035	–0.025	0.025	0.155	–0.084	0.012	0.250	0.071	0.132	0.058	–0.017	0.509
LS<–SSES	1.040	0.344	0.060	0.000	0.920	1.159	1.107	0.375	0.115	0.000	0.883	1.332

(*Continued*)

Table 5 (Continued).

Model Paths	Younger Subgroup						Older Subgroup					
	B	**β**	**SE**	**p**	**CI (Lower, Upper)**		**B**	**β**	**SE**	**p**	**CI (Lower, Upper)**	
PD<–FR<–EA	0.075	0.018	0.019	0.000	0.039	0.114	0.029	0.006	0.044	0.516	–0.055	0.120
SH<–FR<–EA	–0.070	–0.029	0.011	0.000	–0.093	–0.049	–0.028	–0.011	0.022	0.215	–0.074	0.015
LS<–FR<–EA	–0.073	–0.025	0.013	0.000	–0.099	–0.049	–0.042	–0.013	0.026	0.103	–0.096	0.006
Subgroup differences in indirect effects: PD<–FR<–EA (younger – older)							0.046	0.012	0.048	0.332	–0.052	0.139
Subgroup differences in indirect effects: SH<–FR<–EA (younger – older)							–0.042	–0.018	0.025	0.089	–0.091	0.009
Subgroup differences in indirect effects: LS<–FR<–EA (younger – older)							–0.031	–0.012	0.029	0.289	–0.087	0.029

Note: Older subgroup aged 65 years old and above.

Abbreviations: FR, financial resilience; EA, economic adversity; PD, psychological distress; SSES, subjective family socioeconomic status; LS, life satisfaction. B, unstandardized coefficients; β, standardized coefficients; SE, standard error; p, significance p values; CI, 95% bias-corrected confidence interval, generated from 5000 times bootstrapping analysis.

Notably, our model explained a higher proportion of the variance in life satisfaction than in psychological distress and subjective happiness. This is consistent with previous findings on the dual-factor model of mental health. Previous research has suggested that life satisfaction could be a stronger mental well-being indicator than other positive or negative affective outcomes.[17] Additionally, existing literature on financial resilience has consistently examined its relationship with life satisfaction.[26,27] Integrating these consistent findings, it can be further inferred that financial resilience and its mediating process, as the three-stage dynamic process of financial resilience theory argued,[12] apply better to positive health and well-being outcomes rather than problems. Indeed, financial resilience is conceptualized as manifesting positive financial coping in the face of emergency and adversity, which is perceived to directly impact one's sense of financial security, independence, satisfaction, and overall well-being.[24] In this regard, the study emphasizes the positive nature of financial resilience in the stress–health nexus.

Another interesting finding in our model is that, apart from subjective family socioeconomic status, none of the conventional socioeconomic covariates was significant, contradicting previous assumptions from the socioeconomic status theory and social determinants of health framework.[13] However, it is also justified because existing studies exploring wealth or financial capability as new determinants of health have consistently found these traditional socioeconomic covariates to be insignificant.[32,44] Researchers have argued that financial resilience could be a new indicator of socioeconomic status or a determinant for future investigations.[24,25] This study further provides empirical support for such a promising direction. Second, the results of the covariates also highlight the significance of subjective family socioeconomic status, consistent with previous studies differentiating the objective and subjective effects of socioeconomic conditions on health and well-being.[45] Researchers have criticized that traditional socioeconomic indicators neglect subjective meanings and actionable capability.[13] Some scholars have further developed subjective constructs in this domain.[45] In this vein, it is recommended that future research should explore novel socioeconomic determinants by considering actionable targets and subjective meanings, such as financial resilience and subjective social status in family processes, on the traditional basis of objective and structural barriers. Another direction could be to compare predictive effects or explore inner mechanisms among these socioeconomic indicators, particularly the two emerging concepts above.

Population Applicability of Financial Resilience Processes

Empirical findings from this study show that the proposed framework of financial resilience applies to diverse population subgroups: females, males, migrants, non-migrants, developed and developing regions, and younger generations aged below 65 years old. Although the differences were nonsignificant, the larger path coefficients in the female group suggest that they were more susceptible to economic threats than males and benefited more from financial resilience. This is consistent with previous intersectionality literature highlighting females' disadvantaged position.[32] Financial resilience researchers have also advocated investing in gender equality to empower women's development.[12,49] This study further emphasized that both females and males could benefit from the financial resilience process. This finding contributes to

responding to the mixed findings in sex group differences.[37,39] Similarly, the comparative results in migrant status and residence region subgroups also align with previous research highlighting the disadvantaged positions of migrants and residents of developing regions.[34,35] In particular, the paths between financial resilience and mental health outcomes in developed regions showed stronger effects than those in developing regions. This might be due to better economic performance and quality of life in Eastern China, as suggested by previous literature.[35] In this regard, the financial resilience levels of residents in developed regions could be higher than those in less economically developed regions, enabling them to cope flexibly with shocks. Taken together, the comparative findings regarding migrant status and regional development provide preliminary empirical evidence regarding heterogeneity in the mediating process of financial resilience between economic adversity and mental health. It is also recommended that future research develops more detailed examinations of population heterogeneity in these subgroups.

An unexpected finding in this study was the significant differences among age subgroups, suggesting that those aged 65 and older could be a unique population in the mediating process of financial resilience. Our results indicated that older adults might experience more serious threats to mental health outcomes but less in the financial resilience domain when faced with economic adversity. Additionally, their financial resilience levels cannot significantly improve their mental health conditions. Previous research has consistently shown that older people face intersectional and cumulative disadvantages in financial, health, and quality of life domains.[36,37] This study further extends the literature on aging vulnerability to financial resilience and mental health,[10,25] suggesting that whether older people have higher financial resilience levels or not may have little impact on their mental health.

One possible explanation could be that older generations have lower levels of economic-related activity participation and financial resilience, as previous studies show.[36,38] They may not be very active in financial planning, investment, and social networking; the lack of these core components in financial resilience may not manifest the significance of financial coping for well-being during economic difficulties. Furthermore, this could provide an important direction for future research to search for other potential mechanisms between older populations' financial resilience and mental health. It also suggests the possible existence of other socioeconomic pathways between economic adversity and mental health among older families. Second, this nonsignificant result might be due to the specific socioeconomic and cultural context of China. Aligning with the worse performances of financial resilience among older generations, researchers have consistently found that Chinese older adults face serious challenges of financial exclusion and financial fraud victimization, although they have possibly accumulated a relatively large amount of savings and assets.[42] Indeed, the financial market in China is still under development, and it could not be easier for older subgroups to access suitable financial products and avoid financial fraud, such as issues relevant to credit use, digital investment, and private insurance. Under these circumstances, older people may not maximize the benefits of financial coping resources in the face of economic adversity, let alone significantly promote their mental health. Moreover, due to the potential social disengagement in ageing populations, the benefits of personal finance factors may show less salient roles than positive health conditions and social relationships in their later life, particularly in a collectivism-based society like China. The third possible explanation could be the imbalance between age groups, as older generations represented less than 20% of the total sample. This may bias the coefficient estimation between financial resilience and mental health. In this regard, it is recommended that future research treats older generations as a unique target subgroup and replicates our analysis more rigorously.

Rethinking Psychological Mainstreams of Resilience Theories

This study provides theoretical perspectives for research on resilience in stress-coping processes. Several theoretical models have provided explanations of the underlying mechanisms of coping with stressors on health, well-being, and development, such as developmental resilience, resilience in the family stress model, and psychosocial determinants of health.[5,7] These psychological aspects of resilience processes have been the mainstream because they elucidate how people psychologically adjust to stresses and challenges, either on their own or with the support of others.[7] However, history and reality show that individuals and families struggling with adverse conditions also adopt financial coping strategies.[8,9,31] Psychological consolidation and adaptation can empower people to respond to failure with faith, warmth, and support. In contrast, socioeconomic resources, financial capabilities, and financial coping processes are also crucial, straightforward, and strategic in weathering economic turbulences and uncertain emergencies. This study introduced financial resilience, a comprehensive concept in the socioeconomic domain, into resilience systems, stress-coping

mechanisms, and family processes. This concept is promising for future explorations because it is more actionable and modifiable with various specific targets than conventional socioeconomic indicators, thus expanding the mainstream psychological understanding of human adaptation to adversity.[25,28]

Investing Financial Resilience in Stress–Health Practices

This study has practical implications for helping professionals such as social workers, financial counselors, family therapists, and educators. Findings from this study can help inform targeted policies and services for community health promotion, prevention, and intervention, particularly in times of adversity and uncertainty. First, our model suggests that practitioners could invest in financial resilience to help individuals and families weather economic difficulties and improve their financial and mental well-being. Specifically, social welfare service programs on family financial resilience can be designed and delivered to support clients in preparing for their emergency funds and current assets, including their financial access to products and services, enhancing their financial knowledge and behaviors, and building social networks for potential financial support. Some financial well-being programs to help disadvantaged populations become financially resilient could also be a practical direction. In addition, policy changes or advocacy of social welfare can be explored to develop a more mature financial market and improve people's financial inclusion and digital accessibility.

Second, the population applicability of the mediating process relevant to financial resilience implies that the policies and services above should have specific community targets distinguished in terms of sex, age, migrant status, and regional location, particularly those with intersectional social identities and cumulative disadvantages. Special attention should be given to older adults 65 and older. Given the study's surprising findings, how to manifest the power of financial resilience among this population is still unclear. From this perspective, developing age-friendly policies and services to financially empower the health and well-being of older people in the face of economic adversity could be a focus for future practice and research. Moreover, when exploring practical applications of financial resilience, it is also important to consider cultural sensitivity and competence. Social service programs tend to include clients from various social positions and cultural backgrounds, and general dimensions or pathways of financial resilience might not be helpful for every client. Thus, practitioners should pay attention to population heterogeneity and uniqueness when investing the new target into stress-health interventions.

Limitations and Future Research

This study has some limitations and directions for future research to improve. First, our results were obtained from cross-sectional data, and they do not allow for causal inferences between family economic adversity, financial resilience, and mental health outcomes. We adopted the cross-sectional design because the secondary database only provides information about financial resilience, psychological distress, and economic adversity in a single wave. Although our conceptual framework was developed based on theories and studies, more research should be conducted in the longitudinal design to confirm the long-term processes among the included variables in the proposed model. For example, future researchers may explore how the onset of economic adversity and shock influences different patterns of financial resilience, whether these profiles have dynamic changes, and how these diverse trajectories lead to heterogeneous mental health outcomes. Some statistical techniques, such as growth mixture modeling and latent transition analysis, facilitate more longitudinal examinations and discussions on relevant questions and causal inferences.

Second, our study utilized a sample of urban adults from a national database, which might limit the generalizability of our findings to rural contexts. The results regarding the migrant status and residence region have supported the idea that there are rural–urban inequalities in socioeconomic development and human well-being in China's context.[41] This implies that rural populations may be more likely to experience financial vulnerability than their urban counterparts, making their financial coping and resilience processes unique and deserve to be explored.[29,40] Following this, future research is suggested to examine our findings in undeveloped and developing regions, such as rural areas and some low- or middle-income countries. Additionally, apart from rural populations or less developed community residents, other demographic heterogeneities also deserve attention in examining the model's applicability, such as older generations (as our results show) and marginalized populations with intersectional and cumulative adverse experiences. Future

researchers may explore some interesting findings regarding how their initial disadvantaged positions activate financial resilience processes and thus counteractively promote their holistic health and well-being.

Third, it is worth noting that this study utilized a national database in China rather than other cultural and socioeconomic contexts. People from different countries may have diverse financial attitudes and behaviors in the face of economic adversity. Researchers have also discussed that lower financial inclusion development and more cultural influences on saving in the specific context of mainland China may lead to some unexpected effects.[24] In this regard, future research may be cautious in generalizing and replicating our findings and exploring relevant arguments in different cultures and levels of socioeconomic development. By accumulating more contextually applicable evidence, we may develop a better understanding and cross-cultural theoretical perspective of financial resilience processes in response to socioeconomic challenges.

Fourth, the examined model of financial resilience may neglect some potential mechanisms. For example, the limited information from the secondary data analysis prevented us from comparing the different effects of financial and psychological resilience on the stress–health nexus. Future research can collect data to examine how financial resilience differs from conventional resilience factors in protecting people from economic adversity, such as psychological resilience.[28] Particularly, financial resilience may feature diverse related dimensions in financial well-being.[12,24] Future researchers may explore how the financial resilience process takes effect when individuals and families encounter unexpected risks and shocks. This detailed examination of inner mechanisms may facilitate more theoretical development of financial resilience research and provide implications for financial well-being interventions.

Fifth, more factors describing family processes and dynamics could be included because weathering economic adversity is a collective challenge in the family environment. For example, exploring the impact of economic adversity on family interactions and conflicts and how financial resilience operates in these contexts could enrich our understanding of family processes in financial resilience. In this regard, utilizing more comprehensive analytic techniques, such as serial mediation, moderated mediation, and conditional process analysis, could provide further insights for future financial resilience research.

Conclusion

The impact of economic adversity on mental health within family processes has been debated for years. Built on theories of resilience in the stress–health nexus, this study proposed a conceptual framework for explaining the mediating role of financial resilience in family processes between economic adversity and mental health. Using data from the China Family Panel Studies, this study examined the proposed financial resilience processes across different population subgroups. This study originally examines how financial resilience promotes mental health in the face of adversity. Although this study is a cross-sectional study that may not unpack causal effects and be generalized to other contexts, it still has some research contributions and practical implications.

Results show that financial resilience significantly mediated the associations between economic adversity and psychological distress, subjective happiness, and life satisfaction. The mediation model of financial resilience explained a higher proportion of variance in life satisfaction, supporting the future-oriented nature of financial resilience. The nonsignificant pattern of conventional socioeconomic covariates implies that financial resilience might be an alternative comprehensive socioeconomic determinant of mental health, particularly in the face of adverse situations. The significant association of subjective family socioeconomic status and financial resilience with mental health highlights that novel attempts at theorization and examination of socioeconomic determinants should consider actionable targets and subjective meanings on the traditional basis of objective and structural barriers.

Population heterogeneity analysis results show that specific subgroups and contexts should be noted in elucidating and facilitating financial resilience in the family economic stress processes. For example, older populations might be unique due to their characteristics in wealth accumulation, financial exclusion, and social vulnerability. Specific Chinese cultural contexts intersecting with population heterogeneity should be paid attention, given that the cultural atmosphere favoring financial planning, saving, coping, and networking might face challenges in the macro background of socioeconomic transition and infrastructure underdevelopment. Additionally, the above discussions and interpretations should be cautious due to the limitations that empirical evidence from this study is cross-sectional and contextually specific.

Thus, more future research and generalization work is suggested to go deeper inside the black box of financial resilience in family processes of adverse situations.

By introducing a novel socioeconomic concept of financial resilience to traditional theories of resilience in stress coping and socioeconomic determinants of mental health, this study sheds light on practical targets for promoting family well-being, socioeconomic empowerment, and mental health among diverse populations. Specific evidence-based interventions in socioeconomic policies and services may emphasize investing in comprehensive financial resilience cultivation, such as empowering financial coping capability and asset building for emergencies, enhancing financial education by integrating knowledge and behavior facets, promoting financial inclusion for general and minority populations, and constructing widespread social networks among financial service providers and consumers. These positive coping strategies may serve as external driving forces to break the cycle of economic adversity within family processes and systems, thus contributing to human well-being, holistic health, and sustainable development.

Abbreviations

FR, financial resilience; EA, economic adversity; PD, psychological distress; SSES, subjective family socioeconomic status; LS, life satisfaction. B, unstandardized coefficients; β, standardized coefficients; SE, standard error; p, significance p values; CI, 95% bias-corrected confidence interval, generated from 5000 times bootstrapping analysis.

Data Sharing Statement

This study uses data from the China Family Panel Studies. This data is publicly available on the website: https://www.isss.pku.edu.cn/cfps/.

Ethics Approval Statement

We conducted this study using the CFPS database. During the research process, our study did not cause harm to human subjects, did not involve sensitive personal information or commercial interests, and utilized publicly available and anonymized data. The CFPS database has been approved by the Peking University Biomedical Institutional Review Board (No. IRB00001052-14010), and all participants provided written informed consent. Article 32, Items 1 and 2 of the "Ethical Review Measures for Life Science and Medical Research Involving Human Subjects" have been issued on February 18, 2023, in China:

1. Item 1: Research involving human subjects that only uses de-identified data from public databases and does not involve direct information related to individuals may generally be exempt from ethical review.
2. Item 2: If the research data comes from a project that has obtained informed consent and the use of the data conforms to the scope of the original informed consent, it may also be considered exempt from ethical review.

According to the Items, this study meets the above criteria and can be exempt from further ethical review.

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Disclosure

The authors report no conflicts of interest in this work.

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