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## How Does Family Financial Stress Impair Employees' Mental Health? Spillover Effect of Stress from Home to Workplace

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**ABSTRACT: Objectives:** Recently, how family-related factors influence employees' mental health has garnered increasing attention from researchers and practitioners. Drawing on the cognitive appraisal theory of stress, this study aims to examine how and when family financial stress affects the employees' mental health and investigate the mediating role of performance stress and the moderating role of workplace competition. **Methods:** A cross-sectional survey was conducted with 23,520 Chinese employees by using a voluntary and anonymous structured questionnaire, which included family financial stress, performance stress, symptom checklist 90 (SCL-90) scale, and workplace competition. The data were analyzed using SPSS 26.0 software and macro PROCESS. **Results:** The analysis of the mediating effect showed that performance stress mediated the relationship between family financial stress and psychological depression ( $b = 0.064$ ,  $SE = 0.002$ ,  $p < 0.0001$ ) and physical somatization ( $b = 0.042$ ,  $SE = 0.002$ ,  $p < 0.0001$ ), indicating spillover effects of stress from home to workplace. The moderating mediation analysis revealed that the crossover effects were amplified by workplace competition. For psychological depression, index of moderated mediation was:  $b = 0.012$ ,  $SE = 0.001$ ,  $p < 0.001$ ; For physical somatization, index of moderated mediation was:  $b = 0.008$ ,  $SE = 0.001$ ,  $p < 0.001$ . **Conclusion:** Performance stress acts as a mediator in the link between family financial stress and mental health. Furthermore, the mediating effects was amplified by workplace competition. These findings suggest that workplace competition may serve to exacerbate the negative spillover effects from home to work through the mechanism of work-related stress. Organizations should consider implementing supportive measures to mitigate family financial stress, such as providing financial counseling and fostering a collaborative work environment, to reduce the adverse effects of family financial stress on employees' mental health.

**KEYWORDS:** Family financial stress; performance stress; psychological depression; physical somatization; workplace competition

### 1 Introduction

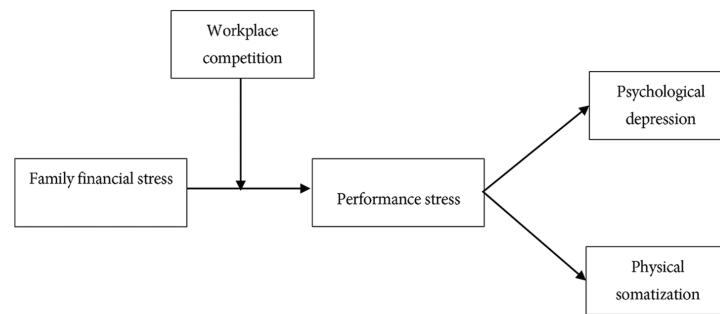
Money, work, and life are inextricably linked [1]. The prevalent perception of “working for money” implies that remuneration provides financial support for sustenance and enhances the quality of life. Money largely determines an individual's socioeconomic status, which has been established as a reliable predictor of



disparities in health outcomes [2,3]. A lack of sufficient material resources can cause stress and anxiety about paying daily expenses and meeting the living needs of individuals and families. Income, a pivotal determinant of well-being [4], serves as a cornerstone for psychological security and social support. Therefore, financial pressure often drives individuals to seek employment or improve their earning capacity while simultaneously contributing to mental health challenges [5].

Recent findings from the “2023 Survey on the Emotional State of Workers” by MileagePlus, a prominent human resources service provider in China, revealed that 56% of employees reported elevated emotional stress in comparison to 2022 [6]. This surge predominantly originates from five pivotal stressors: job insecurity, financial instability, debt burdens, health concerns, and the cost of children’s education, all deeply intertwined with family finances. This may be because family roles (spouse, parent, offspring) are the most important non-work roles, providing financial resources and emotional support, shaping our interactions with our surroundings [7,8]. The burden of mortgages, car loans, and parenting responsibilities exacerbates stress, highlighting the need for financial solutions. Therefore, strained family finances emerge as the primary money-related stressor, consistently impacting employees’ work-related stress experiences and mental health [9–11], which is widely defined as “a state of well-being that allows individuals to cope with the normal stresses of life and function productively” [12] (p. 34). Although prior longitudinal studies indicated that mental health is dynamic and that there is heterogeneity between different groups [13–15], prior research has consistently illustrated that money-related stress from family has detrimental effects on employees’ mental health at workplace [16,17]. The available evidence does indicate that family financial stress is associated with employees’ mental health at workplace, however, more research is needed to examine the underlying processes of this relationship [9,17].

The main purpose of this study is to determine how and when family financial stress contributes to employees’ mental health indicated by psychological depression and physical somatization. The cognitive appraisal theory of stress elucidates a subjective process involving cognitive appraisal and coping responses, emphasizing the intervening role of the cognitive process in the relationship between stressors, employee emotions, and behavioral responses [18,19]. Accordingly, family financial stress is posited as a critical stressor, engendering performance stress tied to the quest for enhanced economic resources, thereby harming employees’ mental health. Furthermore, the prevalent “sandwich generation” phenomenon, where working adults grapple with heightened familial and professional demands, volatile work environments, and uncertain career trajectories, compounds emotional strain. In this intensified competition, the perception of workplace rivalry may act as a boundary-enhancing mechanism, necessitating further examination to understand its implications for employee well-being and performance dynamics. Based on this, we hypothesize: (1) Family financial stress is positively associated with mental health indicated by psychological depression and physical somatization (Hypothesis 1); (2) Performance stress mediates these relationships (Hypothesis 2); (3) Workplace competition amplifies the mediation effect of performance stress (Hypothesis 3). The overall research model is presented in Fig. 1.



**Figure 1:** The research model

## 2 Method

### 2.1 Participants

After dropping problematic cases (i.e., having a large amount of missing data and irregular responses), the final sample consisted of 23,520 Chinese employees who were full-time working professionals from various industries. There were 52.77% female and 47.23% male respondents, and the mean age was 35.13 years (SD = 6.38, age range: 20–63 years), and the sample average for work experience was 4.91 years (SD = 2.35, work experience range: 1–14 years). Most of the respondents were married (67.48%), 31.66% were unmarried and 0.86% were divorced or widowed. Regarding education level, 1.12% held an associate's degree or below, 90.67% held a bachelor's degree, and 8.21% held a master's degree or above.

### 2.2 Procedures

This study employed a cross-sectional design. We gathered participants from corporations located in Southern China. The HR director helped us reach out to staff through intra-company emails, inviting them to join our survey. The email explained the study's objectives and guaranteed confidentiality and anonymity for respondents. Employees interested in taking part could respond via email. Following Podsakoff et al., we used different scale endpoints and formats for the predictor (i.e., family financial stress, performance stress, and workplace competition) and criterion (i.e., mental health) measures. This practice reduces common method bias caused by commonalities in scale endpoints and anchoring effects [20].

The studies involving humans were approved by the Committee for Scientific Research and Academic Ethics of Central China Normal University (Approval Number: CCNU-2022025). All participants signed the informed consent in this study. All procedures in this study were in accordance with the institutional research guidelines, the 1964 Helsinki Declaration, and its later amendments or comparable ethical standards.

### 2.3 Measures

#### 2.3.1 Family Financial Stress

Stress problems possibly bring or exacerbate negative emotions in participants, it's better to shorten the time they spend on it [21,22]. In addition, perceptions of stress are a concrete concept explicitly understood by employees. Consequently, this study adopted a single-item measurement approach to directly elicit participants' self-reported levels of stress. Family financial stress was measured by the item ("I feel stressed because of their family's financial constraints") adapted from Shek's cognitive evaluation of perceived economic stress [5]. Participants were asked to indicate the extent to which they agreed, based on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree).

### Performance Stress

Performance stress was assessed with “At work, I feel stressful to improve my job performance” adapted from Eisenberger and Aselage’s performance pressure scale [23]. Participants were asked to indicate the extent to which they agreed, based on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree).

#### 2.3.2 Mental Health

This study used psychological depression and physical somatization to reflect employees’ mental health. Thus, mental health was assessed by two subscales of Derogatis et al.’s symptom checklist 90 (SCL-90) scale based on a 5-point scale (1 = none at all, 5 = extremely) [24]. The depression subscale was assessed with thirteen items, with sample items including “I have the feeling that I’m over-worried” ( $\alpha = 0.92$ ). The somatization subscale was assessed with twelve items, sample items include “I feel like I have a headache” ( $\alpha = 0.93$ ).

#### 2.3.3 Workplace Competition

With narrow and unambiguous content, workplace competition focuses on an individual’s subjective perception of their current job at a general level. Therefore, a one-item measure was appropriate in such a context, imposing less cognitive demand, and rendering it reliable and effective [22,25]. Workplace competition was assessed with “I often think about not falling behind in my current position” on a 5-point Likert-type scale (1 = strongly disagree, 5 = strongly agree).

#### 2.3.4 Control Variables

Following the recommendations of previous studies, we controlled for five demographic variables: gender, age, marital status, education, and work tenure [26,27].

### 2.4 Data Analysis

In this study, we used a variety of statistical methods to analyze the data. First, we used SPSS 26.0 software for data sorting and descriptive statistics. Second, we utilized Mplus 8.0 to perform confirmatory factor analysis to test discriminant validity among the core constructs in the study. Third, we used regression analysis to test the main effect of family financial pressure on mental health. Fourth, we used marco PROCESS (Model 4) developed by Hayes [28] to test the mediating role of performance stress in the relationship between family financial pressure and mental health. Fifth, we used marco PROCESS (Model 7) developed by Hayes [28] to test the moderating role of workplace competition. We set the significance level at 0.05 to evaluate the significance of each statistical test. All statistical methods were selected based on their applicability in this study, and the reliability of the results is ensured.

## 3 Results

### 3.1 Preliminary Analyses

Harman’s single-factor analysis was conducted using MPLUS 8.3 to test potential common method variance. The study revealed that a one-factor model was poorly fitted ( $\chi^2 = 95,160.32$ ,  $df = 350$ , Comparative Fit Index = 0.76, Tucker-Lewis Index = 0.74, Root Mean-square Error of Approximation = 0.107, Standardized Root Mean Square Residual = 0.07), indicating no serious common method bias in this study [20].

### 3.2 Descriptive Statistics and Correlations

The means, standard deviations, and intercorrelations among study variables are shown in Table 1. As expected, family financial stress was positively related to psychological depression ( $r = 0.33, p < 0.0001$ ), physical somatization ( $r = 0.26, p < 0.0001$ ), and performance stress ( $r = 0.45, p < 0.0001$ ). Therefore, Hypothesis 1 was preliminarily supported. Performance stress was positively related to psychological depression ( $r = 0.36, p < 0.0001$ ) and physical somatization ( $r = 0.26, p < 0.0001$ ). These findings also offer initial support for the establishment of the mediation effect of performance stress in Hypothesis 2.

**Table 1:** Means (M), standard deviation (SD), and intercorrelations among research variables

| Variables                   | 1         | 2         | 3        | 4         | 5         | 6        | 7        | 8        | 9        | 10   |
|-----------------------------|-----------|-----------|----------|-----------|-----------|----------|----------|----------|----------|------|
| 1. Gender                   | —         |           |          |           |           |          |          |          |          |      |
| 2. Age                      | -0.02*    | —         |          |           |           |          |          |          |          |      |
| 3. Marriage                 | 0.06****  | 0.48****  | —        |           |           |          |          |          |          |      |
| 4. Education                | -0.07**** | -0.04***  | -0.01    | —         |           |          |          |          |          |      |
| 5. Tenure                   | -0.20**** | 0.39****  | 0.15**** | 0.36****  | —         |          |          |          |          |      |
| 6. Family financial stress  | -0.10**** | -0.09**** | -0.01    | -0.07**** | -0.19**** | —        |          |          |          |      |
| 7. Performance Stress       | 0.05****  | -0.09**** | -0.01*   | -0.03**** | -0.12**** | 0.45**** | —        |          |          |      |
| 8. Psychological depression | 0.05****  | 0.01      | 0.00     | -0.05**** | -0.07**** | 0.33**** | 0.36**** | —        |          |      |
| 9. Physical somatization    | 0.07****  | 0.08****  | 0.06**** | -0.07**** | -0.06**** | 0.26**** | 0.26**** | 0.71**** | —        |      |
| 10. Workplace competition   | 0.09****  | -0.05**** | 0.00     | -0.04**** | -0.09**** | 0.37**** | 0.62**** | 0.38**** | 0.29**** | —    |
| M                           | 1.53      | 35.13     | 1.69     | 2.07      | 4.91      | 3.01     | 3.28     | 1.65     | 1.48     | 2.87 |
| SD                          | 0.50      | 6.38      | 0.48     | 0.30      | 2.35      | 1.24     | 1.12     | 0.66     | 0.63     | 1.12 |

Note: N = 23,520; Means and standard deviations of all variables are based on uncentered scores, \* $p < 0.05$ , \*\*\* $p < 0.001$ , \*\*\*\* $p < 0.0001$  (two-tailed).

### 3.3 Hypothesis Testing

Hypothesis 1 stated that family financial stress is positively related to psychological depression and physical somatization. Hierarchical regression analyses were employed, and variables were consistently entered in blocks in the following order: gender, age, marriage, education, tenure on the first step, and family financial stress on the second step. As shown in Model 2 and Model 4 in Table 2, the positive relationships between family financial stress and psychological depression ( $b = 0.181, SE = 0.003, p < 0.0001$ ) and physical somatization ( $b = 0.137, SE = 0.003, p < 0.0001$ ) were significant. Thus, Hypothesis 1 was supported.

**Table 2:** Regression results for models predicting depression and somatization

| Variables               | Dependent variables      |                    |                       |                    |
|-------------------------|--------------------------|--------------------|-----------------------|--------------------|
|                         | Psychological depression |                    | Physical somatization |                    |
|                         | M1                       | M2                 | M3                    | M4                 |
| <i>Controls</i>         |                          |                    |                       |                    |
| Gender                  | 0.042**** (0.009)        | 0.106**** (0.008)  | 0.070**** (0.008)     | 0.118**** (0.008)  |
| Age                     | 0.004 (0.001)            | 0.006**** (0.001)  | 0.010**** (0.001)     | 0.011**** (0.001)  |
| Marriage                | -0.011 (0.010)           | -0.031**** (0.010) | 0.020* (0.010)        | 0.004 (0.009)      |
| Education               | -0.035* (0.016)          | -0.028 (0.015)     | -0.072**** (0.015)    | -0.067**** (0.014) |
| Tenure                  | -0.020**** (0.002)       | 0.000 (0.003)      | -0.021**** (0.002)    | -0.006**** (0.003) |
| <i>Predictor</i>        |                          |                    |                       |                    |
| Family financial stress |                          | 0.181**** (0.003)  |                       | 0.137**** (0.003)  |
| R2                      | 0.007****                | 0.114****          | 0.021****             | 0.090****          |
| ΔR2                     |                          | 0.107***           |                       | 0.070****          |

Note: N = 23,520. Unstandardized regression coefficients are reported. Standard errors are in parentheses. \* $p < 0.05$ , \*\*\* $p < 0.001$ , \*\*\*\* $p < 0.0001$ .

Hypothesis 2 posited that performance stress mediates the positive relationship between family financial stress and mental health (depression and somatization). The PROCESS (Model 4) program was utilized to conduct the test, setting the Bootstrap random sampling to 5000 times. Results in Table 3 showed that the mediating effect of performance stress between family financial stress and psychological depression was significant ( $b = 0.064$ ,  $SE = 0.002$ ,  $95\% CI = [0.060, 0.067]$ ) after controlling for demographics. Also, results in Table 2 showed that the mediating effect of performance stress between family financial stress and physical somatization was significant ( $b = 0.042$ ,  $SE = 0.002$ ,  $95\% CI = [0.039, 0.045]$ ) after controlling for demographics. Therefore, Hypothesis 2 was supported.

**Table 3:** The results of the mediating effects of performance stress

| Path                         | Effect size | 95% CI    |           |
|------------------------------|-------------|-----------|-----------|
|                              |             | Boot LLCI | Boot ULCI |
| Direct effect: X-Y1          | 0.118       | 0.110     | 0.125     |
| Indirect effect 1:<br>X-W-Y1 | 0.064       | 0.060     | 0.067     |
| Direct effect: X-Y2          | 0.095       | 0.088     | 0.102     |
| Indirect effect 2:<br>X-W-Y2 | 0.042       | 0.039     | 0.045     |

Note:  $N = 23,520$ , X = Family financial stress, W = Performance Stress, Y1 = Psychological depression, Y2 = Physical somatization.

Hypothesis 3 proposed that workplace competition moderates the positive relationship between family financial stress and mental health via performance stress. The PROCESS (Model 7) program was utilized to conduct the test while controlling for demographical variables, setting the Bootstrap random sampling to 5000 times. As shown in Table 4 below, the moderated mediation effect was significant when workplace competition was high ( $+SD = 1.16$ ,  $b = 0.048$ ,  $SE = 0.002$ ,  $95\% CI = [0.044, 0.051]$ ) and  $+SD = 1.16$ ,  $b = 0.031$ ,  $SE = 0.013$ ,  $95\% CI = [0.029, 0.034]$ ). Consistently, the moderated mediation effect was significant when workplace competition was low ( $-SD = -1.16$ ,  $b = 0.021$ ,  $SE = 0.001$ ,  $95\% CI = [0.019, 0.023]$ ) and  $-SD = -1.16$ ,  $b = 0.014$ ,  $SE = 0.001$ ,  $95\% CI = [0.012, 0.015]$ ). Thus, Hypothesis 3 was supported.

**Table 4:** Results of moderated mediating effect test

| Dependent variables      | Workplace competition | Effect size | 95% CI    |           |
|--------------------------|-----------------------|-------------|-----------|-----------|
|                          |                       |             | Boot LLCI | Boot ULCI |
| Psychological depression | High (M + 1SD)        | 0.048       | 0.044     | 0.051     |
|                          | Middle (M)            | 0.034       | 0.032     | 0.036     |
|                          | Low (M - 1SD)         | 0.021       | 0.019     | 0.023     |
| Physical somatization    | High (M + 1SD)        | 0.031       | 0.029     | 0.034     |
|                          | Middle (M)            | 0.023       | 0.021     | 0.025     |
|                          | Low (M - 1SD)         | 0.014       | 0.012     | 0.015     |

#### 4 Discussion

The main aim of this study was to investigate how and when family financial stress undermines employees' mental health. Analyses of a large sample dataset showed that financial stress from home has

a spillover effect on employees, which, in turn, impairs their mental health indicated by psychological depression and physical somatization. The moderated mediation analysis further found that this spillover effect was more likely to occur when workplace was perceived as highly competitive. These findings suggest a variety of theoretical and practical implications.

#### **4.1 Implications for Researchers**

Our study employs the cognitive appraisal theory of stress to elucidate the deleterious effects of financial concerns and their interrelationship with occupational and health outcomes. By discussing the intermediate mechanisms of action of family financial stress on the positive effects of employees' mental health from the perspective of cognitive appraisal of stress, the present study responds to the call for research in occupational health psychology. On the other hand, this study enriches research related to the spillover effects of family financial pressure on workplace experiences by focusing on the underlying links between job stressors and mental health [29]. In addition, we also introduced the current widely debated perception of workplace competition as a boundary mechanism, catalyzing family economic stress on employee depression. We found that high perceived workplace competition exacerbates the negative utility of family economics on performance stress and employee health, playing an important role in exacerbating employees' work stress and psychological well-being, which provides a basis for understanding how to attenuate the negative effects of stress on individuals.

#### **4.2 Practical Implications**

Furthermore, this study also provides practical implications. To begin with, our findings showed that family financial stress was negatively related to the mental health of employees. These findings suggest that organizations should implement supportive measures to alleviate the financial pressures faced by their employees. Specifically, the organizations can set up an employee assistance plan to provide financial advice to employees to help them manage their family finances reasonably. At the same time, managers can also cooperate with financial institutions to provide employees with interest-rate reduction loans to help employees cope with sudden family financial crises.

The negative impact of job performance stress suggests that organizations need to take proactive steps to mitigate these effects on their employees' mental health. Managers should optimize the performance evaluation system to avoid setting too high-performance standards. Challenging and achievable performance goals are demonstrated to help employees maintain motivation and reduce stress [30]. In addition, managers can also adopt positive performance feedback and communication mechanisms. Positive and constructive recommendations are better than negative or rude words, as they foster a culture of continuous improvement and support [31].

In addition, our research also provides practical implications for how to support employee mental health in competitive environments. The findings showed that workplace competition intensifies the influence of family financial stress on employees' mental health. In order to maintain the mental health of employees in the competition, enterprises should advocate a healthy and positive competitive atmosphere. Specifically, organizations can cultivate a cooperative rather than a competitive working environment. By promoting teamwork and collaboration, organizations can help employees feel supported and reduce the pressure associated with intense competition. At the same time, organizations can regularly carry out team-building activities to build a harmonious working relationship and reduce the tension caused by internal competition. By creating a supportive and inclusive work culture, organizations can help alleviate the pressures of competition and ensure that employees feel valued and supported.



Finally, managers can use AI techniques (e.g., digital phenotyping, virtual agents, and individualized online intervention) to improve the mental health of employees with high family financial or performance stress. With the advent of personalized and digital approaches to mental healthcare, artificial intelligence (AI) is being used in the development of prediction, detection, and treatment solutions for mental health [32,33]. For example, AI-powered chatbots can engage users in text-based dialogues, delivering real-time assistance and coping mechanisms [34]. Managers can integrate these chatbots into the workplace to provide immediate support to employees experiencing stress or mental health issues.

#### **4.3 Limitations and Future Research Directions**

Despite the theoretical and practical implications discussed above, this study has several limitations that suggest avenues for further research. First, the data utilized in this study were cross-sectional, with the variables collected at a single point time. This has implications for the strength of causal arguments and the potential for common methodological biases to influence the results. Consequently, future research should adopt a longitudinal design or field experiment to enhance the causality argument. Second, the mechanisms by which family financial stress affects employees' occupational mental health in addition to performance stress remain to be explored. For example, factors such as interpersonal stress in the workplace and the sense of productivity may be relevant. Bailey et al. discovered that financial stress impacts employee satisfaction by influencing relationships with colleagues and superiors [35]. Third, the study mainly focuses on two aspects of mental health—psychological depression and physical somatization—without covering other possible aspects of mental health that could be affected. In fact, mental health conditions involve many aspects such as obsessive-compulsive tendencies, hostility, and phobic anxiety [24]. To address this limitation, future research is needed to examine the effects of family financial stress on these other types of mental health challenges. Finally, we only recruited our sample from Chinese employees, which may reduce the generalizability of the results. Thus, further research is needed to determine whether our findings can be replicated in other cultural contexts.

#### **5 Conclusion**

With a large sample of Chinese employees, this study finds that performance stress acts as a mediator for the link between family financial stress and mental health indicated by psychological depression and physical somatization. These mediating effects were strengthened by workplace competition. The findings support research on spillovers of stress, which suggests that employees' stress from home has generated a negative impact on their well-being and performance at workplace through the transmission of stress from home to work. Furthermore, the spillover mechanism is amplified by the perception of workplace competition. Our findings suggest the importance of family-support employment practices.

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**Availability of Data and Materials:** The data that support the findings of this study are available from the corresponding author upon reasonable request.



**Ethics Approval:** The studies involving humans were approved by the Committee for Scientific Research and Academic Ethics of Central China Normal University (Approval Number: CCNU-2022025). All participants signed the informed consent in this study.

**Conflicts of Interest:** The authors declare no conflicts of interest to report regarding the present study.

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