

The impact of organizational justice on psychological distress among Chinese public hospitals nurses

A cross-sectional study

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Abstract

Few studies have explored the association between organizational justice and mental health, particularly in collectivist countries. Hence, the aim of the present study was to evaluate the impact of organizational justice on psychological distress and to discuss the findings in collectivist culture. A cross-sectional survey was conducted among nurses from public hospitals in western of China, July 2022, which followed the STROBE guidelines. This study used Chinese versions of the Organizational Justice Scale and Kessler Psychological Distress Scale to assess the perceptions of organizational justice and mental health levels, respectively. A total of 663 nurses completed the questionnaires. The psychological distress of university-educated and low-income nurses was poor. There was a moderately positive relationship between organizational justice and psychological distress ($R = 0.508$, $P < .01$), indicating that the greater level of organizational injustice, the poorer mental health. Hierarchical regression analysis showed that organizational justice was a strong predictor of psychological distress, accounting for approximately 20.5% of the psychological distress. The findings of this study highlight the importance of interpersonal injustice and distributive injustice on psychological distress specific in Chinese culture, suggesting that nursing management or leaders should notice that the most being taken seriously by nurses is their recognition and respect for subordinate, meanwhile, alerting nurses, in some sense, a negative relationship with leaders as a kind of workplace bullying could harm their mental health. The promulgation of organizational justice policy to protect employees from the government and the real role of employee labor union organizations are urgently needed.

Abbreviation: COVID-19 = corona virus disease 2019.

Keywords: equality and justice, nursing management, occupational health, organizational justice

1. Introduction

Psychological distress is defined as the unique discomforting, emotional state experienced by an individual in response to a specific stressor or demand that results in harm, either temporary or permanent, to the person.^[1] Workplace psychological distress significantly affects employees' mental and physical well-being.^[2] Psychological distress is detrimental to nurses' health and is even worse in developing countries,^[3,4] especially during the corona virus disease 2019 (COVID-19) pandemic.^[5,6] Multiple factors are associated with psychological distress among nurses, such as workload stressors, fear of COVID-19, low job satisfaction, exposure to bullying, and

sleep disturbance.^[7-11] But few studies have examined the relationship between organizational justice and psychological distress in nurses.

Organizational justice refers to employees' perceptions of equality, how they are treated by management and the organization, and the quality of social interactions in the workplace. According to Greenberg,^[12] organizational justice is an umbrella term that encompasses 4 dimensions: procedural justice (fairness of decision-making procedures), distributive justice (fairness of outcomes), interpersonal justice (equality and fairness in the interpersonal treatment of employees by their supervisors), and informational justice (correctness and completeness of information received in the workplace).

This study was supported by Nursing Discipline Construction Project of Shanxi University of Chinese Medicine (grant number 2021-4) and the Elderly Chronic Disease Nursing Innovation Team of Integrated Chinese and Western Medicine of Shanxi University of Chinese Medicine (grant number 2022TD2013).

Informed consent was obtained from all subjects involved in the study.

The authors have no conflicts of interest to disclose.

The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

The Ethics Committee of Shanxi University of Chinese Medicine (no. 2022LL057).

Supplemental Digital Content is available for this article.

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How to cite this article: Sun J, Yang Z, Zhu T, Jiang Z, Zheng X, Li C, Cao X. The impact of organizational justice on psychological distress among Chinese public hospitals nurses: A cross-sectional study. Medicine 2023;102:17(e33684).

Received: 22 February 2023 / Received in final form: 4 April 2023 / Accepted: 13 April 2023

<http://dx.doi.org/10.1097/MD.00000000000033684>

Research has shown that perceptions of positive or negative organizational justice lead to positive or negative outcomes respectively.^[13–15] Some studies noted that nurses perceived effort–reward imbalance in low-income or middle-income countries,^[16–18] feelings of underpayment inequity lead to negative work-related outcomes.^[19] In addition, perceived low organizational justice was associated with poorer mental health, both directly and indirectly through job strain, cause perceptions of inequity lead to tension and may lead to stress or psychological ill-health.^[20] A longitudinal study demonstrated that distributive justice and procedural justice contributed to lower depressive symptoms^[21]; low interpersonal justice was associated with poor self-rated health, minor psychiatric disorders and burnout^[22,23]; informational justice refers to providing knowledge about procedures that demonstrate regards for people's concerns, lacking of necessary information can be a stressor of losing a sense of control in workplace made the employee feel insecure.^[20,24]

But currently few studies have well revealed or investigated the relationship between organizational justice and psychological distress among nurses. For the reasons discussed above, it is meaningful and necessary to conduct research in this field, especially in developing countries such as China. Furthermore, factors associated with psychological distress were investigated across cultures.^[25] In Chinese collectivist culture, work's principal is organized first, which is shamed of the intolerableness for backbreaking jobs. Although nurses take organizational justice seriously in their minds, they do not fight for personal gain, and finally, they pay for mental health lost for organizational compatibility unconsciously.

To the best of our knowledge, no study has discussed the relationship between organizational justice and psychological distress among nurses in China, and the aim of this study was to determine whether organizational justice is associated with psychological distress among Chinese nurses, which may help policymakers and nursing managers implement effective interventions to relieve nurses' psychological distress. Based on cultural and institutional differences, combined with previous studies in the literature, this study proposes the following hypotheses: the income variable is positively correlated with psychological distress. Organizational justice is positively related to psychological distress and may significantly predict it.

2. Materials and methods

2.1. Study design and selected participants and data collection

The present study was a cross-sectional design, convenience sampling method was used in this research. The survey was conducted in Taiyuan city of Shanxi Province, which is one of the most underdeveloped provinces located in Western of China, July 2022.

The sample size was calculated using the G*power 3.1 software, based on a significance level of 0.05, effect size of 0.15, statistical power of 0.95 and 9 predictor variables, the sample size was calculated to be 166. The study population comprised 208 participants, accounting for approximately 20% of dropouts, we conveniently selected nurses from 3 affiliated hospitals of our university, all of whom were voluntary and not limited to inclusion in the study in order to ensure that the participants could be obtained. We conducted an off-line survey, before the survey, researchers explained to the participants the purpose of the research and the specific requirements of completing the questionnaire, such as option types and the instructions for the scales, we specific to explain that this survey was only purposes for study in order to eliminate their worries about the negative impact on their job for the items of organization justice. Respondents were advised to complete the scale after reviewing the participant's information sheet and providing written informed consent. Ethical approval was granted by the Ethics Committee of Shanxi University of Chinese Medicine (no. 2022LL057).

All the participants completed the scale during the break and were unanimous. A total of 700 scales were given, of which 16 were considered invalid because of missing data. A total of 684 valid scales were collected in this study, with a response rate of 97.71%.

We had 2 reseachers collect the scale and then put the 684 valid scales data into SPSS 25.0 statistical software (IBM Corp, Armonk, NY), after that, the data were cleaned up, the scale which the item's response was the same for 10 consecutive items was removed. After the clean-up, 663 scales were included in the database to be ready for further analysis.

2.2. Measures

2.2.1. General characteristics variables General characteristics included gender, age, education, career years, marital status, employment type, and income level. Age was calculated from the date of birth of the participants. Education level was calculated based on whether the participants had completed university education. Career years were calculated from a list in which participants were asked to select their years of work experience as nurse. Participants with live-in partners or married again were categorized into married; separated, widowed and divorced were categorized into others of marital status. Employment type was calculated based on whether the participants were employed by government-affiliated public hospitals, permanent nurses referred to participants who got a permanent job and got a better retirement plans, otherwise were calculated as contract nurses. Income level was calculated based on the participants' self-perceived income level compared to the average income of all local people.

2.2.2. Chinese Organizational Justice scale Organizational justice was measured using Chinese Organizational Justice Scale^[26] which was developed based on the Chinese context (see Supplemental Digital Content, <http://links.lww.com/MD/1915> scales-Organizational Justice, which illustrates the content of the scale); the structure of the scale was mostly the same as the organizational justice scale developed by Colquitt,^[27] it was composed of 4 dimensions: procedural justice, distributive justice, interpersonal justice and informational justice. In the Chinese organizational justice scale, procedural justice was defined as the perception of the justice of decision-making processes, it was one of the key determinants of individuals' perceptions of the authority's legitimacy and their willingness to comply with the rules and decisions of the collective. Distributive justice was defined as perceptions of the justice of decision outcomes, it was fostered where outcomes are consistent with implicit norms for allocation, such as equity or equality; interpersonal justice was defined as the interpersonal treatment people receive as procedures were enacted, it was fostered when decision-makers treat people with respect and sensitivity and explain the rationale for decisions thoroughly; Informational justice was defined as perceptions of the justice of explanation of the decision outcomes and process of decision outcomes, indicates whether the leader is concerned with the employee.^[26] The Chinese Organizational Justice Scale consists of 22 items, each of items is scored between 1 and 5, 1 indicates "strongly agree" and 5 indicates "strongly disagree." Completion of the tool resulted in a total score between 22 and 110. A higher score indicates a lower level of organizational justice and the perceived unfairness of the organization increases. The Cronbach's α value, which indicates the internal consistency of the tool, was 0.946 in a previous study^[26] and 0.952 in this study.

2.2.3. Kessler10 (The 10-item Kessler psychological distress scale) The Kessler 10 measured the nurses' psychological distress levels. This study adopted the Chinese version of the 10-item Kessler psychological distress scale revised by Zhou et al.^[28] (see Supplemental Digital Content, <http://links.lww.com/MD/1915> scales-Psychological Distress, which illustrates the

content of the scale). 10-items were used to measure mental health and well-being, which used a 5-value response option for each question—all of the time, most of the time, some of the time, a little of the time, and none of the time—that were scored from 5 to 1. Thus, the maximum score is 50, indicating severe distress; the minimum score is 10, indicating no distress.^[29] The scale has demonstrated acceptable internal reliability with a Cronbach's α of 0.801 in previous research^[28] and a good internal reliability with Cronbach's α of 0.933 in this study.

2.3. Data analysis

Data were analyzed using SPSS 25.0 statistical software (IBM Corp, Armonk, IL), with statistical significance set at 0.05 level.

Analyses began with general characteristics of participants' descriptive statistics, including their gender, age, education, career years, marital status, employment type, and self-perceived income level, compared to the average income of all local people. The general character categorical description was reported by n (%), psychological distress level among categories was reported by mean \pm standard deviation, and multiple group comparisons were calculated using an independent-samples T test or 1-way ANOVA test.

The significance of the relationship between the categories of key general characteristics, organizational justice and psychological distress of nurses was calculated using Pearson correlation analysis and Spearman correlation analysis.

A hierarchical multiple regression analysis was run with psychological distress as the dependent variable, demographic variables as controlled variables, to test organizational justice as a predictor contributing to the psychological distress scores.

3. Results

3.1. Psychological distress according to the general characteristics of nurses

Table 1 showed the general characteristics of 663 nurses. The majority were female (98.9%); age under 40 years old (72.4%); with education level \leq college (72.5%); married

(71.2%); permanent contract (75.1%); income below medium (73.7%). Psychological distress level differences according to the general characteristics of the nurses was shown in Table 1. Psychological distress was higher among participants aged less than 40 years old ($P < .05$), or educational level of university ($P < .001$). Moreover, participants with lower income showed higher levels of psychological distress ($P < .001$). There was no significant differences in psychological distress based on gender, career year, marital status, or type of employment ($P > .05$).

3.2. Descriptive statistics and correlation matrix among key general characteristics, organizational justice, psychological distress of nurses

Table 2 showed descriptive statistics related to organizational justice and psychological distress among nurses. The average scores of organizational justice displayed in this study was (2.87 ± 0.80) points (medium score was 3 points); score over 25 points was supposed to be unhealthy of mind in psychological distress,^[29] the average points of psychological distress in this study were (23.14 ± 8.09) points.

Correlations among nurses' key general characteristics (significant differences for psychological distress in Table 1 above), organizational justice, and psychological distress were shown in Table 2. Educational level was slightly correlated with organizational justice ($R = 0.081$, $P < .05$) but was not correlated with psychological distress. Income had a weak positive correlation both with organizational justice ($R = 0.338$, $P < .01$) and psychological distress ($R = 0.229$, $P < .01$). Organizational justice had a moderate positive correlation with psychological distress ($R = 0.508$, $P < .01$).

3.3. Multiple regression analyses: impact of organizational justice on psychological distress

Hierarchical regression analysis was conducted to identify the factors that influenced psychological distress. The predictive variables were entered in 2 successive steps. In the first step, education level and income variables which were positively

Table 1
Psychological distress according to the general characteristics of nurses (n = 663).

Variables	Division	n (%)	Psychological distress (mean \pm SD)	t or F	P value (LSD)
Sex	Male	7 (1.1)	27.43 \pm 8.50	0.036	.849
	Female	656 (98.9)	23.10 \pm 8.08		
Age (yr)	<30	284 (42.8)	23.59 \pm 8.41 ^a	3.040	.048 (a > b)
	31–40	196 (29.6)	23.67 \pm 7.85 ^a		
	\geq 40	183 (27.6)	21.88 \pm 7.74 ^b		
Education level	\leq College	481 (72.5)	22.43 \pm 7.86	-3.670	.000
	\geq University	182 (27.5)	25.01 \pm 8.42		
Career (yr)	<10	263 (39.7)	23.17 \pm 8.44	1.922	.147
	11–20	163 (24.6)	24.08 \pm 7.59		
	\geq 21	237 (35.7)	22.46 \pm 8.01		
Marital status	Unmarried	158 (23.8)	22.90 \pm 8.22	1.439	.238
	Married	472 (71.2)	23.06 \pm 8.03		
	Others	33 (5.0)	25.45 \pm 8.28		
Employment type	Permanent nurse	498 (75.1)	23.24 \pm 8.12	0.540	.589
	Contract nurse	165 (24.9)	22.85 \pm 8.01		
Income*	High	3 (0.5)	23.67 \pm 6.11	12.769	.000 c > b > a
	Medium	171 (25.8)	20.11 \pm 6.41 ^a		
	Low	449 (67.7)	23.95 \pm 8.27 ^b		
	Poverty	40 (6.0)	26.88 \pm 9.07 ^c		

SD = standard deviation.

P value was derived using the independent t test or ANOVA test.

^{a, b, c} means followed by different letters are statistically significantly different at $\alpha = 0.05$.

* Self-perceived income level compares with the average income of all local people.

correlated with psychological distress were introduced in the Model 1 as control variables. For the reason of income (high) cases was very limited (0.5%, see Table 1), we combined income (high) cases into income (medium) cases. In second step, organizational justice was entered as the tested predictor variables. To examine multicollinearity between factors, a multicollinearity analysis was used in each step, results showed that the interaction was little because all variance-inflatable factors in collinear diagnoses were less than three.

As the result of hierarchical regression analysis shown in Table 3, Model 1 showed significant differences in psychological distress according to education level \geq University ($\beta = 2.731$, $P < .001$) and income \leq medium [income(low) $\beta = 3.545$, $P < .001$; income (poverty) $\beta = 7.105$, $P < .001$], which accounted for a significant unique portion of the variance ($F = 17.285$, $P < .001$), but only contribute to 7.5% of the variance in psychological distress.

In Model 2, which included the addition of organizational justice variables, the findings indicated that organizational justice was a significant predictor of psychological distress, explaining 20.5% of it. Among these organizational justice variables, interpersonal justice was the most significant factor ($\beta = 2.987$, $P < .001$), followed by distributive justice ($\beta = 1.293$, $P < .001$), whereas procedural and informational justice were not significantly related to psychological distress.

4. Discussion

Overall, the mean scores for psychological distress in present study was (23.14 \pm 8.09), which was close to the positive points (25 points) of psychological distress,^[28] the psychological

distress level was similar to in United Arab Emirates during the COVID-19 pandemic (27.13.7),^[30] in Iran during the COVID-19 pandemic (29.5 \pm 6.03),^[31] in Chinese psychiatric nurses (24.3 \pm 8.15),^[32] Higher than Chinese nursing students (20.67 \pm 6.14).^[33] In addition, our findings showed that participants who with university or above education (25.0 \pm 8.42, $P < .01$) or income perception was poverty (26.88 \pm 9.07, $P < .01$) got higher psychological distress scores (see Table 1), indicating that they experienced severe psychological distress. Although the participants whose age \leq 40 also had a higher psychological distress scores, we infer that age was not a valid factor, neither on organizational justice nor on psychological distress, as there was no relationship between them (see Table 2).

In present study, nurses who with bachelor's degree felt more psychological distress may be associated with imbalance of effort-reward in education aspect, since most of Chinese nurses only have attended junior college, so they may demand that they should be delegated more important tasks and be paid more, previous study also demonstrated that nurses who had a bachelor or higher educational degree felt higher job strain and showed the lowest intention to stay in China.^[34]

In present study, the income was calculated based on the participants' self-perceived income level compared to the average income of all local people, besides, most of participants (73.70%) felt their income level was below medium, implicating that they were poor as a professional health workers. Obviously, it is true that the salaries in low-income countries are low, and even lower in underdeveloped cities of China where the participants work in. However, we combined the results of Correlation between income and organizational justice, and psychological distress (see Table 2), and results

Table 2

Descriptive statistics and correlation matrix among key general characteristics, organizational justice, psychological distress of nurses.

Variables	Mean \pm SD	1 (r)	2 (r)	3 (r)	4 (r)	5
1. Age	34.25 \pm 9.97	1	–	–	–	–
2. Education level	–	–	1	–	–	–
3. Income	–	–	–	1	–	–
4. Organizational Justice	2.87 \pm 0.80	0.051	0.081*	0.338**	1	–
5. Psychological distress	23.14 \pm 8.09	–0.067	0.144	0.229**	0.508**	1

r = by Pearson correlation analysis, rs = by Spearman correlation analysis.

* $P < .05$ correlation is significant at the 0.05 level (2-tailed).

** $P < .01$ correlation is significant at the 0.05 level (2-tailed).

Table 3

Hierarchical regression analysis of factors affecting psychological distress in nurses.

Variables	Model 1			Model 2		
	β	t	P value	β	t	P value
Control variables						
1. Education level (reference \leq College)	2.731	3.918	<.001	2.136	3.431	.001
2. Income (reference \leq medium)						
Low	3.545	4.948	<.001	1.146	1.691	.091
Poverty	7.105	5.138	<.001	2.925	2.256	.024
Organizational Justice						
1. Procedural Justice	–	–	–	0.532	1.328	.185
2. Distributive Justice	–	–	–	1.293	3.566	<.001
3. Interpersonal Justice	–	–	–	2.987	5.888	<.001
4. Informational Justice	–	–	–	0.434	1.072	.284
F (P value)		17.285 (<.001)			35.245 (<.001)	
R ²		0.075			0.281	
R ² change		0.075			0.205	

Dependent variable: psychological distress; P value was derived using multiple regression analysis, $\alpha = 0.05$.

Model 1: predictors: (constant), education level \geq University, income(low), income(poverty). Model 2: predictors: (constant), education level \geq University, income(low), income(poverty), Procedural Justice, Distributive Justice, Interpersonal Justice, Informational Justice.

of the hierarchical regression analysis (see Table 3), we recognized that low income had little impact on psychological distress as an independent variable, the low income perception probably refer to insufficient pay for workload, effort-reward imbalance, distribution unfair, not just comparing salaries with other professions. Hence, it is more valuable to discuss the effect of organizational justice on psychological distress. As shown in Tables 2 and 3, education and income variables predicted slightly significant on psychological distress, only income had a weak relationship with psychological distress, we prove that organizational justice was an independent factor that directly predicted psychological distress, as in the previous study shown.^[35]

In present study, Organizational justice had a moderate positive correlation with psychological distress ($R = 0.508$, $P < .01$), it implicated that the more organizational injustice the higher psychological distress that nurses suffer. Given this situation, we conducted hierarchical regression analysis to determine the extent to which organizational justice affects psychological distress. As shown in Table 3, in model 1, although the education and income variables were significant for psychological distress ($F = 17.285$, $P < .001$), consistent with the hypothesis 1 that we proposed previously, but only contributed approximately 7.5% of psychological distress, which means that education and income variables linked to psychological distress were limited. In Model 2, the findings showed that organizational justice variables were significant for psychological distress ($F = 35.245$, $P < .001$), and contributed approximately 20.5% to psychological distress, representing organizational justice was a strong predictor of psychological distress, consistent with hypothesis 2 that we proposed in this study and similar findings have been reported in previous studies.^[22,36]

For the dimensions of organizational justice, distributive justice and interpersonal justice were significant ($\beta = 1.293$, $P < .001$; $\beta = 2.987$, $P < .001$, respectively), whereas procedural justice and informational justice had no significant effect on psychological distress. This result is distinct from the points of previous studies, which regard distributive justice and procedural justice as the strongest predictive power of outcomes.^[37,38] In present study, distributive justice and interpersonal justice were still the significant predictors for psychological distress, such findings are in accordance with previous studies.^[22,23] As we discussed above, income was deeply concerned about by the employees, especially in the poor regions, therefore, whether the salary was reasonable, paid fairly for their work and responsibilities should be paid close attention as it should be supposed to. The present findings highlight interpersonal justice was the strongest predictors of psychological distress, but the procedural justice and informational justice had no significant impact on psychological distress, it may be related to Chinese collectivist organizational culture. In China, employees consider the fairness of organization was affected by the traditional perception of leader beyond employee,^[39] and obey more equality norms than American employees under the collectivist organizational culture.^[40] In the present Chinese management system, leaders have a prominent place in organizations, decision-making procedures actually was to go through the motions, in some sense. Leaders can break any justice without punishment. Moreover, leaders do not need to explain the results of distribution to the employees, on the 1 hand, Chinese employees get used to the information not be opened, on the other hand, they were afraid to query the information justice, for question has no effect and would damage their relationship with leaders. Thus, the findings of taking interpersonal and distributive justice severely, especially putting interpersonal justice in the first, neglecting procedural justice and informational justice, it was a survival culture at work rather than a spiritual evaluation by leadership in Chinese organizations. The essential reasons of the present findings may be associated to the Chinese administrative management

system: Nurse leaders have the real power of decision; Nurse leaders position can only be promoted rather than demotion; most of nurse leaders position was appointed by the authoritative departments rather than selection on abilities by nurses.

Finally, we would like to make some suggestions to the authorities of policy making. First, the health authoritative departments should continue to vigorously implement policy of multi-sited licensed practice of nurse, smooth nurse flow channels and promote the rational flow of nurse, to our knowledge, most of Chinese nurses are still work in 1 hospital until they retire, they do not have the freedom or opportunities to change organizations; Second, the leaders of nurse such as head nurse, director of nursing should be elected competitively or demoted by nurses rather than be appointed; Third, nurses should have the right of evaluating leaders, in that case, pushing leaders to respect nurses' voice. Fourth, the promulgation of organizational justice policy to protect employees from the authorities and the real role of employee labor union organizations are urgently needed. Last, increasing the salaries of nurses as a professional health workers and promoting the fairness of distributions. Meanwhile, we have some advice for nurses. First, we alert nurses that they should strengthen the awareness of perception of organizational injustice, in some sense, a negative relationship with leaders could be as a kind of workplace bullying to harm their mental health. Second, nurses should unite together to claim for the organizational justice. More importantly, we advise the nursing management or leaders should notice that the most being taken seriously by nurses is their recognition and respect for subordinate, they need to improve their management level in this aspect to promote employees' perception of organizational justice, besides, the leaders should appropriately consider putting nurses who with bachelor's degree or above in important positions, give them more responsibilities for their work, and pay them back sufficiently.

5. Conclusions

To date, we discuss the impact of organizational justice on psychological distress among nurses, previous studies mostly focus on the outcome variables of distributive justice, such as turnover intention, work engagement, lower the nursing care quality,^[41,42] but little studies explores the influence of national culture to the cause of variables of organizational justice, especially when the culture is quite different from the western countries. The findings of this study highlight that the importance of the interpersonal justice and distributive justice on psychological distress in Chinese culture, suggesting nursing management or leaders notice that the most be taken seriously by nurses is their recognition and respect to subordinate. Alerting nurses, in some sense, negative relationship with leaders as a kind of bullying in workplace affect their mental health. The promulgation of organizational justice policies to protect employees from the Chinese government and the real role of employee labor union organizations are urgently needed.

6. Limitations

It is important to note several limitations of the present study and directions for future research. Firstly, this study was limited by participants, nurses from public hospitals, and a poorer province of China, both at the economic and management levels. Future research could examine participants from different occupations, including private enterprises and economically developed areas in China. Secondly, this study relied exclusively on self-reported measures. Future studies could include objective measures such as income, distributive justice, procedural justice indicators, and physiological concomitants of

psychological distress. Thirdly, future research could include other predictive variables (e.g., personal coping skills, personality, and macro organizational contexts). Finally, future research could discuss mental health from organizational factors and reinforce the perspective of the national culture. It is noteworthy that the interpretation result of this study whether could be applicable in other collectivist culture countries is still need more studies to identify.

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