



The Impact of Work Stress on Job Satisfaction and Sleep Quality for Couriers in China: The Role of Psychological Capital

Yujin Xie^{1†}, Jing Tian^{2†}, Yang Jiao³, Ying Liu¹, Hong Yu^{1*} and Lei Shi^{4*}

¹ Labor Model Health Management Center, Beijing Rehabilitation Hospital, Capital Medical University, Beijing, China,

² Department of Health Management, School of Health Management, Harbin Medical University, Harbin, China, ³ Hospital Office, Beijing Rehabilitation Hospital, Capital Medical University, Beijing, China, ⁴ School of Health Management, Southern Medical University, Guangzhou, China

OPEN ACCESS

Edited by:

Song Wang,
Sichuan University, China

Reviewed by:

Cristina Garcia-Ael,
National University of Distance
Education (UNED), Spain
Wenchao Wang,
Beijing Normal University, China

*Correspondence:

Lei Shi
hydleishi@126.com
Hong Yu
bjlmtj@163.com

[†]These authors have contributed
equally to this work

Specialty section:

This article was submitted to
Health Psychology,
a section of the journal
Frontiers in Psychology

Received: 14 July 2021

Accepted: 26 November 2021

Published: 14 December 2021

Citation:

Xie Y, Tian J, Jiao Y, Liu Y, Yu H
and Shi L (2021) The Impact of Work
Stress on Job Satisfaction and Sleep
Quality for Couriers in China: The Role
of Psychological Capital.
Front. Psychol. 12:730147.
doi: 10.3389/fpsyg.2021.730147

Objective: Work stress is one of the urgent public health problems, which has aroused wide attention. In addition, work stress also has a negative impact on the development of enterprises. This study has three purposes: (1) to understand the current status of working stress among couriers, (2) to examine the association between work stress, job satisfaction and sleep quality of Chinese couriers, and (3) to verify the mediating role of psychological capital.

Methods: A cross-sectional survey was conducted among 3000 couriers in Beijing of China from January to December 2019 using cluster stratified random sampling. Descriptive statistical analysis was used to describe demographic characteristics of respondents. Pearson correlation analysis was used to analyze the correlation among work stress, job satisfaction, sleep quality, and psychological capital. The mediating analysis was calculated role of psychological capital.

Results: A total of 2831 participants were included in this study. The average score of work stress was 2.49 ± 0.76 . Work stress was negatively correlated with job satisfaction ($r = -0.266, P < 0.01$), sleep quality ($r = -0.142, P < 0.01$), and psychological capital ($r = -0.268, P < 0.01$), respectively. The direct effect of work stress on job satisfaction is -0.223 , and the total effect of work stress on job satisfaction is -0.267 . The $a*b*c'$ is positive, indicating the mediating role psychological capital has in explaining the relationship between couriers' work stress and job satisfaction. Moreover, psychological capital plays a mediating role between work stress and sleep quality among couriers.

Conclusion: Couriers face certain work stress and should be paid attention to and psychological capital can effectively alleviate the work stress of couriers, so measures can be taken to improve it, promoting healthy development of employees and organizations.

Keywords: work stress, job satisfaction, sleep quality, psychological capital, couriers

INTRODUCTION

Work Stress

Work stress is a serious public health problem attracting widespread attention (Margolis et al., 1974). Work stress concerns individuals' physical reaction caused by an overload of work responsibilities. It occurs when an employee does not have the capability to cope with the current work environment and compromises their physical and mental wellbeing (Seňová and Antosova, 2014). Furthermore, work stress has a detrimental effect on the health of staff with cardiovascular diseases, depression, and cancer (Kivimaki et al., 2006; Melchior et al., 2007; Yang et al., 2019). Work stress negatively impacts organizations, which will ultimately incur losses because of worker dissatisfaction, negativity, high turnover rates, and absenteeism (Webster et al., 2010). Previous studies have focused on the relationship between work stress and burn-out in nursing staff, bank staff, and dentists (Choy and Wong, 2017; Ezenwaji et al., 2019; Giorgi et al., 2019). Other studies have found that work stress impacts employees' job satisfaction and sleep quality (Lu et al., 2007; Yang et al., 2018).

Psychological Capital

Luthans et al. (2004) first proposed the concept of psychological capital in 2004. It is an individual's positive state of psychological development, shown through four principles: self-efficacy, hope, optimism, and resilience. A study found that the psychological capital of employees was positively correlated with job satisfaction (Zhang et al., 2021). A study in China found that work stress and psychological capital affected sleep quality among medical staff in a hospital in Urumqi (Ye et al., 2019). Furthermore, psychological capital is often used in research involving workers from various professions (Chen and Lim, 2012; Kwok et al., 2015), suggesting that couriers are similarly suitable as a topic of study.

Job Satisfaction

Hoppock (1937) first proposed the concept of job satisfaction and defined it as an "employees' psychological and physiological satisfaction with the working environment." He also added that job satisfaction is the subjective reaction of employees to their working environment (Hoppock, 1937). Locke, Spector, and others further defined job satisfaction from different perspectives (Locke, 1969; Spector, 1997; Gigantesco et al., 2003). Studies on job satisfaction have focused on its influencing factors. By summarizing the relevant results, we conclude that job satisfaction is determined by two factors: work environment characteristics, such as work attributes, organizational environment, job type, job security, social status, and promotion prospects, and worker characteristics, such as level of education, gender, age, and personality (Seashore and Taber, 1975). Job satisfaction affects the work performance of the individual members as well as the entire organization. Job characteristics are closely related to job satisfaction and affect employees' personal life. Stress is a crucial factor that workers in a myriad of occupations experience, and

it directly affects job satisfaction (Friganović et al., 2019). This study focuses on the impact of work stress on couriers' job satisfaction.

Sleep Quality

Sleep quality is defined in three ways based on sleep indicators. The first—a relatively representative view—uses tools to measure the recorded sleep indicators (Buysse et al., 2006). The second indicator is the sleep quality index, which uses various measuring instruments to assess physiological indicators (Rechtschaffen and Kales, 1968). Third, the quality of sleep is indicated through self-assessment by the sleepers; this indicator is unrelated to the length, frequency, or duration of sleep (Krystal and Edinger, 2008). Buysse et al. assessed sleep quality using the following seven factors: subjective sleep quality, time taken to fall asleep, sleep efficiency, sleep duration, soporific drugs, sleep disorders, and daytime dysfunction. They used the Pittsburgh Sleep Quality (PSQI) index as an indicator to evaluate sleep quality (Buysse et al., 1989). Scholars have recently focused on the physical and psychological effects of sleep quality. Studies have found that lack of sleep leads to poor physical health and exacerbates symptoms of diabetes, coronary heart disease, arrhythmia, anxiety, depression, and negative emotion, thereby affecting one's mental health (Zhang and Gu, 2001). This study focuses on factors in the work environment influencing the sleep quality of couriers.

Chinese Couriers

A courier is an employee—responsible for collection, sorting, and delivery—that has direct contact with recipients and senders (Zhao and Liu, 2017). According to the 2019 Statistical Bulletin on the Development of China's Postal Industry, the express delivery business in China is burgeoning, increasing job opportunities at express delivery enterprises, resulting in a growing need for delivery personnel. Statistically, the number of couriers in China increases by 150,000–200,000 every year (Fang et al., 2017). However, the rapid development of the express delivery industry has precipitated changes in the workforce. Poor courier work ethic, increased resignations, and high staff turnover suggest that, through the period of rapid growth, there should be a focus on enterprise development and increased attention should be paid to courier job satisfaction (Yang et al., 2019). Chinese couriers are generally young and poorly educated. They work long hours on consecutive days in a challenging environment with little to no downtime. The express delivery industry requires little technical knowledge and long working hours while providing no personal growth opportunities. Consequently, it becomes difficult to attract high-performance personnel, resulting in couriers' relatively low social standing (Yang et al., 2019). Studies have shown work-related stress to be one of the main problems for couriers, with customer complaints being the primary cause of tension (Bian, 2016).

Examining couriers' work-related stress is beneficial to their occupational health and is socially significant. We used the causal stepwise regression method on the classical mediation test (Baron and Kenny, 1986). The bootstrap test was used to

re-examine the role of psychological capital on work stress, job satisfaction, and sleep quality of couriers (Hayes, 2013). To better understand the role of psychological capital on work stress, job satisfaction, and sleep quality among the couriers, we proposed the following hypotheses:

Hypothesis 1: Psychological capital plays a mediating role between work stress and job satisfaction among couriers.

Hypothesis 2: Psychological capital plays a mediating role between work stress and sleep quality among couriers.

MATERIALS AND METHODS

Study Design and Population

This study was conducted jointly by the Beijing federation of trade unions, the Beijing express association, and Beijing Rehabilitation Hospital, Capital Medical University. A cross-sectional survey utilizing an anonymous questionnaire was used to obtain data. Researchers conducted a one-on-one questionnaire survey with each participant with their consent. Cluster random sampling was used to select 10 express delivery companies each in five districts in Beijing. A total of 3,000 couriers from 50 express and logistics companies in Beijing were selected from January 1 to December 31, 2019. A total of 2,831 valid questionnaires were collected, with an effective recovery rate of 94.37%.

The inclusion criteria of participants were: (1) having more than one year's experience in the express delivery industry, and (2) voluntary and truthful cooperation with the professionals conducting the survey.

Measurements

The questionnaire involves two main sections: demographic information, such as gender, age, marital status, income, and level of education, and occupational information, including work stress, job satisfaction, sleep quality, and psychological capital.

Work Stress Scale

Work stress scale was used to measure couriers' work stress. It was compiled by Dong (2018), who based it on three studies (Cooper and Marshall, 1976; Ivancevich and Matteson, 1981; Zhang, 2012). The scale is divided into six parts with 24 items: task pressure (five items), job role stress (three items), career development pressure (four items), interpersonal relationship stress (three items), organizational structure and orientation stress (five items), and family-work interaction stress (four items). The scale was scored using a five-point Likert scale, where Strongly disagree, Disagree, Neither agree nor disagree, Agree, and Strongly agree represent 1, 2, 3, 4, and 5, respectively. The higher the score on the scale, the greater the levels of work stress. In this study, the scale's Cronbach's alpha was 0.956. The Cronbach's coefficient of the scale's six parts were 0.786, 0.891, 0.915, 0.790, 0.904, and 0.9020, respectively.

TABLE 1 | Demographic characteristics of the participants (N = 2831).

Variables	N	Percentage(%)
Gender		
Male	2103	74.3
Female	728	25.7
Age group (years)		
≤30	1052	37.2
31–40	1150	40.6
≥40	629	22.2
Marital status		
Married	2061	72.8
Single/divorced/widowed	770	27.2
Education level		
Junior high school or below	742	26.2
High school/technical secondary school	1089	38.5
Junior college or above	1000	35.3
Monthly income (RMB)		
≤5000	1307	46.2
5001–8000	1293	45.7
≥8001	231	8.1
Years of experience		
≤4	1425	50.3
5–10	1121	39.6
≥11	285	10.1
Daily working hours		
≤8	662	23.4
8–12	1895	66.9
≥12	274	9.7

TABLE 2 | Pearson correlation analysis among different variables.

Variables	M ± SD	1	2	3	4
Work stress	2.49 ± 0.76	1			
Job satisfaction	3.76 ± 0.78	-0.266**	1		
Sleep quality	3.25 ± 0.82	-0.141**	0.194**	1	
Psychological capital	4.22 ± 0.66	-0.268**	0.234**	0.148**	1

** $P < 0.01$.

Job Satisfaction

Job satisfaction was assessed using the single measurement item proposed by Wanous et al. (1997), namely "overall, how satisfied are you with your current job." The measurement also uses the Likert scale from 1, "very dissatisfied" to 5, "very satisfied." Higher scores indicate higher job satisfaction. This item had adequate reliability and validity in previous research (Dolbier et al., 2005).

Sleep Quality

Sleep measurements were assessed using the outcome question of "Over the past month, how do you feel your subjective sleep quality has been?" (Matsumoto et al., 2021). The questionnaire used a rating scale from 1, "very poor" to 5, "very good." The higher the value, the better the courier's sleep. The study confirmed that the measurement method has high validity and sensitivity, effectively measuring the courier's overall perception of sleep quality.

TABLE 3 | Differences of multivariate scores among participants with different demographic characteristics.

Characteristics	Work stress	Job satisfaction	Sleep quality	Psychological capital
	M ± SD	M ± SD	M ± SD	M ± SD
Gender				
Male	2.53 ± 0.77	3.78 ± 0.78	3.26 ± 0.82	4.24 ± 0.67
Female	2.40 ± 0.70	3.70 ± 0.78	3.23 ± 0.82	4.17 ± 0.64
<i>t</i>	3.944**	2.353*	0.915	2.550*
Age group (years)				
≤30	2.42 ± 0.69	3.73 ± 0.77	3.25 ± 0.81	4.17 ± 0.67
31–40	2.52 ± 0.75	3.76 ± 0.78	3.21 ± 0.84	4.26 ± 0.65
≥40	2.58 ± 0.85	3.81 ± 0.79	3.33 ± 0.80	4.23 ± 0.68
<i>F</i>	9.454**	2.103	4.390*	4.454*
Marital status				
Married	2.51 ± 0.77	3.77 ± 0.76	3.28 ± 0.81	4.25 ± 0.66
Single/divorced/widowed	2.45 ± 0.70	3.72 ± 0.81	3.19 ± 0.83	4.14 ± 0.67
<i>t</i>	1.986*	1.742	2.539*	3.944**
Education level				
Junior high school or below	2.56 ± 0.84	3.84 ± 0.82	3.32 ± 0.79	4.25 ± 0.65
High school/Technical secondary school	2.46 ± 0.73	3.75 ± 0.75	3.23 ± 0.82	4.22 ± 0.68
Junior college or above	2.50 ± 0.65	3.62 ± 0.79	3.27 ± 0.89	4.20 ± 0.66
<i>F</i>	3.953*	6.700**	2.566	1.402
Monthly income (RMB)				
≤5000	2.49 ± 0.76	3.66 ± 0.81	3.23 ± 0.80	4.16 ± 0.66
5001–8000	2.51 ± 0.76	3.82 ± 0.74	3.26 ± 0.82	4.25 ± 0.65
≥8001	2.46 ± 0.71	3.99 ± 0.73	3.33 ± 0.90	4.35 ± 0.69
<i>F</i>	0.459	25.762**	1.886	11.235**
Years of experience				
≤4	2.51 ± 0.02	3.76 ± 0.02	3.26 ± 0.02	4.17 ± 0.67
5–10	2.46 ± 0.02	3.76 ± 0.02	3.24 ± 0.03	4.29 ± 0.65
≥11	2.54 ± 0.04	3.74 ± 0.05	3.24 ± 0.05	4.22 ± 0.68
<i>F</i>	2.037	0.124	0.247	9.932**
Daily working hours				
≤8	2.35 ± 0.79	3.90 ± 0.78	3.36 ± 0.79	4.25 ± 0.69
8–12	2.52 ± 0.74	3.73 ± 0.77	3.24 ± 0.82	4.21 ± 0.65
≥12	2.67 ± 0.72	3.56 ± 0.75	3.05 ± 0.86	4.19 ± 0.67
<i>F</i>	21.072**	21.842**	13.518**	0.783

P* < 0.05, *P* < 0.01.**TABLE 4** | Results of mediation analyses.

Paths	a	b	c'	a*b	95% CI of a*b	c	SE	R ²
1. WS → PC → JS	-0.241**	0.184**	-0.223**	-0.044**	(-0.058, -0.032)	-0.267**	0.007	0.136
2. WS → PC → SQ	-0.241**	0.138**	-0.115**	-0.033**	(-0.047, -0.021)	-0.148**	0.008	0.089

N = 2831. Path 1 was controlled for gender, education level, monthly income, and daily working hours. Path 2 was controlled for age, marital status, and daily working hours. WS, work stress; JS, job satisfaction; PC, psychological capital; SQ, sleep quality. **P* < 0.05 and ***P* < 0.01, the indirect effect is significant (*) when the 95% CI does not include 0. SE, bootstrap regression standard error; R², variance accounted for; c', direct effect; a*b, indirect effect; c, total effect.

Psychological Capital Questionnaires

Psychological capital level was measured using the Psychological Capital Questionnaire (PCQ-24) in this study. It was compiled by Luthans et al. (2008) and translated into Chinese by Chaoping Li in 2008 (Luthans et al., 2007). It has 24 items and four subscales. A score of 1 indicates extreme disagreement, and a score of 6 indicates extreme agreement. The higher the score, the better the level of

psychological capital. The Cronbach's coefficient of the scale was 0.933 in this study.

Statistical Analysis

In this study, double-entry verification through Epidata 3.1 was used on the questionnaires, and SPSS V25.0 was used for data analysis. Descriptive statistical analysis was used to describe sample information. The Kolmogorov-Smirnov test was used

to evaluate the normality of related variables. Control variables were obtained using an independent sample *t*-test and one-way ANOVA to compare the differences between job stress, job satisfaction, psychological capital, and sleep quality scores among participants with different demographic characteristics. Pearson correlation analysis was used to analyze the correlation between work stress, job satisfaction, sleep quality, and psychological capital. The regression and mediating factors were developed using SPSS PROCESS and the macro calculation by Preacher and Hayes (2013). Work stress was the independent variable (X), and psychological capital (M), job satisfaction, and sleep quality were dependent variables (Y). The possibility of multiple collinearities among variables was also considered in this study. $P < 0.05$ was considered statistically significant (two-tailed).

Ethical Approval

This study was approved by the Ethics Committee of Beijing Rehabilitation Hospital, Capital Medical University. We obtained the verbal consent of each participants involved in the research process.

RESULTS

Common Method Biases

Harman's single factor test was used to identify common method bias. Following the main component analysis, 20 eigenvalues larger than one were recovered. The first factor described the common difference between all elements of the research variables generated by common methods and relationships between research variables. The first factor that explained the variation was 27.89%, which was much lower than the required criterion of 40%. Accordingly, we concluded that there were no serious common method biases in this study.

Demographics and Characteristics

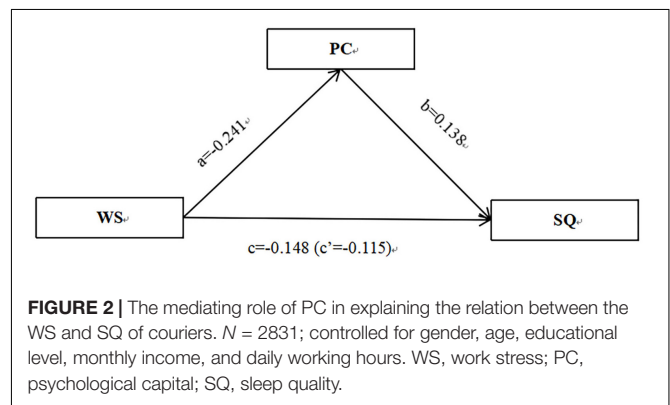
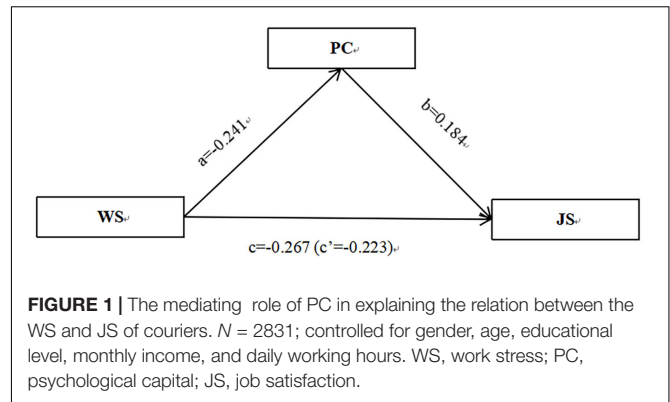
The demographic characteristics of the participants are shown in Table 1.

Correlations Between Study Variables

Table 2 shows the scores of work stress, job satisfaction, sleep quality, and psychological capital. Work stress negatively correlated with job satisfaction ($r = -0.266$, $P < 0.01$), sleep quality ($r = -0.142$, $P < 0.01$), and psychological capital ($r = -0.268$, $P < 0.01$).

Differences of Multivariate Scores Among Participants With Different Demographic Characteristics

There was a significant difference in the job satisfaction scores depending on the couriers' demographics. The differences among participants with different demographic characteristics in work stress, job satisfaction, sleep quality, and psychological capital are shown in Table 3.



Mediation Regression Models of Study Variables

Let us consider Path 1 (Table 4) as an example for brief overview. The results in Table 4 and Figure 1 can be summarized as follows: the direct effect of work stress on job satisfaction is -0.223 , and the total effect of work stress on job satisfaction is -0.267 . The $a*b*c'$ is positive, indicating the mediating role psychological capital has in explaining the relationship between couriers' work stress and job satisfaction (Figure 1). Path 2 similarly indicates the mediating role of psychological capital (Figure 2).

DISCUSSION

A cross-sectional study was conducted to understand work-related stress among couriers, analyze the relationship between work stress, job satisfaction, and sleep quality, and verify the mediating role of psychological capital.

Current State of Courier Work Stress

This survey found that couriers experience a medium level of work stress, which is lower than the results of other Chinese studies with couriers (Wang et al., 2015). The discrepancy between results may be because of variations between regions and sample sizes. Studies have shown that employees experience feelings of nervousness and unease when they are under pressure at work. This leads to lower work efficiency, lower job satisfaction,

resignations, and other phenomena that have a negative impact on personal and organizational development (Kivimaki et al., 2006; Jamal, 2007; Melchior et al., 2007; Webster et al., 2010; Yang et al., 2019). Courier work is tedious, with heavy workloads and low benefits, which only entrenches their work-related stress. This stress is exacerbated by customer distrust and inordinate demands, as well as customer complaints. These external factors influencing couriers' work stress affect their attitude, job satisfaction, and sleep quality.

Mediating Role of Psychological Capital

This study shows that psychological capital plays an intermediary role in the relationship between work stress and couriers' job satisfaction and sleep quality. The results are consistent with other studies (Hayes, 2013). Bolstering psychological capital has a positive effect on work-related stress. It can be regarded as a supplementary mediating effect, indicating that the mediating effect of psychological capital has been established. Couriers are under tremendous pressure. They are overtaxed because of workload and client interaction, causing a physical, mental, and spiritual burn-out. Couriers' work stress is negatively correlated with their psychological capital. The relationship between psychological capital and work stress is explained according to the resource conservation theory (Hobfoll, 2001). The theory assumes that first, individuals make efforts to acquire, retain, protect, and cultivate valuable resources and minimize resource losses. Second, stress occurs when personal resources are threatened by loss. The work stress will consume the individuals' favorable resources, ultimately precipitating the negative consequences of the pressure. If the individual has sufficient personal resources to make up for the loss, the adverse effects can be prevented. Studies have confirmed the moderating effect of personal resources. Van Yperen and Snijders (2000) and Pierce and Gardner (2004) found that self-efficacy played a moderating role between job requirements and mental health. Therefore, it can be inferred that psychological capital is a crucial resource. It can balance the negative experiences of courier work, alleviate the resource consumption caused by work-related stress, prevent adverse effects, enhance job satisfaction, and improve sleep quality (Thoits, 1994).

Implications for Organizational Development

Psychological capital has been shown to have a positive psychological impact on people's work and home life, and it promotes spontaneous individual growth, facilitating organizational development (Avey et al., 2011). Therefore, improving psychological capital is a necessary intervention to improve couriers' job satisfaction and sleep quality. Planned psychological training and group counseling can improve couriers' sense of self-efficacy and self-confidence. These interventions promote self-actualizing behavior, the maintenance of an optimistic attitude, and swift recovery from psychological setbacks. Organizations should particularly focus on the cultivation of couriers' self-efficacy, confidence, and optimism.

Limitations

Some limitations in our study should be noted. Our study is cross-sectional. Without a longitudinal survey, the causal relationship between variables cannot be explained. Further longitudinal studies can solve this problem. Moreover, due to the functional characteristics of the express delivery industry, the number of female participants in this study is relatively small. Lastly, the study is limited to couriers only in Beijing. A larger sample needs to be surveyed to verify the generalizability of the study results.

CONCLUSION

This study shows that couriers in Beijing experience a medium level of work stress. Measures should be taken to reduce courier work stress to guarantee their job satisfaction and sleep quality. The effect of psychological capital on couriers' job satisfaction and sleep quality indicates that this variable has practical significance in promoting their health at work and home. It provides a valuable reference for the human resource management of couriers in the future.

DATA AVAILABILITY STATEMENT

The original contributions presented in the study are included in the article/**Supplementary Material**, further inquiries can be directed to the corresponding authors.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by the Ethics Committee of Beijing Rehabilitation Hospital, Capital Medical University. We obtained the consent of each participant involved in the research process. The patients/participants provided their written informed consent to participate in this study.

AUTHOR CONTRIBUTIONS

YJ and HY conceived and designed the experiments. YX, YJ, and YL performed the experiments. YX and LS analyzed the data. LS and YL contributed reagents, materials, and analysis tools and provided technical support. YX and JT wrote the manuscript. LS and HY critically revised the manuscript. All authors checked and proofread the final version of the manuscript.

FUNDING

This work was supported by the Guangdong Basic and Applied Basic Research Foundation (2020A1515110369), National Natural Science Foundation of China (72104098), and Project funded by China Postdoctoral Science Foundation (2021M701592).

ACKNOWLEDGMENTS

The authors thank all participants in this study. The authors also thank Beijing Federation of Trade Unions and Beijing Express Association for their strong support.

REFERENCES

- Avey, J. B., Wernsing, T. S., and Mhatre, K. H. (2011). A longitudinal analysis of positive psychological constructs and emotions on stress, anxiety, and well-being. *J. Leadersh. Organ. Stud.* 18, 216–228. doi: 10.1177/1548051810397368
- Baron, R. M., and Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: conceptual, strategic, and statistical considerations. *J. Pers. Soc. Psychol.* 51, 1173–1182. doi: 10.1037/0022-3514.51.6.1173
- Bian, Z. Y. (2016). Investigation on labor condition of courier in Beijing. *J. Beijing Vocat. Coll. Labour Soc. Secur.* 4, 35–39.
- Buyse, D. J., Ancoli-Israel, S., Edinger, J. D., Lichstein, K. L., and Morin, C. M. (2006). Recommendations for a standard research assessment of insomnia. *Sleep* 29, 1155–1173. doi: 10.1093/sleep/29.9.1155
- Buyse, D. J., Reynolds, C. F. III, Monk, T. H., Berman, S. R., and Kupfer, D. J. (1989). The Pittsburgh Sleep Quality Index: a new instrument for psychiatric practice and research. *Psychiatry Res.* 28, 193–213. doi: 10.1016/0165-1781(89)90047-4
- Chen, D. J. Q., and Lim, A. V. K. G. (2012). Strength in adversity: the influence of psychological capital on job search. *J. Organ. Behav.* 33, 811–839. doi: 10.1002/job.1814
- Choy, H., and Wong, M. (2017). Occupational stress and burnout among Hong Kong dentists. *Hong Kong Med. J.* 23, 480–488. doi: 10.12809/hkmj166143
- Cooper, C. L., and Marshall, J. (1976). Occupational sources of stress: a review of the literature relating to coronary heart disease and mental ill health. *J. Occup. Psychol.* 49, 11–28. doi: 10.1111/j.2044-8325.1976.tb00325.x
- Dolbier, C. L., Webster, J. A., McCalister, K. T., Mallon, M. W., and Steinhardt, M. A. (2005). Reliability and validity of a single-item measure of job satisfaction. *Am. J. Health Promot.* 19, 194–198. doi: 10.4278/0890-1171-19.3.194
- Dong, J. (2018). *Research On The Impact Of Work Stress On Work Performance Of Bank Tellers For X Bank*. Beijing: Beijing Jiaotong University.
- Ezenwaji, I. O., Eseadi, C., Okide, C. C., Nwosu, N. C., Ugwoke, S. C., Ololo, K. O., et al. (2019). Work-related stress, burnout, and related sociodemographic factors among nurses: implications for administrators, research, and policy. *Medicine* 98:e13889. doi: 10.1097/MD.00000000000013889
- Fang, Y., Wang, J., and Zhou, Z. (2017). An empirical study on the working and living situation of first-line couriers in cities – an empirical study on the working and living situation of young employees in the urban express industry. *Chin. Youth Study* 4, 4–11.
- Friganović, A., Selić, P., Ilić, B., and Sedić, B. (2019). Stress and burnout syndrome and their associations with coping and job satisfaction in critical care nurses: a literature review. *Psychiatr. Danub.* 31, 21–31.
- Gigantesco, A., Picardi, A., Chiaia, E., Balbi, A., and Morosini, P. (2003). Brief Report: job Satisfaction Among Mental Health Professionals in Rome, Italy. *Community Ment. Health J.* 39, 349–355. doi: 10.1023/a:1024076209376
- Giorgi, G., Arcangeli, G., Ariza-Montes, A., Rapisarda, V., and Mucci, N. (2019). Work-related stress in the Italian banking population and its association with recovery experience. *Int. J. Occup. Med. Environ. Health* 32, 255–265. doi: 10.13075/ijom.1896.01333
- Hayes, A. (2013). Introduction to mediation, moderation, and conditional process analysis. *J. Educ. Meas.* 51, 335–337. doi: 10.1111/jedm.12050
- Hobfoll, S. E. (2001). The influence of culture, community, and the nested-self in the stress process: advancing conservation of Resources theory. *Appl. Psychol.* 50, 337–421. doi: 10.1111/1464-0597.00062
- Hopppock, R. (1937). Job satisfaction of psychologists. *J. Appl. Psychol.* 21, 300–303. doi: 10.1037/h0057579
- Ivancevich, J. M., and Matteson, M. T. (1981). *Stress And Work: a Managerial Perspective*. Northbrook, Illinois: Scott Foresman.
- Jamal, M. (2007). Job stress and job performance controversy revisited. *Int. J. Stress Manag.* 14, 175–187. doi: 10.1037/1072-5245.14.2.175
- Kivimäki, M., Virtanen, M., Elovainio, M., Kouvonen, A., Vaananen, A., and Vahtera, J. (2006). Work stress in the etiology of coronary heart disease - a meta-analysis. *Scand. J. Work Environ. Health* 32, 431–442. doi: 10.5271/sjweh.1049
- Krystal, A. D., and Edinger, J. D. (2008). Measuring sleep quality. *Sleep Med.* 9, S10–S17. doi: 10.1016/S1389-9457(08)70011-X
- Kwok, S. Y. C. L., Cheng, L., and Wong, D. F. K. (2015). Family Emotional Support, Positive Psychological Capital and Job satisfaction among Chinese White-Collar workers. *J. Happiness Stud.* 16, 561–582. doi: 10.1007/s10902-014-9522-7
- Locke, E. A. (1969). What is job satisfaction? *Organ. Behav. Hum. Perform.* 4, 309–336. doi: 10.1016/0030-5073(69)90013-0
- Lu, K. Y., Chang, L. C., and Wu, H. L. (2007). Relationships between professional commitment, job satisfaction, and work stress in public health nurses in Taiwan. *J. Prof. Nurs.* 23, 110–116. doi: 10.1016/j.profnurs.2006.06.005
- Luthans, F., Avey, J. B., and Patera, J. L. (2008). Experimental analysis of a Web-Based training intervention to develop positive psychological capital. *Acad. Manag. Learn. Educ.* 7, 209–221. doi: 10.1186/1471-2458-14-685
- Luthans, F., Luthans, K. W., and Luthans, B. C. (2004). Positive psychological capital: beyond human and social capital. *Bus. Horiz.* 47, 45–50. doi: 10.1016/j.bushor.2003.11.007
- Luthans, F., Youssef-Morgan, C. M., and Avolio, B. J. (2007). *Psychological Capital: developing the Human Competitive Edge*. Oxford: Oxford University Press.
- Margolis, B. L., Kroes, W. H., and Quinn, R. P. (1974). Job stress: an unlisted occupational hazard. *J. Occup. Med.* 16, 659–661.
- Matsumoto, Y., Kaneita, Y., Itani, O., Otsuka, Y., and Kinoshita, Y. (2021). Longitudinal epidemiological study of subjective sleep quality in Japanese adolescents to investigate predictors of poor sleep quality. *Sleep Biol. Rhythms* 1–10. doi: 10.1007/s41105-021-00343-8
- Melchior, M., Caspi, A., Milne, B. J., Danese, A., Poulton, R., and Moffitt, T. E. (2007). Work stress precipitates depression and anxiety in young, working women and men. *Psychol. Med.* 37, 1119–1129. doi: 10.1017/S0033291707000414
- Pierce, J. L., and Gardner, D. G. (2004). Self-Esteem within the work and organizational context: a review of the organization-based Self-Esteem literature. *J. Manag.* 30, 591–622. doi: 10.1016/j.jm.2003.10.001
- Rechtschaffen, A., and Kales, A. (1968). *A Manual of Standardized Terminology, Techniques and Scoring System for Sleep Stages of Human Subjects*. Washington DC: Public Health Service US Government Printing Office.
- Seashore, S. E., and Taber, T. D. (1975). Job Satisfaction Indicators and Their Correlates. *Am. Behav. Sci.* 18, 333–368. doi: 10.1177/000276427501800303
- Seňová, A., and Antosova, M. (2014). Work stress as a worldwide problem in present time. *Procedia Soc. Behav. Sci.* 109, 312–316. doi: 10.1016/j.sbspro.2013.12.463
- Spector, P. E. (1997). *Job Satisfaction: application, Assessment, Causes, And Consequences*. Thousand Oaks, CA: Sage. doi: 10.4135/9781452231549
- Thoits, P. A. (1994). Stressors and problem-solving: the individual as psychological activist. *J. Health Soc. Behav.* 35, 143–160. doi: 10.2307/2137362
- Van Yperen, N. W., and Snijders, T. A. B. (2000). A multilevel analysis of the demands-control model: is stress at work determined by factors at the group level or the individual level? *J. Occup. Health Psychol.* 5, 182–190. doi: 10.1037/1076-8998.5.1.182
- Wang, F., Duan, F. G., and Kuai, X. X. (2015). Study on the relationship between job stress and job burnout of couriers. *Hum. Resour. Manag.* 5, 300–304.
- Wanous, J. P., Reichers, A. E., and Hudy, M. J. (1997). Overall job satisfaction: how good are single-item measures? *J. Appl. Psychol.* 82, 247–252. doi: 10.1037/0021-9010.82.2.247

SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/fpsyg.2021.730147/full#supplementary-material>

- Webster, J. R., Beehr, T. A., and Christiansen, N. D. (2010). Toward a better understanding of the effects of hindrance and challenge stressors on work behavior. *J. Vocat. Behav.* 76, 68–77. doi: 10.1016/j.jvb.2009.06.012
- Yang, B., Wang, Y., Cui, F., Huang, T., Sheng, P., Shi, T., et al. (2018). Association between insomnia and job stress: a meta-analysis. *Sleep Breath.* 22, 1221–1231. doi: 10.1007/s11325-018-1682-y
- Yang, T., Qiao, Y., Xiang, S., Li, W., Gan, Y., and Chen, Y. (2019). Work stress and the risk of Cancer: a meta-analysis of observational studies. *Int. J. Cancer* 144, 2390–2400. doi: 10.1002/ijc.31955
- Ye, S. J., Wang, X. G., Wu, Y. L., and Yan, J. (2019). Sleep quality and influencing factors of doctors and nurses in a third-grade class-A hospital in Urumqi. *Occup. Health* 35, 729–732.
- Zhang, F., Liu, Y., and Wei, T. (2021). Psychological Capital and Job Satisfaction Among Chinese Residents: a Moderated Mediation of Organizational Identification and Income Level. *Front. Psychol.* 12:719230. doi: 10.3389/fpsyg.2021.719230
- Zhang, P., and Gu, J. W. (2001). Advances in insomnia research. *J. Brain Nerv. Dis.* 9, 128–130.
- Zhang, X. Y. (2012). *Study On The Influence Of Working Stress On Job Performance Of Bank Tellers*. China: Jiangxi Agricultural University.
- Zhao, L., and Liu, S. H. (2017). A study on the survival status and role identity of couriers in Beijing. *Chin. Youth Study* 6, 75–81.

Conflict of Interest: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's Note: All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article, or claim that may be made by its manufacturer, is not guaranteed or endorsed by the publisher.

Copyright © 2021 Xie, Tian, Jiao, Liu, Yu and Shi. This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY). The use, distribution or reproduction in other forums is permitted, provided the original author(s) and the copyright owner(s) are credited and that the original publication in this journal is cited, in accordance with accepted academic practice. No use, distribution or reproduction is permitted which does not comply with these terms.