The Influence of Interpersonal Conflict on Organizational Members: An Analysis Based on the Chain Mediation Model

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ABSTRACT

Interpersonal conflict and mental health are both important topics in the field of management and organizational behavior. In order to explore the mechanism underlying the link between interpersonal conflict and mental health, we conducted a two wave survey (separated by one week) on 299 IT employees. SPSS22.0 and Amos were used to analyze the data, and the Bootstrap method was used to test the mediation effect. Results showed that: (1) Interpersonal conflict was positively correlated with rumination, but negatively correlated with mental health; rumination was negatively correlated with sleep quality and mental health; sleep quality was positively correlated with mental health; (2) Rumination mediated the relationship between interpersonal conflict and mental health; Rumination and sleep quality sequentially mediated the link between interpersonal conflict and mental health. Research significance: This study revealed the negative impact of interpersonal conflict on the mental health of organization members and called for attention to address the workplace conflict and mental health problems of Internet workers.

Keywords: *Interpersonal conflict; rumination; sleep quality; mental health*

1. INTRODUCTION

According to the World Health Organization's definition, mental health is a state of health or well-being in which people are more likely to realize their self-worth, cope with daily stresses, boost work efficiency, and deal with problems [17]. Unfortunately, the overall state of employees' mental health in today's society is worrisome, and the mental health problems of IT workers are particularly prominent. Data showed that 26.2% of white-collar employees in companies perform poorly on measures of psychological health (GHQ-12), and this percentage is even higher among IT workers at 39.7% [23]. The recent social incidents related to the 996 working system on the Internet suggest that the mental health of IT workers has become an unignorable social issue.

2. LITERATURE REVIEW

2.1 Workplace Interpersonal Conflict and Employees' Mental Health

According to the vitamin model, there are nine main influencing factors of mental health: control opportunities, skill use opportunities, external goals, variability, environmental clarity, money availability, physical security, social status, and interpersonal contact opportunities [24]. Among these, interpersonal conflict is one of the most prominent influencing factors [10]. Although there is a lack of direct evidence regarding the influence of interpersonal conflict on mental health in Internet industry studies, previous surveys on the mental health of IT employees found that 31.7% of employees were concerned with interpersonal problems [21]. Good interpersonal relationship contributed to increased job satisfaction [3], whereas interpersonal conflict led to increased negative emotions, decreased job satisfaction, and poor job performance [13] [19]. Building on extant literature, we hypothesized that interpersonal conflict

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negatively predicts psychological well-being among IT employees (H1).

2.2 The Mediating Role of Rumination

According to the Theory of Cognitive Appraisal of Stress proposed by Lazarus and Folkman (1984), people react to stressful events by conducting a two-stage cognitive appraisal of the situation and their coping resources. Rumination is considered a cognitive appraisal process as a spontaneous recurring reflection after an individual experiences a negative stressful event. Rumination results from personal experiences of the stressful event and triggers a series of adverse effects, such as aggravated symptoms of depression and anxiety [14]. Studies on adolescents have shown that interpersonal stress could lead to anxiety and depression through increased ruminative thinking. Thus, we hypothesize that rumination mediates the relationship between interpersonal conflict and psychological well-being (H2).

2.3 The Mediating Role of Sleep Quality

Sleep is one of the most important physiological needs of human beings. Good sleep brings energy, improves cognition, and ensures a healthy psychological state [9]. Regrettably, many people in China suffer from sleep problems. According to the China Sleep Index Report 2020, the proportion of people with frequent insomnia was as high as 36.1% in 2019. Additionally, work and life stress are the main reasons for insomnia. The 996 group, represented by IT employees, is one of the main groups with significant sleep problems.

In fact, many studies have shown that sleep quality is significantly positively correlated with mental health [25]. Long-term sleep disorders can even endanger employees' physical and mental health [1]. Poor sleep quality negatively affects employees' mood, lowers job satisfaction, increases fatigue and work impairment [16]. Meanwhile, there could be a potential association between interpersonal relationship and sleep quality. In a study of male white-collar workers, researchers found that interpersonal conflict was most strongly associated with insomnia among the 17 work stressors examined [15]. Therefore, we hypothesize that in the IT industry where sleep problems are especially prominent, sleep quality mediates the relationship between interpersonal conflict and psychological health (H3).

2.4 Chain Mediating Role of Rumination and Sleep Quality

In addition to examining the independent mediating role of rumination and sleep quality, we suggest that rumination and sleep quality may also play a sequential mediating role in the relationship between interpersonal conflict and mental health. According to the perseverative cognition hypothesis proposed by Brosschot et al. (2006), rumination induces persistent psychological and physiological arousals in individuals, which in turn causes short- or long-term disturbance of sleep. Rumination, as a form of pre-sleep intrusion, prevents individuals from falling asleep and interrupts the sleep maintenance activities. Previous studies of medical students and nurses have also shown that ruminative thinking negatively predicted sleep quality [12]. A study of adolescents also found that high levels of rumination caused individuals to have difficulty falling asleep and lowered their sleep quality (Xu et al., 2019) [5].

Rumination may also threaten mental health by decreasing sleep quality. Studies have found that individuals with high levels of rumination were more likely to develop not only sleep problems, but also mental health problems [18]. At the same time, ruminative thinking caused by interpersonal stress in the workplace can also reduce their sleep quality [8]. Based on previous evidence, we propose that interpersonal conflict reduces people's psychological well-being by increasing rumination which further reduces sleep quality. That is, rumination and sleep quality play a sequential mediating role in interpersonal conflict and psychological well-being (H4).

3. RESEARCH METHODOLOGY

3.1 Research Process

We conducted a two-wave survey study separated by one-week. The researcher distributed the questionnaire links to the group of subjects in wave one (T1) and wave two (T2). Subjects completed all questionnaire responses on their cell phones or web pages. The wave I (T1) survey included demographic information and interpersonal conflict scales; the wave II (T2) survey one week later included rumination, sleep quality and mental health scales.

3.2 Study Population

This study adopted a snowball sampling. The scope of the survey was IT employees, covering multiple cities and multiple positions. A total of 299 IT practitioners were recruited for the study, 286 of them completed both waves. In the final sample, 129 were male and 157 were female; 224 were from Beijing and 62 were from cities outside of Beijing; the occupational distribution was 84 programmers, 85 product managers or project managers, 47 operations, 45 marketing and business, and 37 others. The study finally yielded 572 responses, with an effective rate of 95.65%.

3.3 Measurement Tools

Interpersonal conflict (T1): The five-point Interpersonal Conflict Scale was used in this study. This scale was developed by Liu, Spector, & Shi (2007) based on Spector and Jex (1998). The scale consists of eight items, with representative questions such as "How often do your colleagues yell at you at work (1 = Never; 5 = Always; Cronbach'alpha = 0.899)?

Rumination (T2): The job anxiety and rumination cognitive scale were used in this study. The scale is a five-point scale developed by Flaxman, Menard, Bond, and Kinman (2012), consists of five items, with representative questions such as "I keep thinking about stressful situations at work (1 = Never; 5 = Always; Cronbach' alpha = 0.905).

Sleep quality (T2): This study was based on the five-point Sleep Quality Questionnaire (adapted by Westerberg et al. from Karolinska's sleep diary) and modified according to the actual situation of the subjects, with two items, such as "How did you sleep in the past two weeks (1 = Very Badly; 5 = Very Well; Cronbach' alpha = 0.825) ?

Mental health (T2): The four-point GHQ12 questionnaire developed by Goldberg was used. The scale consists of twelve items, with representative questions such as "Are you able to concentrate on your work (1 = Better Than Usual; 4 = Worse Than Usual; Cronbach' alpha = 0.884)?

3.4 Data Processing

Data analysis was performed using SPSS 22.0 and Amos. Mediating effects were probed by obtaining bootstrapped confidence intervals using the PROCESS macro [6]. The bias-corrected percentile Bootstrap method (bias-corrected percentile Bootstrap method) has higher test validity than the traditional Sobel method [4].

4. ANALYSIS OF RESULTS

4.1 Test for common method bias

The Harman's one-way test was used to test for common method bias. Five factors were drawn out, with the largest factor explaining 30.08% (<40%) of the total variance, which indicated an absence of serious common method bias.

4.2 Descriptive Statistics and Correlation Analysis

The results of descriptive statistics are shown in Table 1. It was found that interpersonal conflict was significantly and positively correlated with rumination, and significantly and negatively correlated with both sleep quality and mental health; rumination was significantly and negatively correlated with both sleep quality and mental health; and sleep quality was significantly and positively correlated with mental health.

Table 1. Mean, standard deviation and correlation matrix of the main variables.

Variables	M	SD	1	2	3	4
Interpersonal conflict (T1)	1.97	0.68	-			
Rumination (T2)	2.87	0.79	0.30**	-		
Sleep quality (T2)	3.12	0.78	–0.19**	–0.31**	-	
Mental health (T2)	4.03	0.45	–0.26**	–0.47**	0.37**	-

Note: *$p < 0.05$, **$p < 0.01$, the same below

4.3 Interpersonal Conflict and Mental Health: A Test of Chain Mediating Effects

After controlling for gender, age, education, monthly income, and years of work, we used interpersonal conflict in T1 as the independent variable, mental health in T2 as the dependent variable, and rumination and sleep quality in T2 as the mediating variables, and conducted path analysis using Model 6 in PROCESS.

The results of the path analysis are shown in Table 2. The interpersonal conflict was negatively correlated with mental health, verifying H1. Meanwhile, interpersonal conflict was positively correlated with rumination, but not significantly correlated with sleep quality. Rumination was negatively correlated with both mental health and sleep quality; sleep quality was positively correlated with mental health. The model is shown in Figure 1.

We obtained bootstrapped confidence intervals to further examine the mediating effects of rumination and sleep quality (n=1000). A total of three mediating effects were examined in the study: path 1 (mediating effect of

rumination): interpersonal conflict-rumination-mental health; path 2 (mediating effect of sleep quality): interpersonal conflict-sleep quality-mental health; and path 3 (chain mediating effect of rumination and sleep quality): interpersonal conflict-rumination-sleep quality-mental health. The results showed (see Table 3) that the confidence intervals of both path 1 and path 3 did not contain 0, which means that rumination could independently mediate the relationship between interpersonal conflict and mental health. Additionally, rumination with sleep quality sequentially mediated the relationship between interpersonal conflict and mental health. Therefore, H2 and H4 were verified. The pathway 2 was not statistically significant, indicating that sleep could not independently mediate the relationship between interpersonal conflict and mental health. H3 was thus not validated.

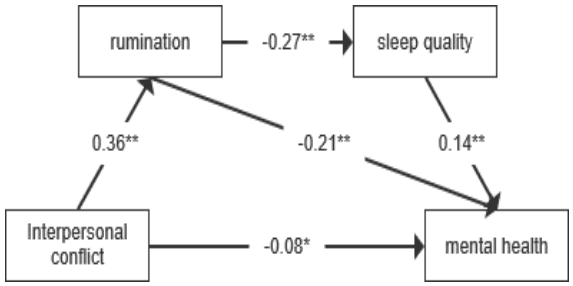

Figure 1. The relationship between interpersonal conflict and mental health: the chain mediating role of rumination and sleep quality.

Table 2. Chain mediation model between interpersonal conflict and mental health (N = 286).

Variables	Rumination			Sleep Quality			Mental Health		
	β	*SE*	*t*	*β*	*SE*	*t*	*β*	*SE*	*t*
Constant	2.22	0.44	5.11**	4.16	0.45	9.28**	4.26	0.27	15.99**
Sex	0.04	0.09	0.40	–0.00	0.09	–0.04	–0.03	0.05	–0.68
Age	0.01	0.01	0.47	–0.01	0.01	–0.77	0.00	0.01	0.54
Education level	–0.08	0.08	–1.02	0.01	0.08	0.15	0.01	0.04	0.14
Personal monthly income	0.01	0.04	0.33	0.06	0.03	1.69	0.01	0.02	0.32
Years of work	–0.03	0.02	–1.56	0.01	0.02	0.30	–0.00	0.01	–0.05
Interpersonal conflict	0.36	0.07	5.15**	–0.12	0.07	–1.62	–0.08	0.04	–2.17*
Rumination				–0.27	0.06	–4.63**	–0.21	0.03	–6.66**
Sleep quality							0.14	0.03	4.53**
R2		0.10			0.11			0.30	
F		5.18**			4.79**			14.63**	

Table 3. The independent and chain mediating effect of rumination and sleep quality

Variable	Effect	BootSE	BootLLCI	BootULCI	Amount of effect (%)
Direct effect	–0.080	0.037	–0.153	–0.001	
Path 1	–0.075	0.020	–0.119	–0.041	40.3
Path 2	–0.016	0.010	–0.039	0.002	8.6
Path 3	–0.014	0.006	–0.027	–0.005	7.5
Total mediating effect	–0.106	0.025	–0.159	–0.061	57.0

Note: Pathway 1: Interpersonal conflict- rumination -mental health; pathway 2: Interpersonal conflict-sleep quality-mental health; pathway 3: Interpersonal conflict- rumination -sleep quality-mental health.

5. CONCLUSION

This two-wave study investigated the relationship between interpersonal conflict and psychological health among IT practitioners. The results found that interpersonal conflict negatively predicted psychological health; furthermore, interpersonal conflict could affect psychological health through the independent mediating effect of rumination, and through the chain mediating effect of rumination and sleep quality.

This study is unique in that it focuses on IT employees. The rapid development of the Chinese Internet industry in recent years has resulted in many psychological problems, leaving many employees in chronic stress. Despite this, few researchers focused on the mental health status of this group. This study improves understanding of the psychological health of employees in this industry. The working mode of 996 has been adopted by more and more enterprises [2]. As a consequence, employees are not only required to work overtime frequently, but also accept the life of the bottom 10% [7] [11].

While previous studies have focused more on the effects of interpersonal conflict on work behaviors (e.g., negative work), our study focuses on the spillover effects of interpersonal conflict on psychological well-being [19]. Previous research has shown that knowledge-based employees in technology-based companies are more likely to experience greater psychological stress due to their job characteristics and are more likely to have an interpersonal conflict during the work process [22]. Therefore, it is particularly important for IT practitioners who are also knowledge-based employees to pay attention to the spillover effects of interpersonal conflict.

We also explored the potential mediating role of rumination and sleep quality. It was found that rumination could play an independent mediating role, which means that interpersonal conflict in the workplace during the day as a stressor can cause ruminative thinking before sleep, and the mental health of employees is inevitably damaged by the effect of "rewinding".

In addition, rumination can also reduce mental health by decreasing sleep quality. This finding is also consistent with previous studies that nighttime rumination affects sleep quality. The higher the level of ruminant thinking, the poorer the quality of sleep. According to affective spillover theory, changes in affect in one domain spill over to other domains. Our findings reveal the spillover effect of interpersonal conflict on IT practitioners, i.e., workplace interpersonal conflict results in employees' obsessive thoughts before bedtime, which leads to insomnia at night and ultimately damages employees' mental health.

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