

# The Spillover Effects of Supportive Neighboring Behavior on Mental Health and Career Satisfaction: A Longitudinal Research on Chinese Low-Income Employees

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**Background:** We examined the effects of supportive neighboring behavior on mental health and career satisfaction among Chinese low-income employees. We further examined the mediating roles of work interference with family (WIF) and of family interference with work (FIW) in this relationship.

**Methods:** A total of 220 Chinese low-income employees were selected via two-wave longitudinal survey in China; the time distance was five weeks. They completed questionnaires on their self-reported supportive neighboring behavior, work–family conflict, general mental health and career satisfaction. Afterwards, we adopted a structural equation modeling (SEM) to examine our hypotheses by R (Version 3.5.3) and Lavaan Package (Version 0.6-3).

**Results:** Supportive neighboring behavior (Time 1) improved good mental health (Time 2) and career satisfaction (Time 2). Work interference with family (Time 1) mediated the effect of neighboring behavior on mental health while family interference with work (Time 1) mediated the effect of neighboring behavior on mental health and career satisfaction.

**Conclusion:** Our findings suggest that supportive neighboring behavior is vital in mitigating mental health problems and enhancing career satisfaction by decreasing work interference with family and family interference with work. Our research expands the scope of current literature on community support by incorporating bi-directional supportive neighboring behavior. By adopting family interference with work and work interference with family as mediators, our research examines the spillover mechanisms through which career satisfaction and mental health are influenced by supportive neighboring behavior.

**Keywords:** supportive neighboring behavior, mental health, career satisfaction, work interference with family, family interference with work

## Introduction

Low-income employees are at high risk of developing mental health problems because of their low socioeconomic status.<sup>1</sup> Due to the stress correlated with financial fragility, the status quo is that few low-income workers can simultaneously possess the high work-family benefits and sufficient social resources necessary to cope with these conflicts and pressures.<sup>2</sup> Low-income employees have to rely on other resources to cope with mental health problems, and to achieve career success.<sup>3</sup> Low-income employees have to rely on other support resources to cope with mental health problems, and career satisfaction, especially organizational and

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family support<sup>4,5</sup> However, limited research explored the influences of community support on mental health and any spillover effects on career-related outcomes, especially for this special group of low income.

In building a harmonious community, neighboring behavior is a means for individuals to acquire social capital. Conventional research has been verified that received neighboring behavior, as a type of support, is part of social capital and constructively provides practical help to individuals.<sup>6,7</sup> The given neighboring behavior (NBG)'s impact on conflicts is often positive and can serve as a means of resource acquisition. First, helping neighbors with their problems is a process of social exchange. From the perspective of social exchange, based on the grounds of reciprocity norms, the neighbors, as help receivers, help those who have helped themselves; thus, the given neighboring behavior also bolsters the social support that individuals receive.<sup>8</sup> Second, helping others can promote positive emotions, such as self-confidence, a sense of accomplishment and a contented mood. In addition, from a learning perspective, when helping others, individuals can acquire cognitive processing skills, such as problem-solving.<sup>9</sup> All these are part of individuals' social capital.<sup>10</sup> As such, based on the literature, we treat given neighboring behavior and received neighboring behavior as an integrated concept and as a means through which individuals obtain social capital.

Community support is defined as assistance of various types exchanged between neighbors.<sup>3</sup> According to ecological systems theory, social networks include work, family, and community microsystems, with resources from one system transferrable to the other two systems.<sup>11</sup> Neighborhood frequently complements residents' network that exists in their residential environment.<sup>6</sup> Neighbors' close spatial position makes them uniquely poised to help each other, both instrumentally and emotionally.<sup>12</sup>

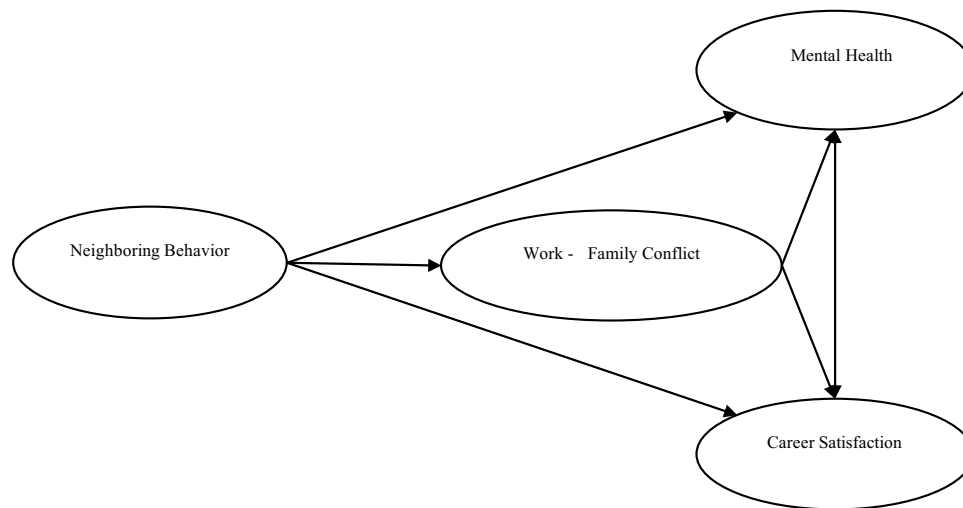
It is a bidirectional rather than a unidirectional process to develop and maintain a social relationship. It yields an insufficient insight into the impacts of neighboring behavior on personal consequences to examine only one side of community support.<sup>13</sup> Receiving helping from neighbors may supply low-income employees with external resources to deal with pressured events.<sup>3</sup> Helping neighbors may enhance both cognitive and emotional regulation abilities in low-income employees, increasing their ability to cope with stress and to improve themselves, both in family and at work.<sup>14</sup> Beyond the unidirectional received neighboring support, Perkins (1990)<sup>13</sup> put forward the concept of neighboring behavior,

referring to the extent to which residents take participation in their lived communities through giving and receiving assistance. In this vein, this study's first research question is to examine the influences of supportive neighboring behavior on mental health and career satisfaction.

Mental health refers to disorders that influence mood, thinking, and behavior (5rd ed., rev.; DSM-V-R<sup>15</sup>). Career satisfaction is defined as employees' assessment of their career progress, achievements, and anticipated outcomes, relative to their own goals and aspirations.<sup>16</sup> Good mental health and career satisfaction have been regarded as desired outcomes in family and work domains.<sup>17</sup> Thus, it is worth examining the spillover influences of supportive neighboring behavior on these two variables.

Furthermore, this study's second research question is to get deeper insights into mechanisms that link supportive neighboring behavior, mental health, and career satisfaction. In the past few years, the rise in dual-earner households has led to an increase in the number of employees who intertwine work with domestic roles.<sup>18</sup> When stress from both work and family is mutually incompatible with each other, work-family conflict arises, which conflicts between family and work roles.<sup>19</sup> Work-family conflict is associated with damaged self-images in work and family domains, which are basic ingredients of an adult's identity, resulting in mental health decline and career dissatisfaction.<sup>20</sup> In this vein, we examine family interference with work (FIW) and work interference with family (WIF), which are dimensions of work-family conflict,<sup>21</sup> as mediators to evaluate how the resources from community microsystem spill over into family and work microsystems.

We adopted a two-wave longitudinal design to collect data from Chinese low-income employees to evaluate the conceptual model (see Figure 1). The current study was to explore the impacts of supportive neighboring behavior on mental health and career satisfaction. Further, we unveiled the mediating roles of family interference with work and work interference with family in the relationships among supportive neighboring behavior, career satisfaction and mental health. In doing so, our research provided two contributions to current research. First, our study introduces a unique approach by incorporating bidirectional supportive neighboring behavior as a critical antecedent to fostering good mental health and career satisfaction, beyond the effects of received neighboring behavior as explored in unidirectional studies. Second, this study uncovers the spillover mechanisms (work interference with family and family



**Figure 1** Conceptual model of relevance among neighboring behavior, work–family conflict, mental health and career satisfaction.

interference with work) through which supportive neighboring behavior influences family and work outcomes.

## Materials and Methods

### Data Collection and Samples

We first developed a subject pool of 317 employee with incomes less than 28,000 Chinese yuan in 2018, an average yearly income for urban residents in Heilongjiang Province, China. All respondents were at least the age of 18, with a regular work (40 hours per week) and they must have lived in their present communities in Heilongjiang Province for over one year.

Paper-based survey data collection occurred in two waves at the first week of November and the second week of December in 2018, respectively. We adopted demographic information, work–family conflict (including work interference with family and family interference with work) and supportive neighboring behavior in the first wave. Five weeks later, we collected mental health and career satisfaction in the second wave. The criterion for the validity of the questionnaire is that the participants have completely participated in the two surveys, and there is no obvious rule for the questionnaire. For example, answering a questionnaire showing a “Z” shape change trend, or all items in the entire questionnaire are selected same option, will be rejected.

### Measures

All the scales in our study were chosen from top peer-reviewed English journals. A back-translation procedure was followed to translate them into Chinese.<sup>22</sup>

1. Supportive neighboring behavior. We used all ten items from Perkins et al<sup>13</sup> to measure supportive neighboring behavior. This scale contained two dimensions: given neighboring behavior and received neighboring behavior. Sample items for each subdimension were “lend a hand to your neighbors when they are in emergency” and “receive advice from neighbors to solve a personal problem”. In this study, we measure like the original scale, a five-point Likert scale was used with 1 indicating “low frequency” and 5 indicating “high frequency”. This scale yielded a Cronbach’s  $\alpha$  score of 0.90. Higher scores indicate more frequent supportive neighboring behavior.
2. Work–family conflict. We selected two distinct dimensions of work-family negative spillover and measured by an 8-item scale validated by Grzywacz and Marks,<sup>21</sup> i.e., “family interference with work” (FIW) and “work interference with family” (WIF). Follow the original measurement method of the scale, using a five-point Likert scale (1 = never; 5 = all the time). A sample item for family interference with work was “stress at home makes you irritable at work”, and a sample item for work interference with family was “stress at work makes you irritable at home”. The Cronbach’s alpha score for family interference with work and work interference with family were both 0.96 for this scale. A higher score indicates a stronger conflict.
3. Mental health was measured using the original 12-item general health questionnaire (GHQ) developed

by Goldberg and Hiller<sup>23</sup> and developed by Gao et al<sup>24</sup> in Chinese samples. Sample items were “I have loss of sleep because of worrying” (depression and anxiety), “I am able to concentrate” (social dysfunction) and “I am usually thinking that I am self-worthless” (loss of confidence). GHQ was altered into a five-point Likert scale (1 = never; 5 = all the times). Higher scores indicate worse mental health. The Cronbach’s alpha for this scale was 0.93.

4. Career satisfaction was selected a 3-item sub-scale developed by Martins et al,<sup>25</sup> using a five-point Likert scale as well as the original (1 = strongly disagree; 5 = strongly agree). A sample item was “in general, I was satisfied with my career status”. The Cronbach’s alpha for this scale was 0.93. A higher score indicates greater career satisfaction.

## Analyses Methods

Cronbach’s alpha is used to measure the “sum” reliability of a group of synonymous or parallel measurement tools, and is a necessary tool for assessing the reliability of a questionnaire.<sup>26</sup> Cronbach’s Alpha is currently the most widely used reliability assessment tool in the development and use of scales in related fields such as psychology or education. The data in this research relates to the field of psychological and behavioral research, and participants samples are collected by using two-wave data collection methods.<sup>27</sup> On this basis, this paper uses Cronbach’s Alpha to measure the reliability of the questionnaire.

Common method variance (CMV) refers to the artificial covariation between predictor variables and criterion variables attributable to the same source or rater, the same measurement environment and project context. This artificial covariation severely confuses the research results and potentially misleads the conclusions, reducing the reliability of the data. However, in some research on organizational psychology, we observed that the 2-wave method can effectively reduce CMV.<sup>28</sup> Moreover, Chan et. al (and Wilkie et. al’s study also confirmed that mental health is likely to change on a monthly basis.<sup>29,30</sup> Given that other scholars have conducted causal inferences about mental health and other related variables based on the 2-wave method to varying degrees, this paper employed the 2-wave method to process data.<sup>31,32</sup> Provided that the data was collected through self-reported questionnaire, we adopted confirmatory factor analysis (CFA) to test the possible influences of CMV, using R (Version 3.5.3) and Lavaan Package (Version 0.6–3).

Supportive neighboring behavior and mental health both had multiple dimensions, we conducted the second-order CFA to explore the second-order latent factors. For example, the items were loaded on “given neighboring behavior” and “received neighboring behavior” at first, then these two factors were loaded on the latent variable “supportive neighboring behavior”. Furthermore, we adopted a structural equation modeling (SEM) to examine our hypotheses by R (Version 3.5.3) and Lavaan Package (Version 0.6–3). To test the indirect and direct effects, we used a bootstrapping method to generate the 95% confidence interval (CI) with 20,000 replications.

## Results

In the end, 220 matched samples were eligible for analysis and the effective response rate was 69%. Respondents worked in diverse industries in mainland China (e.g., the construction industry, manufacturing, and electronics). On average, respondents were 41.26 years old (standard deviation = 9.60); 41.4% were males (standard deviation = 0.49), and 78.7% were married (standard deviation = 0.41). As to education level, 19.1% were senior school and below; 38.6% were high school; 22.7% were college; 15.9% were bachelor; and 3.7% were masters or above.

## Confirmatory Factor Analysis

Results of confirmatory factor analysis indicated that the five-factor expected model had an acceptable fit ( $\chi^2(480)=1107.42$ , root-mean-square error of approximation (RMSEA) =0.08, root mean square residual (RMR) =0.070, comparative fit index (CFI) =0.90).

## Descriptive Statistics

Table 1 shows the results of mean, standard deviation and correlations among all studied variables. Supportive neighboring behavior was associated with decreased family interference with work ( $r = -0.34, p < 0.01$ ), work interference with family ( $r = -0.42, p < 0.01$ ), and poor mental health ( $r = -0.51, p < 0.01$ ) and increased career satisfaction ( $r = 0.30, p < 0.01$ ). Family interference with work was associated with increased poor mental health ( $r = 0.41, p < 0.01$ ) and decreased career satisfaction ( $r = -0.37, p < 0.01$ ). Work interference with family was associated with increased poor mental health ( $r = 0.41, p < 0.01$ ) and decreased career satisfaction ( $r = -0.27, p < 0.01$ ). Poor mental health was associated with decreased career satisfaction ( $r = -0.70, p < 0.01$ ).

Further, we conducted an independent *T*-test and one-way ANOVA test based on demographic variables, the results of

**Table 1** Mean, Standardized Deviance, and Correlations

Variables	1	2	3	4	5	6	7	8	9
1. Gender									
2. Age	0.12								
3. Marital	0.08	-0.39**							
4. Education	-0.08	-0.40**	0.14*						
5. Neighboring behavior	0.04	-0.02	0.16*	0.24**	(0.90)				
6. FIW	0.06	0.34**	-0.07	-0.52**	-0.34**	(0.96)			
7. WIF	0.02	0.16*	-0.04	-0.21**	-0.42**	0.33**	(0.96)		
8. Mental health	0.06	0.11	-0.06	-0.40**	-0.51**	0.41**	0.41**	(0.93)	
9. Career satisfaction	-0.12	-0.07	0.08	0.22**	0.30**	-0.37**	-0.27**	-0.70**	(0.93)
Mean	1.59	41.26	1.21	3.46	1.87	3.45	2.52	2.85	3.40
SD	0.49	9.60	0.41	1.08	0.60	1.09	0.95	0.82	1.07

**Notes:** Values in the parenthesis are Cronbach's alpha. \* $p < 0.05$ ; \*\* $p < 0.01$ .

**Abbreviations:** FIW, family interference with work; WIF, work interference with family; SD, standard deviation.

which are shown in Table 2. Focal variables showed no significant differences between female and male. Married low-income employees had higher scores of supportive neighboring behaviors than single employees ( $T = -2.36, p < 0.05$ ). Higher education levels (bachelor above) correlated with higher supportive neighboring behavior ( $F = 6.81, p < 0.01$ ), better career satisfaction ( $F = 4.82, p < 0.01$ ), lower mental health ( $F = 13.53, p < 0.01$ ) and lower work-family conflict ( $F_{FIW} = 37.48, p < 0.01$ ;  $F_{WIF} = 3.37, p < 0.01$ ).

### Results of Structural Equation Modeling

Results of structural equation modeling were shown in Figure 2. We found that supportive neighboring behavior decreased family interference with work ( $\beta = -0.32, p < 0.01$ ) and work interference with family ( $\beta = -0.41, p < 0.01$ ). Family

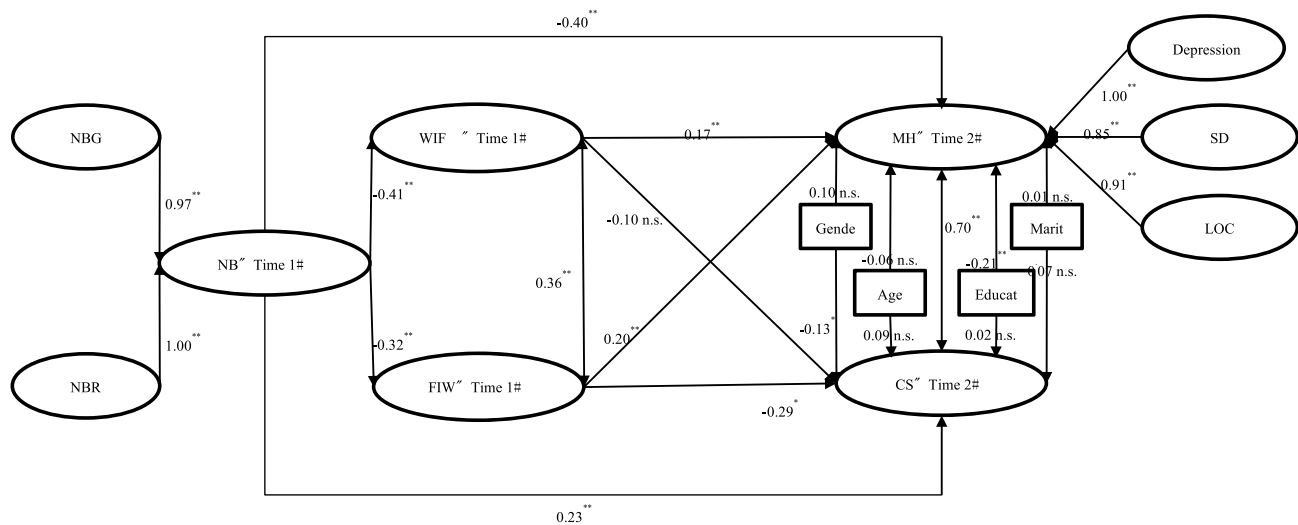
interference with work increased poor mental health ( $\beta = 0.20, p < 0.01$ ) and decreased career satisfaction ( $\beta = -0.29, p < 0.01$ ). Work interference with family increased poor mental health ( $\beta = 0.17, p < 0.01$ ) and decreased career satisfaction ( $\beta = -0.10, p < 0.01$ ). The direct relationships between supportive neighboring behavior, mental health ( $\beta = -0.40, p < 0.01$ ), and career satisfaction ( $\beta = 0.23, p < 0.01$ ) were significant.

Results in Table 3 showed that the direct effect of supportive neighboring behavior was significant, both for mental health (Effect=-0.42, 95% CI= [-0.53, -0.32]) and for career satisfaction (Effect=0.28, 95% CI= [0.16, 0.41]). The indirect effects of supportive neighboring behavior on mental health were significant both through family interference with work (Effect=-0.10, 95% CI= [-0.15, -0.05])

**Table 2** Demographic Characteristics of Variables

	Group	N	Neighboring Behavior		Mental Health		Career Satisfaction		Family Interfere Work		Work Interfere Family	
			Mean	T/F	Mean	T/F	Mean	T/F	Mean	T/F	Mean	T/F
Gender	Male	91	1.85	-0.53	2.79	-0.93	3.55	1.81	3.37	-0.95	2.49	-0.35
	Female	129	1.89		2.90		3.29		3.51		2.54	
Marital status	Married	173	1.82	-2.36*	2.88	0.92	3.35	-1.20	3.49	0.98	2.54	0.54
	Unmarried	47	2.05		2.76		3.56		3.31		2.45	
Education	Senior school and below	42	1.86	6.81**	3.06	13.53**	3.29	4.82**	3.76	37.48**	2.67	3.37*
	High school	85	1.73		3.14		3.18		3.94		2.65	
	College	50	1.78		2.79		3.34		3.52		2.55	
	Bachelor	35	2.20		2.17		4.05		1.98		2.04	
	Masters or above	8	2.50		2.11		3.75		2.63		2.16	

**Notes:** \* $p < 0.05$ ; \*\* $p < 0.01$ .



**Figure 2** Conceptual model and results of relevance among neighboring behavior, work-family conflict, mental health and career satisfaction, with standardized beta weights. **Notes:** \* $p < 0.05$ ; \*\* $p < 0.01$ ; Model fit:  $\chi^2(604) = 1367.52$ , the root mean square error of approximation (RMSEA) = 0.07, the comparative fit index (CFI) = 0.90, the Tucker–Lewis index (TLI) = 0.90, the standardized root mean square residual (SRMR) = 0.07. **Abbreviation:** NBG, given neighboring behavior; NBR, received neighboring behavior; NB, neighboring behavior; WIF, work interference with family; FIW, family interference with work; MH, mental health; CS, career satisfaction; SD, social dysfunction; LOC, loss of confidence.

and work interference with family (Effect=−0.05, 95% CI= [−0.15, −0.05]). The indirect effect of supportive neighboring behavior on career satisfaction was significant through family interference with work (Effect=0.10, 95% CI= [0.04, 0.15]).

## Discussion

### Theoretical Implications

The present study provided empirical evidence for the impacts of supportive neighboring behavior on mental health and career satisfaction. Previous research had mainly focused on the impact of received community support from neighbors on family and work outcomes (e.g., work–family conflict, job satisfaction and family performance)<sup>3,33</sup>. This research extends this line of research by examining the influences of bi-

directional, rather than uni-directional, supportive neighboring behavior since the establishment and maintenance of social relationships is an exchange process.<sup>34</sup> Only with the transfer of mutual aid between neighbors can a reciprocal relationship develop.<sup>34</sup> Previous research revealed that social relationships provide essential social resources for individuals to cope with stressful events<sup>35</sup> and improve themselves.<sup>36</sup> Given the scarce economic resources available to low-income employees, social resources are relatively important for them.<sup>3</sup>

In addition, we further explore how community-based social relationships influence low-income employees’ family and work outcomes. Received support from neighbors helps low-income employees cope with potentially conflicting work-family demands.<sup>3</sup> Giving support to neighbors helps low-income employees increase cognitive ability and

**Table 3** Result of Bootstrapping Test

Path	Effect	SE	95%LLCI	95%ULCI
Indirect Effect				
Neighboring Behavior → Work Interference with Family → Mental Health	−0.05	0.03	−0.09	−0.01
Neighboring Behavior → Family Interference with Work → Mental Health	−0.10	0.02	−0.15	−0.05
Neighboring Behavior → Family Interference with Work → Career Satisfaction	0.10	0.03	0.04	0.15
Direct Effect				
Neighboring Behavior → Mental Health	−0.42	0.05	−0.53	−0.32
Neighboring Behavior → Career Satisfaction	0.28	0.06	0.16	0.41

**Abbreviations:** SE, standard error; LLCI, lower limit confidence interval; ULCI, upper limit confidence interval.



emotional well-being.<sup>14</sup> Moreover, both received and given neighboring behavior have long-lasting effects on social relationships between neighbors, providing low-income employees with ongoing social resources for maintaining good mental health<sup>37</sup> and achieving career satisfaction in the workplace.<sup>35</sup>

By examining the mediation effect of both family interference with work and work interference with family, this research reveals the underlying mechanism through which career satisfaction and mental health are impacted by supportive neighboring behavior. Work–family conflict arises from incompatible stressors from work and family. For work interference with family, when employees are overly engaged in their work roles, they have reduced resources and time to fulfil their family roles.<sup>38</sup> In this context, received neighboring behavior could directly offer low-income employees social resources to deal with family demands.<sup>3</sup> Also, given neighboring behavior would enhance their cognitive information processing ability to solve other life problems, as well as enhancing their emotional regulation ability to better cope with family life.<sup>14</sup> Cognitive information processing and emotional regulation are both critical to family roles and responsibilities, as well as to improve mental health.

Low-income employees have higher risks to experience domestic issues,<sup>39</sup> leading to depletion of personal time and energy. Moreover, domestic issues spill over into work, resulting in maladaptive work behaviors,<sup>40</sup> finally resulting in family interference with work. As in the above arguments, low-income employees might acquire support from social networks outside the work and family domains.<sup>41</sup> For instance, women from low-income families rely heavily on neighbors for assistance with child-care and transportation,<sup>3</sup> which may be associate with reduced family interference with work. On the other hand, given neighboring behavior is a process through which low-income employees help others solve problems, which in turn enhances cognitive information processing abilities and rewards them with positive emotions.<sup>42</sup> In this vein, helping neighbors also helps low-income employees to acquire necessary resources to reduce influences of family interference with work, consequently improving their good mental health and career satisfaction. Bidirectional supportive neighboring behavior enhances low-income employees' social cohesion, which is examined as a buffer of work interference with family and family interference with work, further enhancing good mental health and career satisfaction.

## Practical Implications

This study also provides several practical implications. This study held that supportive neighboring behavior could enable individuals to obtain social support from informal organizations and non-work sources, which would have a positive effect on individuals' psychological and behavioral formation to a certain extent. Neighborhood frequently complements residents' network that exists in their residential environment.

However, we posit that this behavior will not replace redistribution or reduce the social endeavor of low-income groups. This is because supportive neighboring behavior only provides individuals with a new path to obtain social capital, but this process may be indirect and slow. An individual's long-term social endeavor lays the foundations for shaping an individual's working conditions and living standards, where as the redistribution is the critical decision for the government to readjust factor-based income. These are long-term, irreplaceable means to adjust the income level of low-income groups.

Low-income employees should avoid social comparison and participate in social activities. They could develop beneficial personal social relationships through helping neighbors. Community managers should recruit skilled social workers, who can organize appealing and beneficial activities to improve social cohesion within a community. Overall, an amicable community climate motivates residents to interact with each other, facilitating recovery from stressful events.

## Conclusion

This study of Chinese low-income employees attempted to explore the influences and underlying mechanisms of supportive neighboring behavior on mental health and career satisfaction. As expected in the conceptual model, supportive neighboring behavior has significant direct influences on mental health and career satisfaction. Furthermore, family interference with work mediates the indirect impacts of supportive neighboring behavior on mental health and career satisfaction. Work interference with family mediates the indirect influence of supportive neighboring behavior on mental health.

Our research has some limitations, guiding the direction for future research. First, we could not confirm causal relationships between our focal variables. Although a two-wave longitudinal design is beneficial for inferring causal effects of supportive neighboring behavior on mental health and career

satisfaction, we cannot avoid the potential of a reversed causal relationship.<sup>33</sup> Regarding the measurement method of the conversion scale, although we have adopted an adapted method, there may be slight measurement deviations. For future research, a multi-wave cross lagged analysis and a field experiment can be adopted to establish a firm causal effect of supportive neighboring behavior. Second, we could not rule out CMV. The results of CFA showed that CMV was not a serious problem in our research. However, it would be better to use multi-source data in future research. Third, our research is performed in a Chinese context. Supportive neighboring behavior, a core dimension of community social climate, varies between cultures.<sup>43</sup> Future research may re-examine our research model in other cultures and other income classes, offering a cross-cultural understanding of the influences of supportive neighboring behavior.

## Approval of the Research Protocol

All procedures performed in studies involving human participants were in accordance with the ethical standards of the Ethics Committee of Kunming University of Science and Technology and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

## Consent for Publication

Informed consent was signed and obtained from all individual participants included in the study.

## Informed Consent

All study participants provided informed consent.

## Author Contributions

All authors made substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data; took part in drafting the article or revising it critically for important intellectual content; gave final approval of the version to be published; and agree to be accountable for all aspects of the work.

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## Disclosure

The authors declare no conflicts of interest for this article.

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