

# Impact of a Chaxu Atmosphere on Nurses' Organizational Responsibility behavior—The Mediating Roles of Envy and Silence

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**Background:** Chaxu atmosphere refers to the degree of differences, like the ripple effects in water, of the association between group members and the leader of the group resource. Unlike Western culture, China's nurses have been working in Chaxu atmosphere, which may boost their negative emotion and influence their workplace behavior.

**Purpose:** This study aimed to clarify the chain-mediating role of envy and silence in the association between Chaxu atmosphere and organizational responsibility behavior.

**Methods:** A cross-sectional online survey was conducted, and a multistage stratified sampling method was employed to collect data. The study was conducted from September to October 2020 in China. Totally, 1740 nurses were recruited, and 1221 valid responses were collected. Socio-demographic factors, Chaxu atmosphere, employee envy, employee silence, and organizational responsibility behavior were assessed using questionnaires that included the Chaxu Atmosphere Scale, Employee Envy Scale, Employee Silence Scale, and Organizational Responsibility Behavior Scale. Hierarchical multiple regression was used to identify clusters of interrelationships among Chaxu atmosphere, envy, silence, and organizational responsibility behavior in nursing settings.

**Results:** Though the Chaxu atmosphere did not directly influence the organizational responsibility behavior of Chinese nurses, its effect is mediated by a chain of envy and silence. First, Chaxu atmosphere evoked envy in the nurses ( $\beta = -0.040$ ,  $P < 0.001$ ), thereby leading to decreased organizational responsibility behavior. Second, the Chaxu atmosphere promoted silence toward organizational issues ( $\beta = -0.057$ ,  $P < 0.001$ ), resulting in decreased organizational responsibility behavior. Third, the Chaxu atmosphere evoked envy in the nurses, which contributed to the formation of silence ( $\beta = -0.025$ ,  $P < 0.001$ ), resulting in a further decrease in organizational responsibility behavior.

**Conclusion:** Nurses working in a high-level Chaxu atmosphere are prone to remaining silent on critical organizational issues due to increased envy, which subsequently reduces their organizational responsibility behavior. A better understanding of the association between the Chaxu atmosphere and workplace behavior will help nursing managers to foster harmonious relationships between nurses and their teams and to improve each individual's organizational responsibility behavior.

**Keywords:** nurses, Chaxu atmosphere, organizational responsibility behavior, chain-mediating

## Introduction

Good service quality contributes to the improvement of a hospital's reputation and is vital not just for satisfying patients, but also for attracting excellent healthcare staff and recruiting new practitioners.<sup>1</sup> Organizational responsibility behavior is one

of the strongest predictors of job performance in the workplace.<sup>2,3</sup> Nurses' responsible behavior toward the organization—as guided by their conscientiousness—is beneficial both for patients and the healthcare organization.<sup>4</sup> Responsible behavior is positively associated with reduced negative emotions and medical errors, an increase in nurses' positive emotions, workplace happiness,<sup>5</sup> and improved service quality and patient satisfaction.<sup>6</sup> Nurses' behaviors are largely determined by personality traits,<sup>7</sup> the leadership style of supervisors and managers,<sup>8</sup> and organizational transformation and organizational culture,<sup>9</sup> as observed in diverse occupational climates.<sup>10</sup> Increasingly, Chinese organizational studies are paying attention to the Chaxu atmosphere due to its significant effects on employees' emotions, occupational attitudes, and behaviors.<sup>11</sup> More importantly, it is critical to determine how a Chaxu culture affects nurses' organizational responsibility behavior, for healthcare organizations to survive and flourish. Therefore, a better understanding of the factors that influence nurses' organizational responsibility behavior and how these factors are related is necessary and significant from the theoretical and practical perspectives.

## What is a Chaxu Atmosphere?

Unlike in other cultures, China has a unique culture surrounding social relationships, which Chinese sociologist Xiao Tong Fei referred to as “Chaxu Geju” (差序格局),<sup>12</sup> also called “differentiated modes of association” and “Guanxi.”<sup>13,14</sup> This concept is receiving increasing attention among Chinese scholars<sup>15</sup> and “Chaxu Geju” is regarded as the dominant principle in understanding interpersonal communication among the Chinese people, which is unlike Western relationships. It likens interpersonal communication among the Chinese to ripples in water: the more distant the relationship, the weaker it becomes. That is, people adopt different principles of interpersonal interaction to engage with different individuals,<sup>16</sup> leading to a Chinese changeless social interaction culture, and further shaping the special “Chaxu atmosphere” in Chinese workplaces.<sup>16,17</sup>

The Chaxu atmosphere is considered to encompass the localization principles governing interpersonal relationships (Guanxi关系) in Chinese organizations, and is characterized by power and superiority, differential treatment, the allotment of resources to private organizations, circle or “Guanxi” culture, mutual social exchange, and the dynamic nature of relationships.<sup>11</sup> It may be alternatively

referred to as Chaxu climate, “Guanxi” climate, differential atmosphere, and error routine atmosphere, among others. Chaxu climate (the phenomenon of “Guanxi” circles) can be regarded as an ego-centered “Guanxi” network with a powerful individual at the center.<sup>18</sup> Chaxu atmosphere also refers to the degrees of difference in the associations between group members who surround a central controller or leader.<sup>11</sup> Witnessing and experiencing the Chaxu atmosphere as a result of leadership behaviors in daily management can influence an array of work variables such as proactive change behavior,<sup>19</sup> innovation behavior,<sup>20</sup> affective commitment,<sup>21</sup> and employee silence,<sup>22</sup> ultimately affecting employees' occupational well-being.<sup>23</sup>

In an organization with Chaxu atmosphere, group members are classified either as in-group and out-group by leaders, who assign scarce resources to members using a differential approach based on the degree of closeness of their relationship with the concerned member.<sup>16</sup> As a product of Chinese culture, the Chaxu atmosphere is not consistent with leader–member exchange differentiation,<sup>24</sup> as it places emphasis on private relationships between subordinates and superiors outside the workplace, which then influences relationships within the workplace.<sup>25</sup> In the circle culture context, a circle supervisor and subordinate group members conduct continual exchange activities to achieve their private goals in daily life; they need to actively balance their own interests with the interests of groups outside the “Guanxi” circle in order to maintain a harmonious relationship with the larger network.<sup>16</sup> Previous studies have revealed that the Chaxu atmosphere has a negative impact on organizations,<sup>26</sup> including weakening the cohesiveness of the group and organizational attributions, hindering knowledge sharing and team cooperation,<sup>27</sup> and reducing innovative performance,<sup>28</sup> this atmosphere also results in decreased job satisfaction and job performance,<sup>28</sup> greater turnover intention, and decreased organizational commitment and organizational citizenship behavior.<sup>29</sup>

In China, workers often own a couple of ego-centered “Guanxi” networks<sup>16</sup> with different properties. However, it is unclear how subordinates' perceived “Chaxu atmosphere” influences nurses' organizational behavior. Although previous studies have confirmed that the Chaxu atmosphere has an important influence on overall organizational operation and performance,<sup>30</sup> the relation between the Chaxu atmosphere and the demonstration of responsible behavior by Chinese nurses and its functional

mechanism remains unclear. Further, little attention has paid given to the impact of the Chaxu atmosphere on personal psychology and behavior, especially in the nursing profession.

## The Relationships Among a Chaxu Atmosphere, Envy, Silence, and Organizational Responsibility Behavior

Envy is an undesirable and toxic emotion that may result in harmful outcomes for both those who are envious and for those that they envy.<sup>31</sup> This emotion is associated with strong tendencies toward negative actions, such as aiming to destroy the objects of envy or keeping silent on critical work issues. Since employees do not work in a vacuum, their attitudes and behaviors may be shaped by both individual emotions and organizational atmospheres, based on their individual perceptions. Envy is a negative feeling that is common across cultures, and may arise due to frequent social comparison.<sup>32</sup> A Chaxu environment increases opportunities for nurses to compare themselves with others, which may potentially make them feel envious if they perceive unfairness or discrimination.<sup>33</sup> This in turn may lead to decreased organizational responsibility behavior.

From the theory of “Chaxu Geju,”<sup>34</sup> we can infer that an obvious Chaxu atmosphere in an organizational team may result in feelings of marginalization among the vast majority of “outsiders” who are far from the core leaders, resulting in negative emotions such as envy or reduced expectations regarding fairness,<sup>35</sup> all of which will lead to counterproductive workplace behaviors.<sup>36</sup>

Considering that supervisors possess the most authority in assigning tasks and resources, nurses who have experienced working in a Chaxu climate may be prone to developing a sense of unfairness regarding the process of allocation of support and resources,<sup>37</sup> further resulting in feelings of workplace ostracism and relative deprivation.<sup>38</sup> As a result, “outsiders” perform only in-role duties following their job description, in a calculative and selfish fashion, which, in turn, leads to reduced organizational responsibility behavior.

Aside from envy, remaining silent or withholding ideas on critical issues is also an important and common choice that employees make. If a primary supervisor behaves unfairly toward a subordinate, employees may see themselves as victims and protect their self-esteem by remaining silent on critical issues.<sup>31</sup> Silence, as

defined by Kish-Gephart and Soignet, (2013) refers to the withholding of ideas, suggestions, or concerns about leadership, processes, or the organization. Based on previous evidence, employee envy may independently mediate the association between organizational atmosphere and organizational responsibility behavior.<sup>37,39</sup> Furthermore, employee silence may independently mediate the relationship between employee envy and organizational responsibility behavior.<sup>39</sup>

According to the trait activation theory,<sup>33</sup> having a Chaxu atmosphere as an organizational climate tends to trigger both the individual and combined mediating roles of envy and silence in the relationship between a Chaxu atmosphere and organizational responsibility behavior. Envy and silence may provide important insights into organizational responsibility behavior when the interpersonal Chaxu atmosphere of an organization is obvious.<sup>22</sup> In the present study, we attempt to confirm whether an organizational Chaxu atmosphere has adverse effects on fostering and enhancing employees’ organizational responsibility behaviors, and whether envy and silence play a mediating role in this relationship.

## Aims

The aims of this study were to (1) assess the current status of a perceived Chaxu atmosphere among Chinese nurses and differences in this perception based on socio-demographic factors; (2) identify the interrelationships between Chaxu atmosphere, envy, silence, and organizational responsibility behavior in nursing settings; (3) clarify the mediating roles of envy and silence in the relationship between a Chaxu atmosphere and organizational responsibility behavior.

## Methods

### Subjects and Procedures

We used both multistage stratified sampling and convenience sampling methods to collect data. The Chinese mainland consists of 32 provinces, which are divided into five regions according to geographical location: the eastern, western, southern, northern, and central regions. In each region, 20 cities were randomly selected. A total of 1740 nurses from 100 cities across 31 different provinces were randomly selected to participate in the study. The nurses were asked to complete an anonymous online survey between September and October 2020. In the second stage of sampling, nurses’ teachers assisted

us in obtaining contact information and informed consent for 100 appointed nurses from different cities. These nurses were then asked to deliver the questionnaires to 10–20 other nurses. Each selected nurse was invited to click on a webpage link (<https://www.wenjuan.com/>) to access a self-administered questionnaire. Subsequently, the webpage link was sent by these nurses to other nurses via mobile phones.

The purpose and significance of this study were explained on the first page of the questionnaire. The participants' progress in the survey was monitored by the authors. We checked the accuracy and completeness of the data and excluded questionnaires that did not meet the criteria. The two authors checked the consistency of all data.

Of the 1740 nurses who completed the questionnaires, 1221 questionnaires were accepted as valid, resulting in an effective completion rate of 70.13%. The distribution of demographic variables (gender, age, and level of education) of the representative group of nurses is comparable to that of the general population of registered Chinese nurses. The inclusion criteria were: (1) questionnaires that took > 5 min to answer (the minimum answering time was 5 minutes in the preliminary investigation); (2) being a registered nurse; (3) being currently working as a nurse; and (4) consent and voluntary participation in the current study.

## Measures

### Measurement of Demographic Characteristics

In the current study, information for four demographic variables were collected—gender, age, marital status, and educational level. Marital status was divided into three categories: unmarried, married, and divorced or widowed. Options for educational level included “technical secondary school or below,” “college degree,” “bachelor's degree,” and “master's degree or above.”

### Measurement of Job Characteristics

Four variables were utilized to assess job characteristics: monthly income, professional category, job tenure, and work shift. The professional categories were “nurse,” “nurse practitioner,” “nurse-in-charge,” and “associate senior nurse /senior nurse.” Participants were asked if they had worked night shifts (response options: “yes” or “no”). Monthly income (RMB) was categorized into the following groups: “3000 yuan or below,” “3001–5000 yuan,” “5001–7000 yuan,” “7001–9000 yuan,” and “9001 yuan or above.”

### Measurement of Chaxu Atmosphere

The Chinese version of the Chaxu Atmosphere Scale was used.<sup>25</sup> It includes 11 items developed by Liu Jun and has previously been proven to have good reliability and validity in the Chinese context.<sup>25</sup> Responses were graded on a five-point Likert scale (ranging from 1 = strongly disagree, to 5 = strongly agree). Sample items included “Makes negative comments about me to others.” The total score ranged from 11 to 55. A higher score reflected a higher Chaxu atmosphere among nurses. In this study, the Cronbach's alpha coefficient was 0.95.

### Measurement of Nurse Envy

Employee envy was measured using a five-item scale developed by Vecchio,<sup>40</sup> which has been widely used in the Chinese context. Responses were graded on a five-point Likert scale (ranging from 1 = strongly disagree, to 5 = strongly agree). Sample items included “My supervisor values the efforts of others more than she/he values my efforts,” “It is somewhat annoying to see others have all the luck in getting the best assignments,” “I don't know why, but I usually seem to be the underdog at work,” “I don't imagine I'll ever have a job as good as some that I've seen,” and “Most of my coworkers have it better than I do.” A higher score reflected higher envy among nurses. The scale had excellent internal consistency, with an overall Cronbach's alpha of 0.853 in this study.

### Measurement of Nurse Silence

The five-item employee silence scale developed by Tangirala and Ramanujam (2008) for general employees was used in this study.<sup>41</sup> The Chinese version of the employee silence scale was revised and translated by Li et al.<sup>42</sup> Responses were evaluated using a six-point Likert scale (ranging from 1 = not at all, to 6 = very frequent). A higher score reflected a higher level of nurses' silence on critical work issues. Sample items included “Although I had ideas for improving my work, I did not speak up” and “I chose to remain silent when I had concerns about my work.” The scale had excellent internal consistency, with a Cronbach's alpha of 0.839 for this study.

### Measurement of Nurses' Organizational Responsibility Behavior

Nurses' organizational responsibility behavior was measured using a four-item scale developed by Far,<sup>43</sup> which was translated into Chinese by Rui et al<sup>44</sup> and had good reliability and validity in the Chinese context. Responses were evaluated using a five-point Likert scale (ranging from

1 = strongly disagree, to 5 = strongly agree). Sample items included “Willing to work overtime even without extra pay” and “I can work responsibly under any circumstances.” A higher score reflected higher organizational responsibility behavior in nurses. In the current study, the Cronbach’s alpha coefficient for the scale was 0.778.

## Data Analysis

### Preliminary Analyses

Statistical significance was considered based on a two-tailed  $p$ -value  $< 0.05$ . All analyses were conducted using SPSS version 22.0 (IBM, BM SPSS Statistics for Windows). Socio-demographic differences in the variables were examined using the independent  $t$ -test and one-way analysis of variance (ANOVA) with the least-significant-difference tests (LSDs). We used Pearson’s correlation coefficient to examine the correlations among the variables—Chaxu atmosphere, envy, silence, and organizational responsibility behavior.

### Chain-Mediation Analysis

A series of hierarchical regression analysis was conducted to test the chain-mediation effects of silence and envy. The chain intermediary mechanism was analyzed using the SPSS macro PROCESS provided by Preacher and Hayes,<sup>45</sup> specifically Model 6 2 mediators, (Hayes, 2013) as shown in Figure 1. All related analyses were subjected to bootstrapping (5000 bootstrap samples) using 95% confidence intervals (CIs). The macro PROCESS was used to calculate and test the direct and indirect effects.

## Ethical Considerations

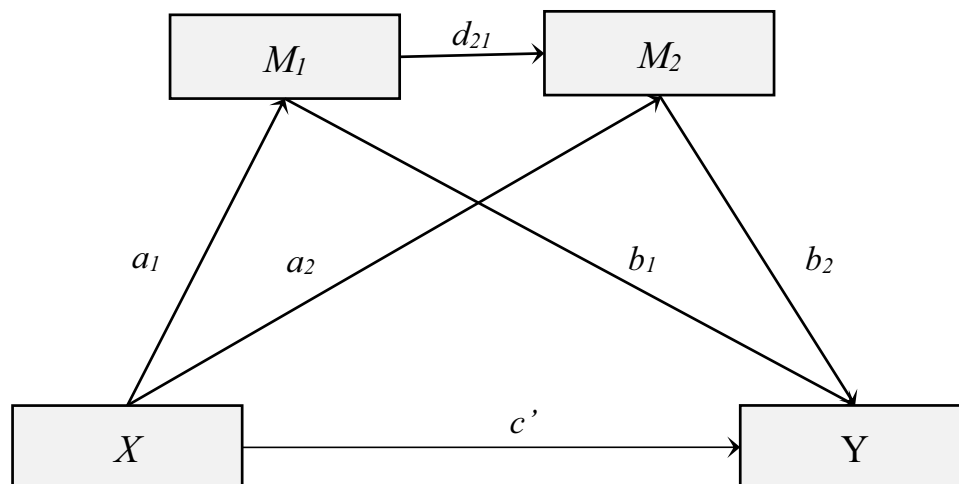
The research was conducted as per the guidelines of the Declaration of Helsinki, and approved by the Institutional Review Board of Harbin Medical University. An electronic informed consent form approved by the Institutional Review Board of Harbin Medical University was included at the beginning of the questionnaire. Completing the questionnaire was, therefore, considered as providing “informed consent” for participation in the survey.

## Results

### Demographic Characteristics of the Sample

Participants’ demographic characteristics are presented in Table 1. Their age ranged from 20 to 60 years. Female participants comprised 92.79% of the sample. Most (72.23%) participants had attained a bachelor’s degree or above. Of the 1221 nurses sampled, 45.78% were unmarried, 52.74% were married, and 1.47% were either divorced or widowed. Further, approximately 33.01% belonged to the primary professional category “nurse.” A total of 584 (47.83%) participants had worked for less than 6 years, and 75.84% reported that they had completed night shifts at work. Moreover, 27.19% had a monthly income between 2001–5000 RMB.

There were statistically significant differences in the Chaxu atmosphere scores based on education level ( $F=13.757$ ,  $P<0.05$ ), professional categories ( $F=7.973$ ,  $P<0.05$ ), and job tenure ( $F=3.228$ ,  $P<0.01$ ). There were



**Figure 1** Statistical diagram model 6 two mediators.<sup>43</sup>

**Notes:** The a,b,c',d represent unstandardized regression coefficients (B). Indirect effect of X on Y through  $M_i$  only =  $a_i b_i$ . Indirect effect of X on Y through  $M_1$  and  $M_2$  in serial =  $a_1 d_{21} b_2$ . Direct effect of X on Y =  $c'$ .



**Table 1** Characteristics of Participants and Difference in ChaXu Atmosphere, Envy, Silence and Organizational Responsibility Behavior (n=1, 221)

Characteristic	N(%)	ChaXu Atmosphere	Nurse Envy	Nurse Silence	Organizational Responsibility Behavior
<b>Age</b>					
①20–39	706 (57.82)	2.94±0.948	2.65±0.900	2.26±0.956	3.61±0.799
②30–39	415 (33.99)	3.01±0.982	2.65±0.955	2.19±0.888	3.82±0.761
③40–49	83 (6.80)	2.77±1.01	2.48±0.998	1.93±0.773	4.13±0.673
④50+	17 (1.39)	3.20±1.01	2.81±0.926	2.21±0.926	4.07±0.490
LSDs		F=1.918, P>0.05	F=1.091, P>0.05	F=3.262, P<0.05 ①>②; ①>③	F=15.653, P<0.05 ①<②<③; ①<④
<b>Gender</b>					
①Male	88 (7.21)	3.10±0.979	2.70±0.621	2.54±1.018	3.42±0.708
②Female	1133 (92.79)	2.94±0.788	2.64±0.946	2.19±0.912	3.74±0.791
F/t		t=2.049, P>0.05	t=0.362, P>0.05	t=11.867, P<0.05	t=13.790, P<0.05
<b>Education Level</b>					
①Technical secondary school or below	15 (1.23)	1.92±1.013	2.36±0.811	2.22±0.928	3.62±1.101
②College degree	263 (21.54)	2.71±0.983	2.64±0.922	2.06±0.947	3.77±0.828
③Bachelor's degree	883 (72.32)	3.04±0.953	2.65±0.930	2.25±0.918	3.71±0.770
④Master's degree or above	60 (4.91)	3.02±0.762	2.63±0.923	2.37±0.845	3.64±0.807
LSDs		F=13.757, P<0.05 ①<②<③; ①<②<④	F=0.492, P>0.05	F=3.325, P>0.05	F=0.618, P<0.05 ②<③; ②<④
<b>Marital status</b>					
①Unmarried	559 (45.78)	2.93±0.941	2.68±0.880	2.28±0.953	3.61±0.784
②Married	644 (52.74)	2.98±0.988	2.61±0.964	2.16±0.901	3.81±0.788
③Divorced or loss of spouse	18 (1.47)	3.19±1.014	2.80±0.933	2.11±0.697	3.93±0.506
LSDs		F=0.738, P>0.05	F=1.107, P>0.05	F=2.480, P>0.05	F=10.769, P<0.05 ①<②
<b>Professional Categories</b>					
①Primary: Nurse	345 (28.26)	2.76±0.913	2.65±0.909	3.65±0.831	3.65±0.831

(Continued)

Table 1 (Continued).

Characteristic	N(%)	ChaXu Atmosphere	Nurse Envy	Nurse Silence	Organizational Responsibility Behavior
②Primary: Nurse practitioner	555 (45.45)	3.05±0.959	2.65±0.896	3.65±0.774	3.65±0.774
③Medium: Nurse-in-charge	280 (22.93)	3.04±1.010	2.62±1.008	3.87±0.742	3.87±0.742
④High: Associate senior nurse / senior nurse	41 (3.36)	2.71±0.978	2.61±0.929	3.65±0.831	4.13±0.705
LSDs		$F=7.973, P<0.05$ ①<②<④	$F=0.077, P>0.05$	$F=3.228, P<0.05$ ②>④; ①>④ ③>④	$F=9.545, P<0.05$ ①<②<③<④
<b>Job tenure (years)</b>					
①0–3	403 (33.01)	2.86±0.898	2.68±0.877	2.28±1.000	3.59±0.793
②4–5	181 (14.82)	3.06±0.944	2.63±0.893	2.32±0.909	3.61±0.816
③6–10	342 (28.01)	3.07±0.947	2.72±0.961	2.20±0.840	3.71±0.765
④11–20	219 (17.94)	2.91±1.092	2.52±0.955	2.13±0.936	3.93±0.748
⑤21+	76 (6.22)	2.82±1.012	2.48±0.979	1.92±0.794	4.12±0.692
LSDs		$F=3.228, P<0.05$ ①<②; ①<③; ⑤<③;	$F=2.290, P>0.05$	$F=3.622, P>0.05$	$F=12.661, P<0.05$ ①<③<⑤; ①<④; ①<⑤ ②<④; ②<⑤; ③<④
<b>Monthly salary income (RMB)</b>					
①3000 or below	92 (7.53)	2.78±0.916	2.80±0±0	2.23±1.001	3.67±0.797
②3001–5000	240 (19.66)	2.88±1.023	2.76±1.062	2.34±1.003	3.79±0.882
③5001–7000	311 (25.47)	3.01±0.980	2.67±0.939	2.27±0.961	3.69±0.777
④7001–9000	330 (27.03)	2.93±0.965	2.55±0.855	2.10±0.869	3.72±0.739
⑤9001 or above	248 (20.31)	3.05±0.908	2.57±0.890	2.17±0.819	3.71±0.772
LSDs		$F=2.078, P>0.05$	$F=3.067, P>0.05$	$F=2.719, P<0.05$ ②>④; ②>⑤; ③>④	$F=0.662, P>0.05$

statistically significant differences in nurse silence scores based on age ( $F=3.262, P<0.01$ ), gender ( $t=11.867, P<0.01$ ), professional categories ( $F=3.228, P<0.05$ ), and monthly income ( $F=2.719, P<0.01$ ). Furthermore, there

were statistically significant differences in organizational responsibility behavior scores based on age ( $F=15.653, P<0.05$ ), gender ( $t=13.790, P<0.05$ ), education level ( $F=0.618, P<0.05$ ), marital status ( $F=10.769, P<0.05$ ),

**Table 2** Mean, SD, and Correlations Among the Study Variables Among Chinese Nurses (n=1, 221)

Variables	M	SD	1	2	3	4
ChaXu Atmosphere	2.96	0.967	1.000			
Employee Envy	2.64	0.926	0.433**	1.000		
Employee Silence	2.22	0.924	0.407**	0.406**	1.000	
Organizational responsibility behavior	3.72	0.789	-0.143**	-0.216**	-0.318**	1.000

Note: \*\* $p < 0.01$ .

professional categories ( $F=9.545$ ,  $P < 0.01$ ), and job tenure ( $F=12.661$ ,  $P < 0.01$ ). However, there were no differences in envy scores across demographic characteristics (Table 1).

## Correlations Among Continuous Variables

Pearson's correlation coefficients for the continuous variables are shown in Table 2. All variables were significantly correlated with each other. A Chaxu atmosphere was positively correlated with workplace envy ( $r=0.433$ ,  $P < 0.01$ ) and nurse silence ( $r=0.407$ ,  $P < 0.01$ ), while it was negatively correlated with organizational responsibility behavior ( $r=-0.143$ ,  $P < 0.01$ ). Moreover, workplace envy was positively correlated with nurse silence ( $r=0.406$ ,  $P < 0.01$ ), while it was negatively correlated with organizational

responsibility behavior ( $r=-0.216$ ,  $P < 0.01$ ). Furthermore, there was a negative correlation between nurse silence and organizational responsibility behavior ( $r=-0.318$ ,  $P < 0.01$ ). In addition, life satisfaction was negatively correlated with a Chaxu atmosphere ( $r=-0.221$ ,  $P < 0.01$ ), workplace envy ( $r=-0.291$ ,  $P < 0.01$ ), and nurse silence ( $r=-0.332$ ,  $P < 0.01$ ), while it was positively correlated with organizational responsibility behavior ( $r=0.302$ ,  $P < 0.01$ ).

## Results of Chain-Mediation Analysis

The presence of a chain-mediation effect was tested by calculating the bias-corrected 95% CI through bootstrapping with  $n = 5000$  resamples using the PROCESS macro of SPSS22, Model 6 developed by Hayes (2013). We added the gender, age, marital status, monthly income, professional categories, education level, and job tenure of the nurses as control variables in all regression equations.

**Table 3** Regression Model of the Effect of ChaXu Atmosphere on Organizational Responsibility Behavior Among Chinese Nurses (n=1, 221)

Variables		B	SE	T	P-value	LLCI	ULCL	R	R-sq	F	P
Step1 Outcome variable: Employee Envy											
Predictor	C&A	0.421	0.025	16.823	P<0.01	0.372	0.47	0.443	0.193	42.306	P<0.01
Step2 Outcome variable: Employee Silence											
Predictor	C&A	0.262	0.027	9.763	P<0.01	0.210	0.315	0.497	0.247	49.711	P<0.01
Mediator	Envy	0.277	0.028	9.991	P<0.01	0.223	0.332				
Step3 Outcome variable: Organizational Responsibility Behavior											
Predictor	C&A	0.012	0.025	0.492	P>0.05	-0.037	0.062	0.381	0.145	22.882	P<0.01
Mediator 1	Envy	-0.094	0.026	-3.592	P<0.01	-0.146	-0.043				
Mediator 2	Silence	-0.217	0.026	-8.29	P<0.01	-0.268	-0.165				
Step4 Outcome variable: Organizational Responsibility Behavior											
Independent variable	C&A	-0.109	0.023	-4.768	P<0.01	-0.154	-0.064	0.265	0.07	13.131	P<0.01

Note: ChaXu atmosphere =C&A The number represent unstandardized regression coefficients (B).



The chain-mediation model was constructed with envy (M1) and silence (M2) as the mediators. The results are shown in Tables 3 and 4 and Figure 2.

The perceived Chaxu atmosphere of participants was positively associated with nurse envy ( $B=0.412$ ,  $P<0.001$ ) and nurse silence ( $B=0.262$ ,  $P<0.001$ ), and negatively associated with organizational responsibility behavior ( $B=-0.109$ ,  $P<0.001$ ). Moreover, the total effect of the Chaxu atmosphere on organizational responsibility behavior was  $-0.109$  ( $P<0.001$ ). Chaxu atmosphere had no direct effect on organizational responsibility behavior ( $P>0.05$ ). However, there were three indirect pathways through which a Chaxu atmosphere influenced organizational responsibility behavior. First, it evoked envy among nurses ( $\beta=-0.040$ ,  $P<0.001$ ), leading to decreased organizational responsibility behavior. Moreover, it promoted the nurses' silence on critical issues ( $\beta=-0.057$ ,  $P<0.001$ ), also resulting in decreased organizational responsibility behavior. In addition, a Chaxu atmosphere promoted the nurses' silence as it evoked envy among them ( $\beta=-0.025$ ,  $P<0.001$ ), resulting in a further decrease in organizational responsibility behavior, as shown in Table 4.

## Discussion

### Status and Differences in Chaxu Atmosphere, Envy, Silence, and Organizational Responsibility Behavior Among Hospital Nurses in China

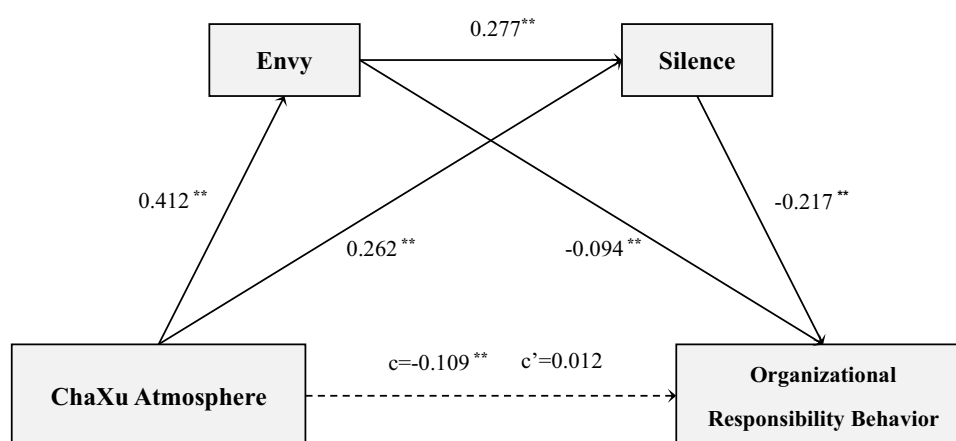
The findings of the current study showed that Chinese nurses display a relatively high-level of organizational

responsibility behavior ( $M=3.72$ ,  $SD=0.789$ ), have relatively moderate levels of perception of a Chaxu atmosphere ( $M=2.96$ ,  $SD=0.967$ ) and envy ( $M=2.64$ ,  $SD=0.926$ ), and demonstrate a relatively low level of silence ( $M=2.22$ ,  $SD=0.924$ ) compared to those in non-medical fields.<sup>25,26</sup> Moreover, the current study revealed that the perception of a Chaxu atmosphere among Chinese nurses differs according to socio-demographic factors such as education level, professional categories, and job tenure. This suggests that nurses with longer job tenures, belonging to higher professional categories, and those with a bachelor's degree or higher perceive a higher level of Chaxu atmosphere than those with shorter tenures, belonging to lower professional categories, and having lower educational levels. Furthermore, the results demonstrated that males, younger nurses, and nurses belonging to lower professional categories and having a lower monthly salary display higher levels of silence. Additionally, females, older nurses, married nurses, nurses belonging to higher professional categories, as well as those with higher education levels and longer job tenures exhibit higher levels of organizational responsibility behavior. The current study proposes that nursing managers should consider differences in the nurses' socio-demographic factors when attempting to promote harmonious nursing management. Nurses with shorter job tenures and those belonging to lower professional categories are prone to emotional changes that lead to fluctuations in work-related behavior or cause them to remain silent to protect themselves.

**Table 4** Paths Effect of ChaXu Atmosphere on Organizational Responsibility Behavior Among Chinese Nurses (n=1, 221)

Effect Paths	Effect ( $\beta$ )	BootSE	BootLLCI	BootULCI	P
Total effect of ChaXu atmosphere on organizational responsibility behavior	-0.109	0.023	-0.154	-0.064	<0.01
Direct effect of ChaXu atmosphere on organizational responsibility behavior	0.012	0.025	-0.037	0.062	0.623
Indirect effect(s) of ChaXu atmosphere on organizational responsibility behavior					
Total Indirect Effect	-0.122	0.016	-0.154	-0.092	<0.01
Path1 ChaXu atmosphere → Envy → organizational responsibility behavior	-0.040	0.013	-0.065	-0.016	<0.01
Path2 ChaXu atmosphere → Silence → organizational responsibility behavior	-0.057	0.01	-0.077	-0.039	<0.01
Path3 ChaXu atmosphere → Envy → Silence → organizational responsibility behavior	-0.025	0.005	-0.035	-0.017	<0.01

**Note:** The number represent standardized regression coefficients ( $\beta$ ).



**Figure 2** Model of pathways between Chaxu atmosphere and organizational responsibility behavior among Chinese nurses.

**Note:** The number represent unstandardized regression coefficients (B), \*\* $p < 0.01$ .

## Nurse Envy and Silence Play a Chain-Mediating Role in the Effect of Chaxu Atmosphere on Organizational Responsibility Behavior

The current study supports the view that Chinese nurses perceive a relatively moderate level of Chaxu atmosphere ( $M=2.96$ ,  $SD=0.967$ ). Previous research has found that private social exchanges for personal interest, a common phenomenon in a “Chaxu atmosphere,” result in behaviors that benefit the organization. Contrary to previous research, our results showed that the perceived level of Chaxu atmosphere was positively associated with nurse envy and silence, while it was negatively correlated with organizational responsibility behavior among nursing staff. Furthermore, the current results indicated that a Chaxu atmosphere negatively influences Chinese nurses’ organizational responsibility behavior in indirect ways, rather than in a direct way. The results showed that there are three paths through which a Chaxu atmosphere affects organizational responsibility behavior: increased envy, increased silence on critical issues, and the joint effect of nurse envy and silence.

According to the theory of “Chaxu Geju” proposed by Chinese sociologist Xiao Tong Fei, relationships between subordinates and leaders in the Chinese context are akin to ripples in water: the more distant the relationship, the weaker it becomes.<sup>15</sup> In line with this theory, nurses evaluated the distance of relationships with their leader, which

is reciprocal and can influence their job behavior to varying degrees.<sup>15</sup> Therefore, the study’s findings revealed that nurses’ overall perception of their own supervisor–subordinate Guanxi quality is a predictor of job behavior and performance. When nurses perceive close supervisor–subordinate Guanxi, they are more willing to undertake added responsibilities and display extra-role behavior in nursing—such as more patience and friendliness toward patients and colleagues—to maintain Guanxi capital with their supervisor and gain more “private benefits.”<sup>16</sup> Under the Chinese “Guanxi” culture, it is not surprising that a “Chaxu atmosphere” in the nursing workplace can negatively affect the workplace responsibility behaviors of nurses, including identifying less with their work and not treating their work conscientiously.

In detail, the present study verified a chain-mediating effect of envy and silence among nurses on the association between a Chaxu atmosphere and organizational responsibility behavior. Specifically, a Chaxu atmosphere has the potential to increase levels of envy and silence, resulting in a lower level of organizational responsibility behavior, which is consistent with the findings of a previous study.<sup>37</sup> Moreover, being in a workplace with a Chaxu atmosphere may cause nurses to develop more negative evaluations and attitudes due to feelings of envy, which manifest in their behaviors toward the organization, such as reducing their efforts at work as a form of retribution.<sup>46</sup> In workplaces where a strong atmosphere of differential treatment exists, nurses who see themselves as victims

may be more likely to perceive injustice and a lower sense of support from organizations and supervisors, thus forming negative self-cognitions.<sup>47,48</sup> Furthermore, a Chaxu atmosphere strengthens perceptions of unfairness among employees when it comes to their interpersonal interactions and sharing information with others.<sup>26</sup> A strong Chaxu atmosphere will diminish nurses' trust in supervisors and their perception of organizational fairness, which subsequently affects subordinates' behavior by causing them to reevaluate their position and feelings toward their group,<sup>26</sup> or to express injustice through silence. The current study emphasized that a Chaxu atmosphere combined with nurse envy and silence is an important concern that should be managed to ensure improved organizational responsibility behavior in nurses.

In China, supervisors are prone to categorizing their subordinates into either an "out-group" or "in-group" based on mutual understanding, and allocate resources and tasks accordingly.<sup>49</sup> Therefore, nurses tend to classify themselves into outsiders and insiders, and perceive different roles and responsibilities based on these classifications. Therefore, because a salient Chaxu atmosphere within an organization can often serve as an important indicator that causes nurses to develop negative feelings about themselves for working in the hospital and department, they may also express their right and dissatisfaction to counter the differential treatment from leadership by keeping silent in their work environment.<sup>50</sup>

Moreover, the self-categorization caused by the perception of a Chaxu atmosphere creates workplace envy across members, making it difficult for nurses to know and trust their colleagues; they may also be concerned that they are being treated unfairly.<sup>51</sup> People need a sense of safety, and a perceived Chaxu atmosphere can minimize attachment security and reduce the psychological security awareness of nurses. When nurses perceive differential treatment from a leader and believe that they are not an insider, they may experience low levels of psychological security.<sup>50</sup> In the Chinese cultural context, "He that talks much errs much." Nurses use workplace silence to self-protect due to psychological security awareness, and thus refuse to provide any suggestions or opposition to the organization despite such behaviors being conducive to the development of the workplace. Although "Guanxi" circles have been regarded as effective and efficient work units in China in previous studies,<sup>16</sup> they create a Chaxu atmosphere that might not be conducive to the development of the nursing workplace.

China's unique "Guanxi" culture shapes the special "Chaxu atmosphere" of the nursing workplace, causing Chinese nurses to divide their in-circle into core and peripheral members.<sup>16</sup> When nurses realize they are peripheral members, they gradually become envious of those in the "core-circle group," which leads to an indifferent attitude, a preference to stay silent regarding work issues, and a subsequent decrease in organizational responsibility behavior.<sup>37</sup> Due to limited managerial resources and energy, leaders in a Chaxu atmosphere will typically select certain nurses as "trusted aides" to foster better relationships.<sup>52,53</sup> These nurses are in the "core-circle group" and receive more desirable assignments, rewards, and greater resources, and perceive themselves as receiving more support from the head nurse than do nurses among the "peripheral members."<sup>52</sup> On the contrary, "peripheral member" nurses develop negative responses to their supervisor and organization, such as developing feelings of envy and silence in the face of hidden organizational flaws, resulting in lower organizational responsibility behavior.<sup>49</sup> Additionally, the Mindsponge mechanism proposed by Vuong and Napier,<sup>54</sup> an explanatory mechanism regarding the complexity of acculturation in a global context,<sup>55</sup> helps us better understand the positive association between envy and silence, indicating conflicting values. Since Chinese culture is simultaneously influenced by many religions, such as Buddhism, Confucianism, and Taoism, the cultural additivity level among Chinese people is high, causing them to develop a higher tolerance to conflicting values.<sup>56</sup> In Chinese culture, which is greatly influenced by Confucianism, silence might be perceived to bring greater benefit,<sup>56</sup> such as harmony in the workplace or the obedience of subordinates; however, it does not mean that nurses who choose to remain silent are more responsible for nursing and treating patients. The current study verified that a Chaxu atmosphere in the nursing workplace limits organizational responsibility behavior among nurses through the chain-mediating effects of envy and silence. Therefore, to avoid the adverse outcomes caused by a Chaxu atmosphere and to prevent the development of beliefs regarding unfairness or relative deprivation, hospital practitioners should build an appropriate nursing environment and organizational climate that discourages favoritism and self-serving behaviors.<sup>57</sup> Head nurses should be provided with additional training as well as opportunities to participate in continuing education regarding team construction. Targeted psychological support should be provided for nurses involved in the daily management of nursing human resources. Job rotation and discussion platforms should be incorporated into nursing

management, which might help create an open and transparent resource-allocation process.

## Limitations

The following limitations of this study need to be discussed. First, the data were collected through an online survey, which is prone to response bias due to the social desirability or negative effect. Second, although we attempted to ensure a representative sample and there were no significant differences across data collection regions, we acknowledge that the effective response rate was not ideal. Third, a cross-sectional design cannot determine a causal relationship among the studied variables. Fourth, the Chaxu atmosphere is a unique cultural phenomenon in China; therefore, the results of the present study cannot be used to determine whether the Chaxu atmosphere operates beyond the realm of Chinese culture. Further research is needed to test whether these results are observable across different cultural contexts.

## Conclusion

The results indicated that higher perception levels of a Chaxu atmosphere can positively predict decreased organizational responsibility behavior. Moreover, envy and silence among nurses played a chain-mediating role in the relationship between a Chaxu atmosphere and organizational responsibility behavior. Specifically, nurses who perceived a high level of Chaxu atmosphere tended to maintain silence in the face of critical issues due to their feelings of envy, which subsequently reduced organizational responsibility behavior. A fair and transparent organizational culture is necessary to decrease nurse envy and silence, and to foster closer nurse-supervisor working relationships, which ultimately improve the subordinate's organizational responsibility behavior.

## Relevance to Clinical Practice

The findings of this study can provide certain guidance to hospital managers in terms of establishing processes to predict nurses' organizational responsibility behavior and other relevant issues. The results indicate that we should be cautious regarding differential treatment of nurses and the "Guanxi" culture, which create a strong Chaxu atmosphere that may subsequently hinder the improvement and promotion of nurses' organizational responsibility behavior. A Chaxu atmosphere tends to promote nurses' envy and silence, resulting in decreased organizational responsibility behavior. This study serves as a reminder that head nurses

or hospital managers should strengthen their interpersonal interactions with subordinate nurses through formal or informal channels, enhance communication and interaction between superiors and subordinates, and reduce nurses' negative emotions, such as perceived unfair workplace ostracism. In addition, they should foster better organizational responsibility behavior among nurses. In order to promote organizational responsibility behavior in a nursing workplace, the perceived Chaxu atmosphere needs to be minimized through the professional development of head nurses. The current study also suggests that it is necessary to develop and implement a targeted psychological support scheme for nurses with negative emotions, especially in an organization with a Chaxu atmosphere.

## Data Sharing Statement

The datasets used and/or analyzed during this study are available from the Shu-e Zhang or Depin-Cao on reasonable request. Email: [hydzhangshue@163.com](mailto:hydzhangshue@163.com) and [caodp211@126.com](mailto:caodp211@126.com).

## Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

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## Disclosure

The authors report no conflicts of interest in this work.

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