

# Effect of Perfectionism on Interpersonal Sensitivity Among Nursing Students: The Mediating Role of Coping Style and Subjective Well-Being

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**Aim:** To explore the connection between perfectionism and interpersonal sensitivity among nursing students and to examine the intermediary effects of coping style and subjective well-being within this association.

**Methods:** Utilizing a cross-sectional approach, this study assessed 682 nursing students at two Henan Province universities in China, employing the Multidimensional Perfectionism Scale, Interpersonal Sensitivity Questionnaire, Coping Style Scale, and Subjective Well-being Scale. The data were subjected to descriptive statistics, Pearson correlation, and regression analysis with a macro process model.

**Results:** Maladaptive perfectionism showed a strong positive link with interpersonal sensitivity ( $r = 0.42$ ,  $p < 0.01$ ) and a negative coping style ( $r = 0.18$ ,  $p < 0.01$ ), and a marked negative link with subjective well-being ( $r = -0.23$ ,  $p < 0.01$ ). Coping style and subjective well-being acted as sequential mediators in the relationship between perfectionism and interpersonal sensitivity.

**Conclusion:** Perfectionism has a direct impact on the interpersonal sensitivity of nursing students and also influences it indirectly through coping strategies and subjective well-being. These findings offer theoretical backing and direction for research into and enhancement of nursing students' interpersonal sensitivity, underscoring the significance of interventions designed to mitigate maladaptive perfectionism, foster constructive coping styles, and bolster subjective well-being.

**Keywords:** perfectionism, interpersonal sensitivity, coping style, subjective well-being

## Introduction

Nursing is a profession that hinges on interaction with others.<sup>1</sup> Effective and clear communication fosters trust between nursing staff and patients, which in turn enhances patient satisfaction and the quality of patient care.<sup>2</sup> Moreover, to deliver optimal care to patients, nurses require a favorable self-image and a healthy psychological state.<sup>3</sup> Interpersonal sensitivity is an important reflective indicator of nurses' mental health, which refers to an individual's perceived sensitivity to others' emotions and behaviors.<sup>4</sup> Interpersonal sensitivity is marked by heightened self-consciousness and unease in social interactions, a sense of inadequacy, and the anticipation of disfavor from others.<sup>5</sup> Individuals with heightened interpersonal sensitivity are particularly mindful of their relationships with others and will change their behaviors and attitudes to meet the expectations of others.<sup>6</sup> Such behavior will hurt their communication and cause conflicts.<sup>7</sup> To date, most researchers have focused related studies on adolescents,<sup>8</sup> employees,<sup>9</sup> and patients.<sup>10</sup> However, the scarcity of studies concentrating on the interpersonal sensitivity of nursing students persists. Several existing studies have suggested that nurses have an elevated degree of interpersonal sensitivity and that interpersonal sensitivity is also especially prevalent among contemporary nursing students.<sup>11,12</sup> Research has indicated that interpersonal sensitivity is not only closely related to psychological issues like anxiety, depression, and loneliness,<sup>13–15</sup> but also may impair academic performance and social relationships.<sup>16</sup> If there is not a prompt intervention, higher levels of interpersonal sensitivity may result, which may even affect an individual's future employment choices or work quality.<sup>17</sup> As the

backbone and inheritor of the nursing profession in the new era, nursing students need to possess superior interpersonal communication skills and maintain a healthy and positive psychology to fulfill their career responsibilities. Consequently, it is paramount to identify the influencing factors and underlying psychological mechanisms of nursing students' interpersonal sensitivity. It provides a theoretical foundation for nursing educators to develop targeted intervention strategies. This is essential for nurturing high-caliber individuals and ensuring the future stability of the nursing team and the excellence of nursing services.

Among the numerous factors influencing interpersonal sensitivity, perfectionism represents a significant element. Perfectionism is a significant problem for nursing students, with prevalence estimates as high as 80%.<sup>18</sup> Perfectionism is usually defined as a personality style associated with the pursuit of perfection and the setting of high standards for oneself, accompanied by an apparent tendency to be self-critical.<sup>19</sup> Perfectionism is multidimensional, with a notable distinction being that between adaptive perfectionism and maladaptive perfectionism.<sup>20</sup> Those with the trait of adaptive perfectionism can adapt without excessive self-criticism, while those with the trait of maladaptive perfectionism are dissatisfied with their performance and have an extremely self-critical attitude.<sup>21</sup> Maladaptive perfectionism refers to an individual's pursuit of excessively high standards and an obsessive fixation on perfection, often accompanied by a fear of making mistakes and an excessive concern with others' evaluations.<sup>22</sup> In contrast, adaptive perfectionism involves pursuing high standards with a positive motivation toward goal achievement, typically associated with self-improvement and a tendency for continuous progress.<sup>23</sup> The social detachment model suggests that individuals with perfectionist tendencies may cope with their high standards and fear of failure through social detachment. This can lead to negative communicative outcomes such as isolation, avoidance of social situations, and difficulty establishing meaningful relationships.<sup>24</sup> Based on the social detachment model of perfectionism, the genesis of perfectionistic tendencies can be traced to issues with attachment, characterized by unfulfilled desires for care, acceptance, and security, which over time evolve into diverse manifestations of sensitivity to the responses of others and/or hostility in interpersonal relations.<sup>25</sup> Research has indicated that perfectionists are perpetually preoccupied with gaining acknowledgment and approval, harbor a persistent dread of criticism from key individuals, and thus exhibit heightened sensitivity to interpersonal pressures.<sup>26,27</sup> However, although some studies have confirmed the correlation between perfectionism and interpersonal sensitivity, research samples have predominantly concentrated on adolescents<sup>26</sup> and other populations; no such studies have reported the degree of correlation between perfectionism and the interpersonal sensitivity of nursing students. Therefore, we sought to examine the impacts of the two distinct aspects of perfectionism, namely, adaptive perfectionism and maladaptive perfectionism, on nursing students' interpersonal sensitivity.

Besides looking at how perfectionism directly influences interpersonal sensitivity, this research also sought to delve into the mechanisms that drive this connection. Coping styles refer to the conscious, purposeful, and flexible behaviors individuals use to adapt to changes in their environment.<sup>28</sup> When faced with stress or challenges, individuals employ cognitive and behavioral strategies that can be categorized as either positive or negative. Positive coping includes strategies such as problem-solving and seeking support, while negative coping includes avoidance and denial.<sup>29</sup> Studies have shown that perfectionism is closely related to different types of coping styles. Compared with maladaptive perfectionists, adaptive perfectionists adopt more positive coping styles to deal with problems instead of less negative coping styles.<sup>30,31</sup> Besides, studies have found that when encountering stressful events, nursing students may respond to different coping styles.<sup>32</sup> How one copes with conflicting events in the process of social interaction often influences the development of interpersonal relationship quality.<sup>33,34</sup> For example, positive coping styles help nursing students maintain a good mental state and interpersonal relationships, while negative coping styles can lead nursing students to show psychological distress and increase their risk of experiencing interpersonal stressful life events, which may further lead to higher levels of interpersonal sensitivity.<sup>35–37</sup> Consequently, this study posits Hypothesis 1 as follows: coping styles serve to mediate the relationship between perfectionism and interpersonal sensitivity.

Subjective well-being refers to an individual's overall emotional and cognitive evaluation of their quality of life.<sup>38</sup> It consists of both affective and cognitive components. The affective component involves the presence of positive emotions and the absence of negative emotions, while the cognitive component refers to life satisfaction. Subjective well-being is a subjective experience characterized by subjectivity and relative stability, serving as a comprehensive indicator that assesses emotional responses and life satisfaction over an extended period.<sup>39</sup> Previous studies have demonstrated a strong

correlation between perfectionism and subjective well-being.<sup>40</sup> The behavior of adaptive perfectionists is driven by the motivation to pursue success. When such individuals reach the standard, they will be satisfied with their good performance and thus have a higher level of subjective well-being. However, the actions of maladaptive perfectionists stem from a fear of failure as their driving force. Regardless of whether the standard is achieved, these individuals will reset higher standards for themselves, fail to feel satisfied with themselves, put themselves in stressful events or situations, and may even have negative emotions or thoughts, thus affecting their subjective well-being.<sup>41,42</sup> In addition, studies have found that individual subjective well-being is markedly inversely related to interpersonal sensitivity.<sup>43</sup> Individuals with lower subjective well-being had higher levels of loneliness,<sup>44</sup> which may trigger maladaptive self-regulatory behaviors, such as devaluation or hostility towards others, therefore making it more difficult to establish good relationships with others in real life and leading to higher levels of interpersonal sensitivity.<sup>45</sup> Thus, this study posits Hypothesis 2 as follows: subjective well-being serves to mediate the relationship between perfectionism and interpersonal sensitivity.

Existing research indicates a close relationship between individuals' social differences—such as their evaluations of life satisfaction—and their coping strategies.<sup>46–48</sup> Positive coping styles are positively related to individual subjective well-being, while negative coping styles are inversely related to individual subjective well-being.<sup>49</sup> Consequently, this study posits Hypothesis 3 as follows: coping styles and subjective well-being serve as sequential mediators in the link between perfectionism and interpersonal sensitivity.

In summary, the professional characteristics of nursing students require them to possess not only effective communication skills and adaptive coping strategies but also strong mental health. Therefore, studying interpersonal sensitivity and its influencing factors among nursing students is highly meaningful. This study will examine the relationship between perfectionism and interpersonal sensitivity in nursing students, as well as the mediating role of coping strategies and subjective well-being. The theoretical model of this study is shown in Figure 1.

## Methods

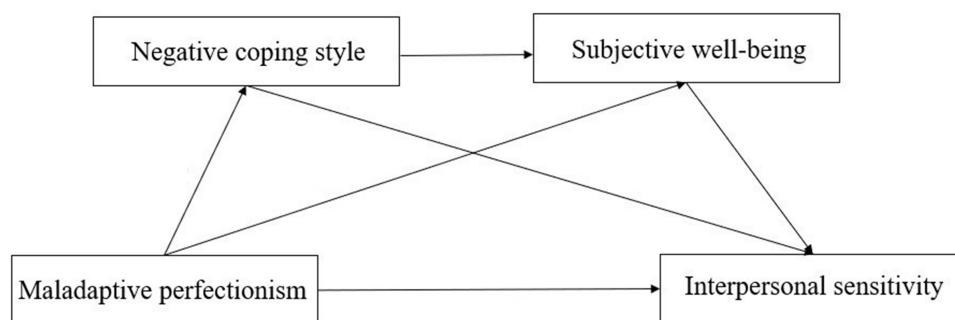
### Design and Participants

In this study, a cross-sectional survey was implemented. Utilizing a convenience sampling technique, data was collected from nursing students at two universities in Henan Province. Eligibility for participation was determined by (a) being a full-time undergraduate nursing student and (b) providing informed consent and willingly participating in the study. Participants were excluded if they failed to complete the entire questionnaire for any reason. The minimum sample size of this study estimated using the G\*Power 3.1 program was 135 participants for power 0.80, effect size 0.15, and significance level 0.05 with 16 predictors.

### Measures

#### The Chinese Frost Multidimensional Perfectionism Scale

The Frost Multidimensional Perfectionism Scale, initially crafted by Frost et al<sup>50</sup> and later revised by Zi and Zhou,<sup>51</sup> consists of 27 items that span across five dimensions: apprehension about making errors, uncertainty regarding one's



**Figure 1** The theoretical model of this study.

actions, personal benchmarks, the propensity for organization, and parental expectations. It employs a 5-point Likert scale, with “1” indicating “very inconsistent” and “5” signifying “very consistent”. The overall score is calculated by aggregating the scores of each item, with higher scores reflecting greater perfectionistic tendencies of the respondent. In this investigation, the scale’s Cronbach’s  $\alpha$  was found to be 0.84.

### Subjective Well-Being Scale

The subjective well-being scale developed by Campbell<sup>52</sup> and adopted by Dong<sup>53</sup> was used to measure the subjective well-being of nursing students. The scale consists of nine questions, including the overall emotional index and life satisfaction dimensions, using the Likert seven-point scoring method. The scale encompasses a total of 9 items, categorized into two sections: the overall emotional index and life satisfaction. It utilizes a 7-point Likert scale for assessment. The subjective well-being level of the respondent is indicated by the average score of these nine items, with higher scores suggesting a higher level of subjective well-being. In this investigation, the Cronbach’s  $\alpha$  coefficient of the scale was recorded at 0.82.

### Interpersonal Sensitivity Measure for College Students

The Interpersonal Sensitivity Measure for College Students, initially developed by Boyce and Parker<sup>4</sup> and subsequently revised by Zhong,<sup>54</sup> comprises 29 items distributed across five dimensions: suspicion, vulnerability, shyness, need for identification, and separation anxiety. The scale employs a 4-point Likert format, with “1” representing “very inconsistent” and “4” indicating “very consistent”. It is noteworthy that items 3, 6, 12, 13, and 26 are reverse-scored. The overall score is determined by aggregating the scores from every item, with higher scores signifying a greater extent of interpersonal sensitivity on the part of the respondent. In this investigation, the Cronbach’s  $\alpha$  coefficient of the scale was 0.92.

### Simplified Coping Style Scale

The Simplified Coping Style Scale was developed by Xie.<sup>29</sup> The scale comprises a total of 20 items, which are divided into two dimensions: positive coping style and negative coping style. The scale encompasses the coping styles frequently employed by individuals in their daily lives. A four-point Likert scale is employed, with responses ranging from “0” (indicating that the behavior in question is not adopted) to “3” (indicating that it is often adopted). A total score is calculated for each dimension independently, with higher scores indicating higher levels of individual positive or negative coping. In this study, the Cronbach’s  $\alpha$  coefficients of the positive and negative coping subscales were 0.71 and 0.67, respectively.

## Data Collection

Data collection spanned the months of May to June 2022. Researchers reached out to the deans of two nursing departments to request permission for data collection from their students. Following this, with the informed consent of the nursing students, the researchers began distributing paper questionnaires to students during their recess time in a classroom setting where students were assembled. The researchers provided a unified explanation regarding the study’s purpose and importance, as well as any considerations that the students needed to be aware of. It took participants approximately 15–20 minutes to complete all the questionnaires. No incentives or rewards were offered to the participants throughout the survey process. Upon completion of the survey, the questionnaires were immediately collected. A total of 720 questionnaires were gathered, with 37 being disqualified due to incomplete responses. This resulted in 682 valid questionnaires, achieving a valid response rate of 94.7%. Finally, we used the EpiData software to summarise and enter data from the questionnaire.

## Ethical Considerations

Despite the survey being anonymous and free from any unethical practices or human clinical trials and bearing no adverse effects on the health or psychological state of participants, considerable effort was dedicated to addressing ethical considerations. Initially, the importance and objectives of the study were communicated to the participants, who then made an individual decision to participate. Subsequently, we guaranteed that the responses would be used exclusively for

research purposes and that participants had the right to withdraw from the study at any moment. Ultimately, the study received endorsement from the appropriate ethics committee (ID number: 20220107001).

## Statistical Analysis

The data underwent analysis with the aid of SPSS 26.0 software in conjunction with the PROCESS macro. Initially, we utilized descriptive statistical techniques, which included measures such as frequency, mean, and standard deviation, to assess the demographic profiles of the participants as well as their levels of interpersonal sensitivity, perfectionism, coping styles, and subjective well-being. Subsequently, Pearson's correlation analysis was employed to investigate the relationships between the four key variables: perfectionism, interpersonal sensitivity, coping style, and subjective well-being (Bilateral  $p$ -values less than 0.05 were considered statistically significant). To conclude, PROCESS Model 6<sup>55</sup> was implemented to scrutinize the mediating effects of coping style and subjective well-being on the relationship between perfectionism and interpersonal sensitivity specifically within the context of nursing students. To test the effect of perfectionism on interpersonal sensitivity via the mediating variable, a 95% confidence interval was calculated using bias-corrected percentile bootstrapping with 5000 bootstrap samples.<sup>56</sup> The  $p$ -value was calculated using a two-tailed approach, with values below 0.05 indicating statistical significance.

## Results

### Common Method Bias Tests

Considering that all variables were assessed through self-report measures, it was imperative to investigate the possibility of common method bias. The findings from Harman's single-factor test indicated the presence of 18 factors, each with an eigenvalue exceeding one. The first factor accounted for 16.42% of the total variance, falling short of the 40% threshold considered critical.<sup>57</sup> Consequently, it can be concluded that no significant common method bias was detected in this study.

### Participant Characteristics

A total of 720 subjects were investigated. After excluding the questionnaires that were answered incompletely or not seriously, 682 valid responses were ultimately collected, achieving an effective response rate of 94.7%. The participants' ages ranged from 17 to 24 years old, averaging 19.83 years with a standard deviation of 1.18. Females constituted 77.7% of the respondents. Among the participants, 42.7% were first-year students, 34.3% were second-year students, and 23.0% were third-year students. The majority resided in rural regions, with 63.3% living there. Additionally, 13.9% were only children, and the majority reported an average monthly household income ranging from RMB 3000 to 6000, accounting for 51.0% (Table 1).

### Descriptive Statistics and Pearson's Correlation Analysis

Table 2 presents the average values, standard deviations, and the correlation matrix of each variable. The nursing students' interpersonal sensitivity mean score was  $2.40 \pm 0.45$ , while the adaptive perfectionism, maladaptive perfectionism, positive coping style, negative coping style, and subjective well-being mean scores were  $3.49 \pm 0.55$ ,  $2.89 \pm 0.59$ ,  $3.02 \pm 0.43$ ,  $2.38 \pm 0.55$ , and  $5.11 \pm 1.14$ , respectively.

Pearson's correlation analysis showed that maladaptive perfectionism was markedly positively related to interpersonal sensitivity ( $r=0.42$ ,  $p<0.01$ ) and negative coping style ( $r=0.18$ ,  $p<0.01$ ) and markedly inversely related to subjective well-being ( $r=-0.23$ ,  $p<0.01$ ). Negative coping style was markedly positively related to interpersonal sensitivity ( $r=0.33$ ,  $p<0.01$ ) but markedly inversely related to subjective well-being ( $r=-0.16$ ,  $p<0.01$ ). Subjective well-being was markedly inversely related to interpersonal sensitivity ( $r=-0.41$ ,  $p<0.01$ ). Nevertheless, no substantial association was found between adaptive perfectionism and either negative coping strategies or interpersonal sensitivity. Therefore, the mechanism of adaptive perfectionism will not be discussed further.

**Table 1** Characteristics of Participants (N = 682)

Variables	n (%) / mean $\pm$ SD
Age (year)	19.83 $\pm$ 1.18
Gender	
Male	152 (22.3)
Female	530 (77.7)
Grade	
Freshman	291 (42.7)
Sophomore	234 (34.3)
Junior	157 (23.0)
Hometown	
City	250 (36.7)
Country	432 (63.3)
Single child	
Yes	95 (13.9)
No	587 (86.1)
Per capita monthly income of the family (RMB)	
<3000	246 (36.1)
3000–6000	348 (51.0)
$\geq$ 6000	87 (12.8)

**Table 2** Correlations for the Study Variables

Variables	M	SD	1	2	3	4	5	6	7	8
1. Perfectionism	3.16	0.47	–	–						
2. Adaptive perfectionism	3.49	0.55	0.77**	–						
3. Maladaptive perfectionism	2.89	0.59	0.87**	0.34**	–					
4. Coping style	2.77	0.35	0.15**	0.16**	0.10*	–				
5. Positive coping style	3.02	0.43	0.11**	0.25**	–0.03	0.78**	–			
6. Negative coping style	2.38	0.55	0.10**	–0.05	0.18**	0.66**	0.04	–		
7. Subjective well-being	5.11	1.14	–0.05	0.22**	–0.23**	0.11**	0.29**	–0.16**	–	
8. Interpersonal sensitivity	2.40	0.45	0.26**	–0.05	0.42**	0.06	–0.20**	0.33**	–0.41**	–

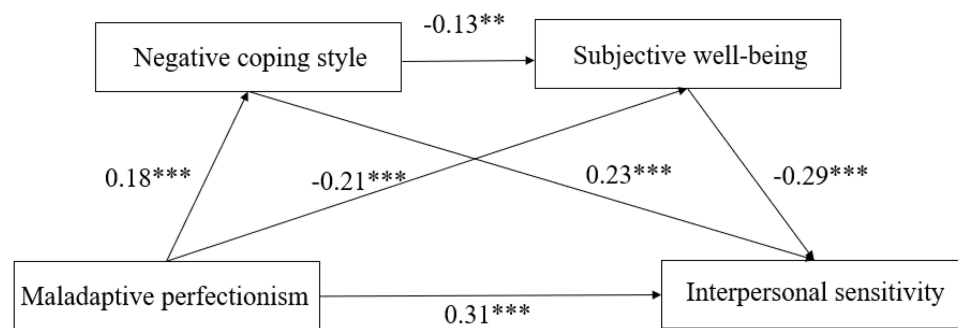
Note: \* $p < 0.05$ , \*\* $p < 0.01$ .

## Mediation Effect Test

Model 6 of PROCESS 3.5 was used to test the mediating effect when controlling for demographic variables such as gender and grade, with maladaptive perfectionism as the independent variable, negative coping style and subjective well-being as the mediating variables, and interpersonal sensitivity as the dependent variable. The results showed that maladaptive perfectionism significantly positively predicted interpersonal sensitivity ( $\beta=0.31$ ,  $t=9.50$ ,  $p<0.001$ ). Specifically, maladaptive perfectionism could significantly positively predict negative coping styles ( $\beta=0.18$ ,  $t=4.83$ ,  $p<0.001$ ) and significantly negatively predict subjective well-being ( $\beta=-0.21$ ,  $t=-5.53$ ,  $p<0.001$ ). Negative coping style significantly negatively predicted subjective well-being ( $\beta=-0.13$ ,  $t=-3.33$ ,  $p<0.01$ ) and significantly positively predicted interpersonal sensitivity ( $\beta=0.23$ ,  $t=7.01$ ,  $p<0.001$ ). Subjective well-being significantly negatively predicted interpersonal sensitivity ( $\beta=-0.29$ ,  $t=-9.02$ ,  $p<0.001$ ). Negative coping style and subjective well-being were found to play a significant partial mediating role in the maladaptive perfectionism and interpersonal sensitivity of nursing students, respectively, and negative coping style-subjective well-being was also found to play a significant chain mediating role between maladaptive perfectionism and interpersonal sensitivity (Figure 2).

Furthermore, the bias-corrected bootstrap technique (involving 5000 resampling iterations) was employed to assess the mediation effect. The findings, as depicted in Table 3, indicate that the 95% confidence intervals for all three mediation pathways exclude zero, signifying that the mediation effects have achieved statistical significance. Overall, the





**Figure 2** Multiple mediation effect model.

**Note:** \*\*\* $p < 0.001$ ; \*\* $p < 0.01$ .

total indirect effect of negative coping style and subjective well-being between maladaptive perfectionism and interpersonal sensitivity was found to be 0.08, accounting for 26.01% of the total effect (0.32).

## Discussion

In this study, nursing students' interpersonal sensitivity was ( $2.40 \pm 0.45$ ), indicating that the level of interpersonal sensitivity of nursing students in this survey was elevated; the result surpassed that observed in the general university student population ( $1.91 \pm 0.68$ ).<sup>11</sup> It could be attributed to the fact that nursing students frequently participate in practical sessions or role-playing activities as part of their curriculum, leading to more regular interactions with peers and a higher frequency of being subjected to evaluations by others compared to the average university student. Elevated fear of receiving negative feedback could potentially amplify an individual's interpersonal sensitivity.

The present research revealed that there is a substantial positive link between maladaptive perfectionism and interpersonal sensitivity and that maladaptive perfectionism can significantly and positively forecast the degree of interpersonal sensitivity, aligning with the research of Wang, Abdollahi, and Folkman.<sup>26,27,58</sup> This trend could stem from the fact that individuals with maladaptive perfectionism set excessively high personal standards, often seeking perfection as a means to gain acceptance and value from others, and striving to maintain an idealized self-image during social interactions. However, they frequently lack confidence in their ability to meet the high expectations they and others have set for themselves. During social interactions, these individuals are more likely to focus on their shortcomings and errors, and they may be apprehensive about receiving negative feedback. As a result, they could exhibit a heightened sensitivity to the reactions of others, thereby demonstrating increased interpersonal sensitivity.<sup>59,60</sup> This result also indicates that we should pay attention to screening out maladaptive perfectionists from pools of nursing students and conduct related interventions, such as reducing interpersonal hostility levels and increasing interpersonal relationships by having maladaptive perfectionists participate in mindfulness-based compassion meditation and activities.<sup>61,62</sup> Regular counseling sessions can also be set up for students screened for adaptive perfectionism to help them identify and manage their perfectionist tendencies; Finally, educators can also add courses related to humanism to the nursing curriculum to teach students effective emotion management strategies to enhance their social support networks.

**Table 3** Indirect Effects of Negative Coping Styles and Subjective Well-Being Based on 5000 Bias-Corrected Bootstrapped Samples

Procedure	Path	Effect	BootSE	BootLLCI	BootULCI	Mediation Proportion
Indirect effect	MP→NCS→IS	0.032	0.009	0.017	0.050	9.91%
	MP→SWB→IS	0.047	0.011	0.028	0.070	14.55%
	MP→NCS→SWB→IS	0.005	0.002	0.001	0.010	1.55%
Total indirect effect		0.084	0.013	0.059	0.111	26.01%
Total effect		0.323	0.027	0.270	0.375	

**Abbreviations:** MP, Maladaptive perfectionism; NCS, Negative coping style; SWB, subjective well-being; IS, Interpersonal sensitivity.

Additionally, this study determined that negative coping strategies serve as intermediaries in the link between maladaptive perfectionism and the interpersonal sensitivity of nursing students; that is, higher levels of maladaptive perfectionism predispose nursing students to engage in negative coping styles, which in turn escalates their interpersonal sensitivity, thereby corroborating Hypothesis 1, thereby supporting Hypothesis 1. This may be because nursing students who tend towards maladaptive perfectionism pay too much attention to their failures, are more likely to have a sense of frustration and failure, and are inclined to employ negative coping styles to escape problems.<sup>63,64</sup> Negative coping styles tend to damage nursing students' social networks<sup>37</sup> such as nursing students experience high levels of interpersonal sensitivity. These results underscore the importance of incorporating courses like interpersonal communication and nursing psychology into university curricula, as they can effectively instruct nursing students in adopting affirmative approaches to manage stressful occurrences. Therefore, we recommend that schools establish stress management counseling services and regularly hold workshops on stress management and coping strategies to encourage students to adopt more adaptive coping methods. These could include: (1) encouraging students to express their emotions through journaling, artistic creation, or communicating with others to help them release negative feelings; (2) teaching students to view issues from different perspectives, to identify positive aspects, thereby reducing anxiety and sensitivity, and promoting positive feedback within the school environment to enhance students' self-efficacy and reduce fear of negative feedback; and (3) encouraging students to learn from how others handle similar challenging situations, thus minimizing the use of maladaptive coping strategies.

This study also found that subjective well-being mediates the link between maladaptive perfectionism and interpersonal sensitivity in nursing students; that is, elevated levels of maladaptive perfectionism among nursing students result in diminished subjective well-being, which consequently leads to heightened levels of interpersonal sensitivity. Which confirms Hypothesis 2. This is consistent with previous results<sup>65</sup> Compared with adaptive perfectionists, maladaptive perfectionists usually have low levels of life satisfaction and well-being.<sup>42,66</sup> When individuals with low levels of subjective well-being experience less positive emotional experience and more negative emotional experiences, they tend to perceive people and things in the surrounding environment from a sensitive perspective, which is not conducive to maintaining good interpersonal relations and mental health;<sup>67</sup> thus, such individuals tend to have high levels of interpersonal sensitivity. Based on the results of this study, we suggest that educators can take some measures to improve the subjective well-being of nursing students. For example, schools can carry out activities to promote mental health: they can organize mental health activities regularly, such as fun sports games and team building activities, to enhance students' sense of well-being and life satisfaction; they can also offer life skills training and provide training courses related to life balance, time management, and self-care, to help students find a balance between academics and life, and to enhance their subjective sense of well-being.

In addition, the findings of this study indicated that maladaptive perfectionism can also have an impact on the interpersonal sensitivity of nursing students through the chain-mediating effect between coping styles and subjective well-being, which confirms Hypothesis 3. This result suggests that nursing students with maladaptive perfectionism are inclined to employ negative coping styles, which will not only help them to solve problems but also may produce more emotional and behavioral problems, which will have a negative influence on their subjective well-being<sup>68,69</sup> and subsequently affect their level of interpersonal sensitivity. This is also consistent with the research of Ma.<sup>70</sup> Furthermore, the independent mediating effect of coping style and subjective well-being accounted for 9.91% and 14.55% of the total mediating effect, respectively, while the chain-mediating effect of both accounted for only 1.55%. This indicates that maladaptive perfectionism predicts interpersonal sensitivity mainly through the independent mediating effect of coping style and subjective well-being. This suggests that for nursing students with maladaptive perfectionism, those who have a negative coping style or a diminished level of subjective well-being may have a directly increased level of interpersonal sensitivity, ie, one that is not necessarily developed through the sequential effect of the two above-mentioned factors on the likelihood of having an elevated degree of interpersonal sensitivity.

## Implication

This research delved into the correlation between perfectionism and interpersonal sensitivity among nursing students. It revealed that maladaptive perfectionism acts as a significant and enduring predictor of interpersonal sensitivity, which



should be paid full attention to in future studies. Furthermore, the study shed light on the complex mechanism of coping styles and subjective well-being as they pertain to the influence of maladaptive perfectionism on nursing students' interpersonal sensitivity. These insights hold theoretical significance for elucidating the origins of interpersonal sensitivity among nursing students. Concurrently, they offer valuable guidance for interventions aimed at mitigating and preventing heightened interpersonal sensitivity levels in this demographic. Initially, nursing educators ought to focus on the screening of maladaptive perfectionists in pools of nursing students and use cognitive behavioral therapy to intervene in perfectionism among nursing students. Second, social skills training courses should be organized for nursing students, which may include psychological education, observation, and friendship cultivation, to increase the social connections of nursing students. Finally, nursing educators should guide maladaptive perfectionists among nursing students to embrace constructive coping styles in the face of interpersonal pressure and reduce the use of negative coping styles like escapism and fantasizing, which can exacerbate negative emotions such as depression, improve their subjective well-being level, reduce their interpersonal sensitivity level, and ultimately promote the mental health of nursing students.

## Limitations

However, there are several limitations inherent to this research. Initially, the study's selection of subjects is confined to two universities within a single province, which may impose certain geographical limitations on the sample and potentially impact the generalizability of the findings. Subsequent research could extend its scope to encompass a variety of universities across multiple regions to enhance the general applicability of the outcomes. Additionally, the study relies on self-reporting, which is susceptible to bias due to social desirability effects. Future inquiries could benefit from a multifaceted approach, incorporating assessments from peers and educators, among other methodologies. Besides, this research only uses Harman's single-factor test to assess CMB. In future studies, we intend to use multiple formulas to detect CMB, such as Confirmatory Factor Analysis and Exploratory Factor Analysis. Lastly, the cross-sectional design employed in this research restricts the ability to draw causal conclusions. Future studies might consider a longitudinal approach to explore the evolving causal dynamics between perfectionism and interpersonal sensitivity.

## Conclusion

Our study showed that there is a significant positive link between maladaptive perfectionism and interpersonal sensitivity. Coping styles and subjective well-being can play not only standalone intermediaries between maladaptive perfectionism and interpersonal sensitivity but also a chain mediating role between these factors; ie, Individuals who possess elevated levels of maladaptive perfectionism tend to be more prone to adopting coping styles that are detrimental to their well-being, which reduces their level of individual subjective well-being and further increases the possibility of them having a higher level of individual interpersonal sensitivity. Therefore, educational institutions can utilize mental health assessments to identify nursing students' levels and types of perfectionism. Based on these evaluations, they can offer tailored counseling and intervention programs to help students recognize and manage their perfectionistic tendencies. Additionally, schools can enhance nursing students' professional competencies and communication skills through curriculum planning, stress management, and coping strategy training. Such skills development is expected to improve students' coping abilities, psychological adjustment, and subjective well-being, ultimately reducing interpersonal sensitivity.

## Data Sharing Statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

## Ethics Statement

The study was conducted following the Declaration of Helsinki and approved by the Institutional Review Board of Henan Provincial Key Laboratory of Psychology and Behavior (ID number: 20220107001). All participants gave their voluntary written informed consent before study participation. Participation was voluntary, and all data were handled confidentially.

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## Disclosure

Guangli Lu was the first author and Yueming Ding was the co-first author. The authors declare that they have no competing interests.

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