The mediating role of perceived prejudice in the relationship between self-esteem and psychological distress among Chinese male nursing students

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ABSTRACT

Male nursing students may experience social prejudice, which may lead to psychological distress. However, few quantitative studies have focused on their mental health. This study aimed to explore the relationship among self-esteem, perceived prejudice, and psychological distress in male nursing students, and compare differences in self-esteem, perceived prejudice, and psychological distress, as well as the relationships among these variables between male nursing students who selected nursing as their first choice for a major and those who did not. A survey based on a cross-sectional design was used. Self-esteem, perceived prejudice, and psychological distress of 460 male nursing students in China were measured using the Rosenberg Self-esteem Scale, a self-developed questionnaire, and the Kessler 10, respectively. Structural equation modeling was adopted to test the theoretical model regarding the relationships among self-esteem, perceived prejudice, and psychological distress. The results indicated that 82.2% of the participants reported psychological distress. The participants who did not select nursing as their first choice for a major reported a significantly higher perceived prejudice, higher prevalence of psychological distress, and lower self-esteem. Therefore, when selecting male students, nursing schools must prioritize those who selected nursing as their first choice for a major.

Introduction

Male nursing students experience high overall stress during the course of their study (Watson et al., 2009). The most prominent stressor is the pervasive viewpoint that men are less suited to the nursing occupation compared with women. Men who choose this career are also usually stereotyped as effeminate, troublemakers, or gay (Adeyemi-Adelanwa, Barton Gooden, Dawkins, & Lindo, 2016). Owing to the social prejudice in China that nursing is an occupation with low social status (Zhang et al., 2014), combined with the Chinese traditional feudal culture in which men usually have a higher social status than women (Hu, 2013), Chinese male nursing students may experience more prejudice. More specifically, according to most Chinese people, men should choose an occupation with a higher social status (e.g., civil servants and doctors). Those who choose occupations with low social status (e.g., nursing and hairdressing) may be regarded as incapable of pursuing "better" careers. In summary, the prejudice against Chinese male nursing students may come from the stereotype of nursing as a female occupation and that nursing is an occupation with low social

status, as well as the Chinese traditional culture according to which men are not expected to choose an occupation with low status. Male nursing students are subjected to these prejudices, which may be expressed by their peers (e.g., female classmates, students of other majors) and their own male colleagues (Abushaikha, Mahadeen, Abdelkader, & Nabolsi, 2014).

Being subjected to these prejudices could be regarded as a social penalty for violating stereotyped expectations (Moss-Racusin, Phelan, & Rudman, 2010). These prejudices can result in experiences of ridicule, stigma, isolation, and loneliness for male nursing students (Clow, Ricciardelli, & Bartfay, 2015). Moreover, because of these prejudices, they may encounter various barriers to learning in nursing education programs (O'Lynn, 2004). For example, during clinical practice, especially in courses such as obstetrics and gynecology, female patients may refuse to be cared for by male nurses (Buthelezi, Fakude, Martin, & Daniels, 2015; Melorose, Perroy, & Careas, 2013). These prejudices against male nursing students contribute to the low rate of enrollment of male nursing students (for instance, Zhejiang University enrolled only 10 male nursing students from 1995 to 2005) and number of male

nurses (< 1%) in China (Wang et al., 2011). In addition, these prejudices can make male nursing students especially vulnerable to psychological distress or other more serious mental health problems (Thoits, 2013; Watson et al., 2009).

The vulnerability of male nursing students to psychological distress due to these prejudices may, to a certain degree, explain their higher attrition rate compared with their female counterparts (McLaughlin, Muldoon, & Moutray, 2010; Vaismoradi, Salsali, & Ahmadi, 2011). For example, a study in the United Kingdom found a higher rate of drop out or change of major among male (28.1%) than female (10.7%) nursing students (McLaughlin et al., 2010). The high rate of drop out among male nursing students substantially contributes to the current low rate of male nurses in nursing staff in both Western and Eastern countries (Adeyemi-Adelanwa et al., 2016; Wang et al., 2011), which, in turn, exacerbates the current nursing workforce shortage globally.

Another adverse outcome of psychological distress for male nursing students is the negative effect on their interpersonal relationships, social activities, and academic performance (Li, Xu, & Liu, 2014). For instance, students with mental health problems, including psychological distress, tend to have poorer relationships with their classmates and faculty members. They are also less likely to participate in campus clubs and activities. In addition, their average grades and graduation rates are often lower than those of psychologically healthy students (Regehr, Glancy, & Pitts, 2013). Therefore, understanding the mental health state of male nursing students facing pervasive and diverse prejudice-related stressors is necessary. However, to the best of our knowledge, few quantitative studies have examined mental health in this population, especially in China.

As mentioned above, prejudice against one group can lead to either psychological distress or a more serious form of mental disorder among its members (Thoits, 2013). This relationship has been found in various groups, such as international students (Wei, Ku, & Russell, 2008) and foreign immigrants (Hassan, Rousseau, & Moreau, 2013). Similarly, the prejudices against male nursing students also constitute a great challenge in maintaining their mental health. Therefore, the first hypothesis of this study is that perceived prejudice exerts a direct positive effect on psychological distress in male nursing students (H1).

Two theoretical models describe the relationship between self-esteem (the positive or negative belief about oneself) and psychological distress. Specifically, the vulnerability model argues that negative evaluations of the self (i.e., low self-esteem) constitute a causal risk factor for depression (Beck, 1967). Meanwhile, the scar model states that low self-esteem is a consequence of depression because the latter may lead to permanent scars on one's self-concept (Zeiss & Lewinsohn, 1988). A meta-analysis of 77 longitudinal studies supported the vulnerability model (Sowislo & Orth, 2012). More importantly, self-esteem is a trait and difficult to change even through artificial interventions in adolescents, whose personalities are more malleable than those of adults (Hauge, Kvalem, Berget, Enders-Slegers, & Braastad, 2014). Thus, the second hypothesis of this study is that higher self-esteem can directly predict low psychological distress (H2).

Although the buffering role of self-esteem in the relationship between perceived prejudice and depression has been examined widely (Corning, 2002), few studies have explored its buffering role through changing one's cognitive appraisal of prejudice, which is also important in buffering the influence of a negative stressor (Lazarus & Folkman, 1984). Specifically, an individual with high self-esteem may reduce stress by mitigating the perceived threat induced by the prejudice (Mann, Hosman, Schaalma, & Vries, 2004). Therefore, the third hypothesis of this study is that higher self-esteem can lead to low perceived prejudice (H3).

In China, high school students can choose from several universities and majors on the application form according to their scores on the National College Entrance Examination (NCEE). A university that is popular for a specific major, such as clinical medicine, tends to prioritize those with higher scores on the NCEE from the many students who

selected such major as their first choice. Therefore, in most situations, a university assigns a student's major. If students applying for a specific major are rejected because their scores are lower than those of their competitors, the university then assigns them to a different major that is not their first choice. In many universities in China, the number of students enrolling in nursing as their first choice is lower than that of places available. Consequently, nursing schools eventually enroll students who are being transferred from other popular majors of the same university even if nursing is not their choice or is their second or third choice. These students may be less likely to understand and accept the nursing career compared with those who selected nursing as their first choice for a major, owing to the former's lack of information regarding the nursing profession (Dante et al., 2014). Accordingly, they may also have different perceived prejudice and mental health states. Moreover, considering the social prejudices against males who choose nursing as an occupation, a male student's self-esteem may influence his decision to select nursing as his first choice for a major. Therefore, the fourth hypothesis of this study is that self-esteem, perceived prejudice, and psychological distress, as well as the relationships among these variables differ between male nursing students who selected nursing as their first choice for a major and those who did not (H4).

Therefore, the first aim of this study is to test the theoretical model (i.e., H1, H2, and H3; please refer to Fig. 1) regarding the relationships among self-esteem, perceived prejudice, and psychological distress. The second aim is to compare differences in self-esteem, perceived prejudice, and psychological distress, as well as the relationships among these variables between male nursing students who selected nursing as their first choice for a major and those who did not (H4).

Methods

Design

A cross-sectional survey was employed in this study. This study had been approved by our institution's committee for ethics in research. All procedures performed in this study involving human participants were in accordance with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

Sample and data collection

Participants were from four universities located in the cities of Jinan, Taian, Jining, and Weifang that offered a bachelor's program and two colleges offering an advanced diploma program in Jinan City in Shandong Province, China. Students in the bachelor's programs need higher National College Entrance Examination (NCEE) scores; they enroll in longer learning periods (4-year or 5-year bachelor's programs vs. 3-year advanced diploma programs) to get their bachelor's degrees and have a greater employment advantage over those in the advanced diploma program. The surveyors visited these universes/colleges, identified male nursing students, and asked them to complete the questionnaires by paper and pencil onsite once they agreed to participate in the study. Each participant was given a gift after completing the questionnaire to improve the valid response rate. A written or oral informed consent was received from all participants. Anonymity was ensured by not collecting students' names, student identification numbers, and all other identification information in the questionnaires. Of the 500 questionnaires distributed, 460 valid questionnaires were obtained, representing a 92% response rate. Participants' mean age was 20.67 years ($SD = 1.35$ years), and nursing was the first choice for 50% of them.

Instruments

The Rosenberg Self-esteem Scale (RSE) (Rosenberg, 1965) was employed to measure male nursing students' self-esteem. The one-
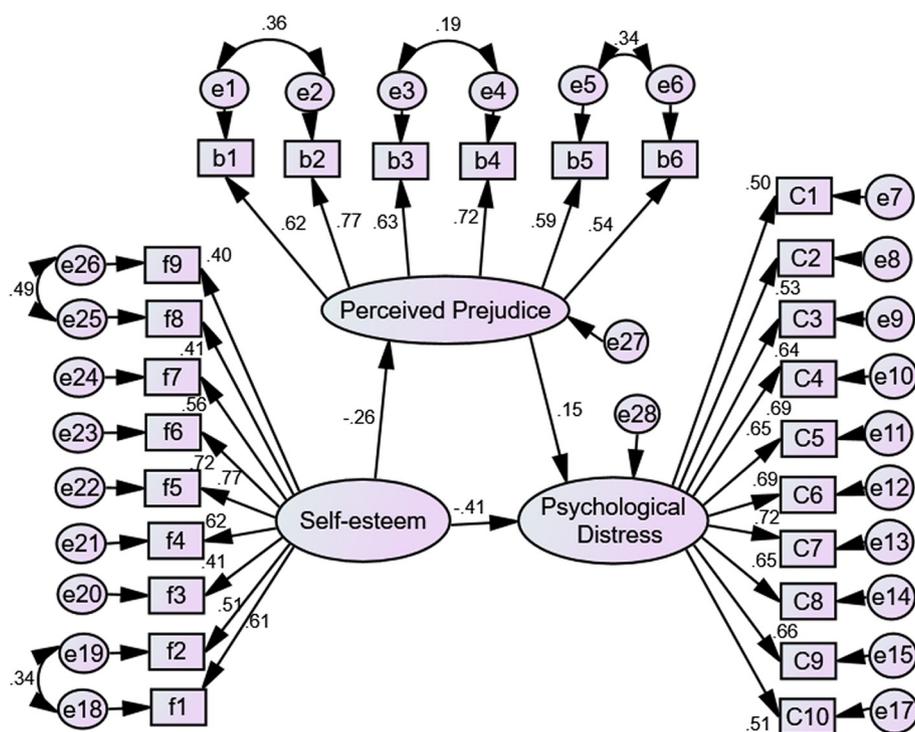
Fig. 1. Results of the structural equation modeling of the relationships among self-esteem, perceived prejudice, and psychological distress using the entire sample.

dimensional construct of this measure remains stable for both adults and adolescents (Corwyn, 2000). The RSE is scored on a 4-point scale ranging from 1 (strongly disagree) to 4 (strongly agree). In this study, the construct validity of this measure was retested using structural equation modeling (SEM). Results indicated that one item ("I feel that I do not have much to be proud of") had a factor loading of 0.35. Thus, this item was excluded from the final data analysis. The factor loadings for the other nine items on this scale are provided in Fig. 1. The lowest factor loading was 0.40, indicating acceptable construct validity of the revised RSE. The Cronbach's α for the revised RSE was 0.81, indicating satisfactory internal consistency.

A six-item questionnaire (see Appendix A) was developed to assess male nursing students' perceived prejudice. Initially, nine items were developed to assess perceived prejudice by referring to the exiting literature (Meadus & Twomey, 2011; Wang et al., 2011). Each item was rated on a 4-point scale ranging from 1 (strongly disagree) to 4 (strongly agree). The construct validity of this questionnaire was examined using SEM. The results showed that three items had considerably low factor loadings (< 0.40). Therefore, they were excluded from the final analysis. As shown in Fig. 1, the factor loadings of the other six indicator variables were no < 0.54. The Cronbach's α of this questionnaire was 0.83.

Psychological distress was measured using the 10-item Kessler Psychological Distress Scale (K10). A previous study (Huang, Xia, Sun, Zhang, & Wu, 2009) have confirmed the reliability and validity of the Chinese version of this scale. Each item is rated on a 5-point scale ranging from never felt (1) to feel all the time (5). SEM was used to test the construct validity of this scale (see Fig. 1); the scale's minimum factor loading was 0.50. The Cronbach's α of the K10 was 0.87 in this study. A total score (i.e., the sum of the responses) of 16 or more was considered to be moderate to serious psychological distress (Department of Human Services Victoria, 2008).

Data analysis

All analyses were conducted using SPSS 18.0 and AMOS 18.0 (IBM Corporation, Armonk, New York, USA). The chi-square test was

performed to examine differences in the prevalence of psychological distress (i.e., the percentage of K10 ≥ 16). Independent-samples t-tests (effect size estimates were calculated using Cohen's d) were used to examine differences in self-esteem, perceived prejudice, and psychological distress (i.e., K10 score) between students who selected nursing as their first choice for a major and those who did not. In addition, Pearson's product-moment correlations among self-esteem, perceived prejudice, and psychological distress were analyzed.

Next, SEM was employed to test the theoretical model regarding the relationships among self-esteem, perceived prejudice, and psychological distress in male Chinese nursing students. Specifically, bias-corrected bootstrapping (2000 replications) was performed to examine the effect of self-esteem on psychological distress via the mediating effect of perceived prejudice. Several indices were adopted to test whether the hypothesized model fit the covariance structure of the data. Since the sensitivity of χ^2 to large sample size, we adopted normed chi-square (χ^2/df) to assess model fit (Hooper, Coughlan, & Mullen, 2008). A $\chi^2/df < 3$ indicates an excellent fit. Moreover, a root mean square error of approximation (RMSEA) ≤ 0.05, a goodness of fit index (GFI) ≥ 0.90, comparative fit index (CFI) ≥ 0.90, and Tucker–Lewis index (TLI) ≥ 0.90 indicate a good fit.

Finally, the multiple group analysis feature of SEM was used to examine whether the relationships among self-esteem, perceived prejudice, and psychological distress differed between students whose first choice was nursing and those for whom it was not. In particular, the multiple group analysis continuously restricts the measurement weights, structural weights, structural covariances, structural residuals, and measurement residuals, and forces them to be consistent across different groups, to test the model's invariance (see Fig. 1). If these groups exhibited differences in these relationships, the SEM analyses, including the mediating effect analysis using bias-corrected bootstrapping, were conducted separately for these two groups.

Results

The prevalence of psychological distress among Chinese male nursing students was high at 82.2%. The percentages of male nursing

Table 1

Differences of psychological distress, self-esteem and perceived prejudice between two groups.

First-choice major	n (%)	Prevalence of psychological distress (≥16) (n, %)	Psychological distress (M ± SD)	Self-esteem (M ± SD)	Perceived prejudice (M ± SD)
Nursing	230(50)	179(77.8)	20.67 ± 6.14	3.09 ± 0.44	2.36 ± 0.56
Others	230(50)	199(86.5)	21.57 ± 5.37	2.99 ± 0.37	2.64 ± 0.55
P		0.015	0.090	0.008	0.000

Table 2

Means, standard deviations, ranges, and correlations of study variables ($N = 460$).

	Mean	SD	Range	1	2	3
1. Self-esteem	3.04	0.41	3	1		
2. Perceived prejudice	2.50	0.57	3	−0.27**	1	
3. Psychological distress	21.12	5.78	40	−0.40**	0.25**	1

** $P < 0.01$.

students from the first, second, and third years were 46.5%, 41.2%, and 12.2%, respectively, and they reported no significant difference in terms of prevalence of psychological distress. Although participants who did not choose nursing as their first choice on the application form for the NCEE were more likely to exhibit psychological distress (86.5%) compared with those who selected nursing as their first choice (77.8%; $\chi^2_{(1)} = 5.94$, $p = 0.015$), the former did not report significantly elevated psychological distress ($t_{(450)} = 1.678$, $p = 0.09$). Moreover, they reported significantly lower self-esteem and higher perceived prejudice (see Table 1).

The means, standard deviations, ranges, and correlations of the variables are presented in Table 2. These results indicate that psychological distress was negatively and positively associated with self-esteem and perceived prejudice, respectively.

The fit indices for the theoretical model were not well: $\chi^2/df = 3.15$, $p < 0.001$, GFI = 0.86, CFI = 0.85, TLI = 0.83, RMSEA = 0.07. To improve model fitness, five pairs of error terms of the 10 items were correlated according to the modification index. Consequently, the final model yielded a good fit with the data ($\chi^2/df = 2.17$, $p < 0.001$, GFI = 0.91, CFI = 0.92, TLI = 0.91, RMSEA = 0.05). Fig. 1 shows that self-esteem had direct negative influences on both psychological distress ($\beta = -0.41$, $p < 0.001$) and perceived prejudice ($\beta = -0.26$, $p < 0.001$). Perceived prejudice led to a significant increase in psychological distress ($\beta = 0.15$, $p < 0.01$).

According to the results of the multiple group analysis, there are significant differences in goodness-of-fit statistics between the model with "restricted structural weights" and that with "restricted structural covariances" (see Table 3), this indicates that the relationships among self-esteem, perceived prejudice, and psychological distress were different between Group A, comprising students whose first choice was nursing, and Group B, comprising students whose first choice was not nursing (see Fig. 2). More specifically, the direct negative effects of self-esteem on psychological distress were similar in these two groups (−0.42 vs. −0.38). However, although self-esteem played a comparatively less important role in decreasing perceived prejudice (−0.20

vs. −0.29), perceived prejudice played a comparatively more important role in increasing psychological distress (0.17 vs. 0.13) among students who selected nursing as their first choice for a major compared with those who did not.

The results of the analysis for the indirect effects of self-esteem on psychological distress are presented in Table 4. These results indicate that when using the entire sample, self-esteem's effect on psychological distress was direct ($\beta = -0.41$, $p < 0.01$) and indirect ($\beta = -0.04$, $p < 0.01$) through the mediating role of perceived prejudice. In the group of students who selected nursing as their first choice for a major, self-esteem had both a direct ($\beta = -0.42$, $p < 0.001$) and indirect effect ($\beta = -0.03$, $p < 0.05$) on psychological distress. However, in the group of students who did not select nursing as their first choice, only the direct effect of self-esteem on psychological distress was significant ($\beta = -0.38$, $p < 0.01$), and its indirect effect through the mediating role of perceived prejudice was only significant at a borderline significance level ($\beta = -0.04$, $p = 0.076$). Additionally, the total effect of self-esteem on reducing psychological distress was slightly stronger among students who selected nursing as their first choice for a major compared with those who did not (−0.45 vs. −0.42).

Discussion

Of the participants surveyed, 82.2% reported psychological distress. This result suggests that male nursing students experience severe psychological distress, which is harmful to their physical health, interpersonal relationships, academic performance, and intention to stay in nursing programs. However, nursing educators did not pay enough attention to the male students' mental health, and they also did not take specific and effective measures to support the male nursing students until now. This suggests that it is necessary at the very beginning of learning to provide male nursing students with lectures or training on how to cope with mental health problems.

All the four hypotheses were verified. First, perceived prejudice had a direct positive effect on psychological distress among male nursing students, which was consistent with the findings of previous studies among other populations (Hassan et al., 2013; Wei et al., 2008). However, this effect was not large. Hence, it is suggested that other stressors may contribute to the psychological distress experienced by the participants. For example, male nursing students were also confronted with academic difficulties (Abushaikha et al., 2014). Considering the negative impact of perceived prejudice on mental health in male nursing students, nursing educators could reduce their perceived prejudice to a certain extent by emphasizing the essence and great

Table 3

Goodness-of-fit statistics for the multiple group analysis.

Goodness-of-fit statistics	x^2 (df)	P	$\triangle x^2$ (df)	P	GFI	CFI	TLI	RMSEA
Model with no restrictions	938.31(534)	0			0.86	0.90	0.88	0.04
Model with restricted measurement weights	953.17(556)	0	14.86(22)	0.868	0.86	0.90	0.89	0.04
Model with restricted structural weights	954.28(559)	0	1.11(3)	0.774	0.86	0.90	0.89	0.04
Model with restricted structural covariance	961.13(560)	0	6.85(1)	0.009	0.86	0.90	0.89	0.04
Model with restricted structural residuals	963.52(562)	0	2.40(2)	0.302	0.86	0.90	0.89	0.04
Model with restricted measurement residuals	1039.02(592)	0	75.49(30)	0.000	0.85	0.89	0.88	0.04

GFI, goodness of fit index; CFI, comparative fit index; TLI, Tucker Lewis index; RMSEA, root mean square error of approximation.

A: Nursing as the first-choice major

Self-esteem → Perceived Prejudice: -0.20*
Perceived Prejudice → Psychological Distress: 0.17*
Self-esteem → Psychological Distress: -0.42***

X^2/df =1.67, GFI = 0.88, CFI = 0.92, TLI = 0.91, RMESA = 0.05

B: Nursing not as the first-choice

Self-esteem → Perceived Prejudice: -0.29**
Perceived Prejudice → Psychological Distress: 0.13
Self-esteem → Psychological Distress: -0.38***

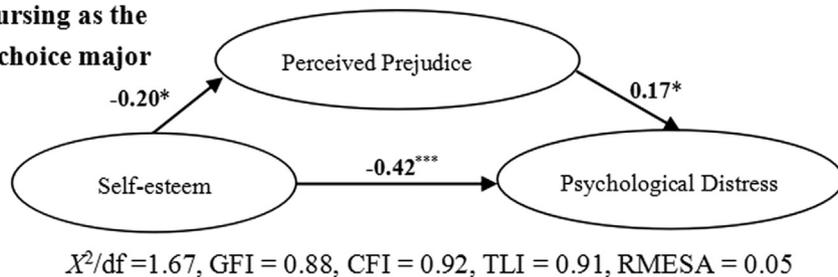X^2/df =1.51, GFI = 0.89, CFI = 0.93, TLI = 0.92, RMESA = 0.05

Fig. 2. Differences in the relationships among self-esteem, perceived prejudice, and psychological distress between Group A (those who chose nursing as their first major) and Group B (those who chose nursing as their first major). All coefficients in the figures are standardized. Observed indicators for the latent factors are not shown. GFI: goodness-of-fit index, CFI: comparative fit index, TLI: Tucker Lewis index, RMSEA: root mean square error of approximation. **$p \le 0.01$, ***$p \le 0.001$.
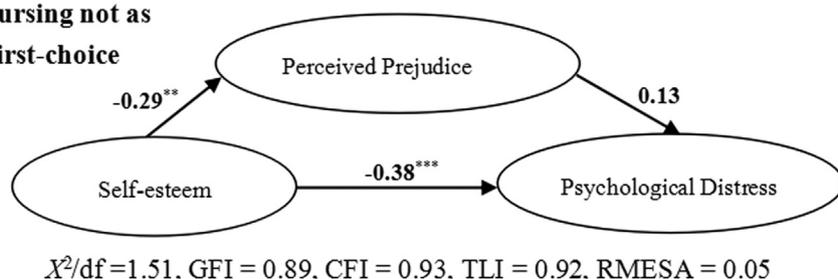
Table 4
The effect of self-esteem on psychological distress via perceived prejudice.

Group	N	Effects	Standardized coefficient	95% bias-corrected CI
Entire	460	Direct effect	−0.41	(−0.52, −0.29)**
		Indirect effect	−0.04	(−0.09, −0.01)**
		Total effect	−0.45	(−0.55, −0.33)**
A	230	Direct effect	−0.42	(−0.88, −0.27)***
		Indirect effect	−0.03	(−0.16, −0.001)*
		Total effect	−0.45	(−0.58, −0.30)***
B	230	Direct effect	−0.38	(−0.56, −0.19)***
		Indirect effect	−0.04	(−0.11, 0.005)
		Total effect	−0.42	(−0.58, −0.22)***

A, Nursing as first-choice major; B, Nursing not as the first-choice; CI-confidence interval.
* $P < 0.05$.
** $P < 0.01$.
*** $P < 0.001$.

value of nursing in human development and the unique advantage of male nurses in the future of the nursing occupation.

Second, self-esteem negatively predicted psychological distress, confirming the direct protective effect of self-esteem on mental health, as argued by the vulnerability model (Beck, 1967). Third, self-esteem can lead to lower perceived prejudice, confirming the indirect protective effect of self-esteem on mental health through changing the cognitive appraisal of negative stressors (Mann et al., 2004). These two results suggested that self-esteem is crucial for the mental health of male nursing students. Although self-esteem is a relatively stable trait over the long-term, some measures can be taken to improve students' short-term sense of self-worth. For example, the school of nursing could invite experienced male nurses to communicate with male nursing students to encourage them and increase their confidence about their prospects. The faculty could provide male nursing students with a supportive teaching and learning environment (Valizadeh et al., 2016) and address their confusion about nursing career development.

Fourth, male nursing students who selected nursing as their first choice for a major were less likely to express psychological distress and had lower perceived prejudice and higher self-esteem compared with those who did not. According to the theoretical model verified in the present study, a possible explanation to this finding is that male

students who have higher self-esteem usually have lower perceived prejudice against male nurses; as a result, they are more likely to select nursing as their first choice for a major. More specifically, the deep-rooted stereotype that nursing is associated with female occupation constitutes a great threat or harm to a male student's self-esteem. Consequently, only those with high self-esteem could manage this potential harm successfully, partly by perceiving less prejudice, thereby having the courage to pursue a nursing career. This process is similar to the "healthy worker effect," which claims that individuals select the occupation in which they are capable of performing the tasks in a specific work environment (Chowdhury, Shah, & Payal, 2017). Therefore, it is more sensible for a college or university to enroll students who prefer nursing as their first choice for a major. Even if nursing educational institutions have to enroll male students who did not choose nursing as their first choice because of difficulties in recruiting enough students who did, they must pay more attention to the latter as they pose higher risk for mental health problems.

The relationships among self-esteem, perceived prejudice, and psychological distress differed between students who selected nursing as their first choice for a major and those who did not. On the one hand, self-esteem directly reduced psychological distress more in the students who selected nursing as their first choice for a major than those who did not. On the other hand, self-esteem also indirectly reduced psychological distress through decreasing perceived prejudice in the students who selected nursing as their first choice for a major. In contrast, self-esteem did not indirectly reduce psychological distress by decreasing perceived prejudice among the students who did not select nursing as their first choice for a major. Therefore, self-esteem had a greater protective effect on mental health for students who selected nursing as their first choice for a major than for those who did not. However, this difference was small, suggesting that more research is needed to verify this result.

The role of self-esteem in protecting mental health also has important implications for the enrollment of male nursing students in nursing educational institutions. Specifically, because of the persistence of social culture, especially the gender-based stereotype that nursing is a "women's occupation," the social prejudice faced by male nursing students may continue. Consequently, these prejudices will result in persistent challenges to their mental health. Therefore, it would be beneficial for nursing educational institutions to select men with higher

self-esteem as nursing students because of their increased likelihood of perceiving less prejudice, maintaining good mental health, achieving high levels of performance in the subject matter, and becoming better nurses in the future despite confronting a multitude of social prejudices (McLaughlin et al., 2010) and a less than ideal nursing educational environment (O'Lynn, 2004). This study found that male students with higher self-esteem are more prone to selecting nursing as their first choice for a major, and their self-esteem also exerted more protective effects on their mental health. Therefore, it is both simple and efficient to enroll such male students in nursing programs.

Five pairs of covariance parameters were added in the final model (see Fig. 1). Because these correlations of error terms were supported with theoretical justification, so this practice is generally acceptable (Hooper et al., 2008). For example, the correlation of error terms for f8 ("I really feel that I am very useless") and f9 ("At times I think I am no good at all") may be related to a depressive personality trait. Hence, the correlation of their error terms is theoretically reasonable.

Undoubtedly, this study has limitations. First, a causal relationship among the variables in the model could not be verified because of the cross-sectional design. Second, considering the influence of the unique traditional feudal culture of China on prejudice against male nursing students, the results of this study may not be extrapolated to other countries. Third, the relationships among self-esteem, perceived prejudice, and psychological distress may be affected by other factors (e.g., ethnicity), which must be explored in future studies. Fourth, although the anonymity of the participants was guaranteed to reduce the influence of socially desirable responses related to a self-report measurement, it is still difficult to avoid the measurement errors in this study.

Conclusions

Chinese male nursing students exhibited high psychological distress. However, those who had chosen nursing as their first major were less likely to experience psychological distress, had higher self-esteem, and had lower perceived prejudice. Self-esteem can protect the mental health of these individuals through both decreasing the psychological distress directly and reducing perceived prejudice, which, in turn, has a positive effect on psychological distress. Therefore, men with higher self-esteem or those who choose nursing as their first major must enter a nursing program as they will perceive less prejudice and be less likely to experience psychological distress.

Funding

Declaration of Competing Interest

The authors declare that they have no competing interests.

Appendix A

The male nursing students' perceived prejudice questionnaire.

Items	Strongly disagree	Disagree	Agree	Strongly agree
1. The public perception is that only women are suitable to be nurses.				
2. The public perception is that men are not suitable to be nurses.				
3. Most people around me believe that women are more suitable to study nursing than men.				
4. Most people around me believe that boys are not suitable to study nursing.				
5. When I interact with people, I do not want them to know that I am majoring in nursing.				
6. My major is an obstacle to my love and marriage.				

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