

The effects of emotional intelligence on ethical sensitivity in Chinese nursing interns: the mediating role of professional identity

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Abstract

Background

Ethical sensitivity represents a core nursing competency for addressing clinical ethical dilemmas. While emotional intelligence contributes to the development of ethical sensitivity, existing research predominantly examines direct EI–ethical sensitivity links, neglecting critical mediating mechanisms. This study reveals the distinctive mediating role of professional identity among Chinese nursing students, establishing a theory–practice nexus for developing integrated emotional intelligence–professional identity educational frameworks.

Methods

In this cross-sectional study, 308 nursing interns from three Chinese universities (April–June 2025) were recruited via convenience sampling. Data were collected via the Emotional Intelligence Scale, the Professional Identity Scale, and the Ethical Sensitivity Scale. Mediation analysis was performed via the PROCESS macro (Model 4) with 5,000 bootstraps.

Results

The average scores of the nursing interns were 77.87 ± 14.31 for emotional intelligence, 57.01 ± 10.95 for professional identity, and 37.66 ± 5.77 for ethical sensitivity. Ethical sensitivity was positively correlated with emotional intelligence ($r = 0.294, p < 0.001$) and professional identity ($r = 0.365, p < 0.001$). Furthermore, emotional intelligence showed a significant direct effect on nursing interns' ethical sensitivity ($B = 0.073, p < 0.01$). Professional identity mediated the indirect pathway from emotional intelligence to ethical sensitivity ($B = 0.068, p < 0.001$).

Conclusions

Professional identity mediates the relationship between emotional intelligence and ethical sensitivity. Thus, cultivating emotional intelligence and professional identity may offer a dual-pathway strategy to enhance ethical sensitivity among nursing students in China, thereby strengthening their capacity to address clinical ethical challenges and make informed ethical decisions.

Introduction

Nurses confront escalating ethical challenges as frontline guardians of patient safety amid increasingly complex healthcare landscapes [1]. Ethical sensitivity enables nursing professionals to proactively identify ethical issues before conflicts manifest. This critical competency involves the sensitive

perception of others' needs, the evaluation of adherence to ethical codes, and the assessment of potential adverse consequences of actions [2].

High ethical sensitivity facilitates optimal ethical decision-making, reduces work-related stress, and mitigates turnover intentions [3]. Evidence confirms that nurses with heightened ethical sensitivity better identify clinical ethical dilemmas and safeguard patient rights through principled decisions [4]. Undergraduate internships represent a pivotal transition where limited clinical exposure coincides with students' first encounters with real patients and tangible ethical conflicts [5]. As future nursing workforce members, interns require robust ethical sensitivity, yet current evidence indicates that only moderate levels exist [6, 7], necessitating exploration of enhancement strategies to improve ethical competence.

Emotional intelligence (EI), defined as the ability to recognize, understand, regulate, and utilize emotions to guide decisions, is integral to ethical nursing practice [8]. Beyond facilitating personal emotion regulation, EI shapes empathic responses during ethical decision-making [9]. Empirical studies have confirmed that nurses with greater EI more accurately discern patients' emotional needs in ethical contexts and demonstrate superior ethical sensitivity when confronting dilemmas [10, 11]. However, existing research predominantly examines direct EI–ethical sensitivity links, neglecting critical mediating mechanisms.

Professional identity reflects individuals' cognitive identification with their professional role, emotional commitment, and internalization of professional values, which form the psychological foundation for ethical practice [12]. The evidence suggests that individuals with higher EI, owing to enhanced emotion recognition and management capabilities, develop stronger professional identities [13]. Similarly, nursing students with elevated EI better appreciate nurses' emotional value, humanistic spirit, and societal significance, thereby internalizing professional ethics as personal conduct standards [14].

Studies indicate that nursing students with stronger professional identities more readily internalize their ethical values, exhibiting heightened sensitivity and responsibility during ethical conflicts [15]. An enhanced professional identity further strengthens sensitivity to ethical norms and compliance willingness, promoting proactive ethical conflict identification and appropriate action [16]. On the basis of social cognitive theory, we propose that professional identity mediates the link between EI and ethical sensitivity, bridging emotional competence with ethical behavior.

This study investigates how EI influences ethical sensitivity among Chinese student nurses, with an emphasis on the mediating role of professional identity. The findings will enrich theoretical frameworks for the development of ethical competence in nursing and provide empirical support for optimizing curricula, designing targeted interventions, and cultivating nurses with enhanced ethical sensitivity, stable professional identities, and advanced emotional capabilities.

Methods

Design and aim

This cross-sectional study examined the relationships among EI, professional identity, and ethical sensitivity and assessed the mediating role of professional identity in the relationship between EI and ethical sensitivity.

Participants

Senior undergraduate nursing interns were recruited via convenience sampling from three public universities in Guangdong, China (April–June 2025). The inclusion criteria were as follows: (1) Full-time nursing undergraduates with ≥ 1 month of clinical internship. (2) Provision of informed consent. The exclusion criteria were as follows: (1) Communication impairments. (2) Absence from clinical duties due to academic/medical leave.

Sample size

The sample size collected in this study was calculated according to Kendall's cross-sectional survey formula $N \times (10-15)$ [17]. The sample size was more than 10 times the number of independent variables, which were 23 in this study (including 11 items in the General Information Questionnaire, 4 dimensions of the EI Scale, 5 dimensions of the Professional Identity Scale, and 3 dimensions of the Ethical Sensitivity Scale), and considering the rate of 20% invalid questionnaires, this study requires a minimum of 276 participants. A total of 322 questionnaires were collected. After excluding 14 invalid responses due to patterned or inconsistent answers, 308 valid questionnaires were retained for the final analysis, resulting in a valid response rate of 95.65%.

Instruments

General Information Questionnaire

A self-administered demographic questionnaire was used to assess 11 variables: gender, age, religious affiliation (yes/no), residence (urban/rural), family with only child (yes/no), parents employed in healthcare professions (yes/no), voluntary choice of the nursing major (yes/no), academic performance ranking within major (top 25%, middle, bottom 25%), attitudes toward being a nursing major (like, moderate, dislike), willingness to work in nursing (yes/no), and experience in learning nursing ethics (yes/no).

Wong & Law EI Scale (WLEIS-C)

The Chinese adaptation of the Wong and Law EI Scale (WLEIS-C) [18] was utilized in this study. This 16-item instrument measures four dimensions: self-emotion appraisal (4 items), others' emotion appraisal (4 items), use of emotion (4 items), and regulation of emotion (4 items). A 7-point Likert scale is employed, ranging from 1 ("strongly disagree") to 7 ("strongly agree"), yielding a total score ranging from 16–112. Higher scores indicate greater EI. The scale demonstrated excellent reliability in Chinese populations, with a Cronbach's α coefficient of 0.948. In this study, the Cronbach's α for the scale was 0.938.

Professional Identity Scale for Nursing Students (PISNS)

This study employed the Professional Identity Scale for Nursing Students developed by Hao et al. [19]. The scale comprises 17 items across five dimensions: professional self-image (6 items), benefit of retention and risk of turnover (4 items), social modeling (2 items), social comparison and self-reflection (3 items), and independence of career choice (2 items). Each item is rated on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), with Item 12 reverse-scored. The total scores ranged from 17–85, where higher values indicate stronger professional identity. The scale has demonstrated good reliability and validity, with a Cronbach's α coefficient of 0.827 and a split-half reliability of 0.842. In the present study, the Cronbach's α coefficient was 0.928.

Ethical Sensitivity Questionnaire for Nursing Students (ESQ-NS)

This study utilized the Chinese version of the Ethical Sensitivity Scale, originally developed by Muramatsu et al. [20], which uses survey data from nursing students across 10 Japanese universities and was subsequently cross-culturally validated by Yu [21]. The scale comprises 13 items across four dimensions: respect for individuals, reasonable care, distributive justice, and maintaining patient confidentiality. Each item is rated on a 4-point Likert scale ranging from 1 (strongly disagree) to 4 (strongly agree), with a total score ranging from 13 to 52. Higher scores indicate higher levels of ethical sensitivity. The Cronbach's α coefficient for the Chinese version was reported as 0.821, indicating good reliability. In the present study, the Cronbach's α coefficient was 0.788.

Procedure

Data collection utilized the Wenjuanxing online survey platform, with electronic questionnaires distributed via WeChat to academic advisors at three participating universities. Advisors forwarded survey links to eligible nursing students. All participants received written documentation outlining the study purpose, procedures, voluntary participation terms, anonymity guarantees, and freedom to withdraw without consequence. Electronic informed consent was obtained prior to survey access. Responses underwent validity screening postcollection, excluding submissions meeting any of the following criteria: (1) uniform responses across all items; (2) completion time < 2 minutes (against an average 5–8 minute benchmark); or (3) systematic response patterns or inconsistencies.

Ethical considerations

This study complied with the principles of the Declaration of Helsinki and the Measures for the Ethical Review of Life Science and Medical Research Involving Humans. Ethical approval was obtained from the Ethics Committee of Dongguan Eighth People's Hospital. Informed consent was obtained from all participants prior to data collection. Participation was entirely voluntary, and confidentiality and anonymity were strictly maintained.

Data analysis

Data analysis was performed via SPSS Statistics 26.0. Categorical variables are reported as frequencies and percentages, whereas continuous variables are presented as the means $\pm$ standard deviations. Independent samples t tests or one-way ANOVA were conducted to examine differences in ethical sensitivity scores among nursing interns with different demographic characteristics. Spearman correlation analysis was used to assess the associations among EI, professional identity, and ethical sensitivity. The indirect effect via professional identity was tested via Hayes' PROCESS macro (Model 4), with bootstrapping (5,000 resamples) generating bias-corrected 95% confidence intervals to quantify significance. $P \leq 0.05$ was regarded as statistically significant.

Results

Participants' demographic characteristics and their distribution by ethical sensitivity score

This study included 308 nursing interns. Among them, 263 (85.4%) were female, and 45 (14.6%) were male. The participants had a mean age of 21.29 ± 1.06 years (range: 19–25). With respect to residence, 175 (56.8%) lived in urban areas, and 133 (43.2%) lived in rural regions, with 263 (85.4%) being children with siblings. Few (3.9%) had parents employed in healthcare professions. The professional selection indicators revealed that only 130 (42.2%) voluntarily chose nursing, whereas 161 (52.3%) held mid-range academic rankings. Interest in nursing was predominantly “moderate” (64.9%), followed by “favorable” (25.6%) and “unfavorable” (9.4%). Willingness to work in nursing revealed that 243 (78.9%) intended to practice nursing post-graduation, whereas 65 (21.1%) did not. Most participants (94.8%) had received nursing ethics training. Univariate analysis revealed that significant differences in ethical sensitivity emerged for voluntary enrollment ($p < 0.001$), professional interest ($p < 0.001$), and willingness to work in nursing ($p = 0.040$), highlighting the impact of intrinsic motivation (Table 1).

Table 1
Demographic characteristics and ethical sensitivity scores (n = 308)

Characteristics	N(%)	Ethical sensitivity		
		Mean ± SD	<i>t/F</i>	<i>P</i>
Gender				
Male	45(14.6)	37.64 ± 6.07	-0.014	0.989
Female	263(85.4)	37.89 ± 5.51		
Age				
≤ 20	57(18.5)	37.96 ± 6.32	1.654	0.193
21–23	236(76.6)	37.67 ± 5.45		
≥ 24	15(4.9)	40.00 ± 7.96		
Religious				
Yes	16 (5.2)	36.20 ± 8.57	-0.733	0.464
No	292(94.8)	37.72 ± 5.59		
Residence				
Urban	175(56.8)	37.10 ± 5.13	-1.958	0.051
Rural	133(43.2)	38.39 ± 6.46		
Family with only child				
Yes	45 (14.6)	37.64 ± 7.19	-0.014	0.989
No	263(85.4)	37.65 ± 5.51		
Parents employed in healthcare professions				
Yes	12(3.9)	37.00 ± 5.64	-0.401	0.689
No	296(96.1)	37.68 ± 5.78		
Voluntary choice of the nursing major				
Yes	130(42.2)	39.58 ± 5.61	5.222	**0.000
No	178(57.8)	36.24 ± 5.49		
Academic performance ranking within major				
Top 25%	93(30.2)	37.32 ± 5.22	1.381	0.253
<i>Note: ***$p < 0.001$, *$p < 0.05$.</i>				

Characteristics	N(%)	Ethical sensitivity		
		Mean ± SD	<i>t/F</i>	<i>P</i>
Gender				
Middle	161(52.3)	37.45 ± 5.47		
Bottom 25%	54(17.5)	38.83 ± 7.32		
Attitudes toward being a nursing major				
favorable	79(25.6)	40.32 ± 5.59	12.921	**0.000
Moderate	200(64.9)	36.91 ± 5.21		
unfavorable	29(9.4)	35.55 ± 7.53		
Willingness to work in nursing				
Yes	243(78.9)	38.00 ± 5.51	2.058	*0.040
No	65(21.1)	36.35 ± 6.54		
Experience in learning nursing ethics				
Yes	292(94.8)	37.66 ± 5.59	0.066	0.947
No	16 (5.2)	37.56 ± 8.70		
<i>Note: ***p < 0.001, *p < 0.05.</i>				

EI Scores among Nursing Interns

The mean total score of EI among the nursing interns was 77.87 ± 14.31 , with an average item score of 4.87 ± 0.89 . The mean scores for each of the four dimensions were as follows: self-emotion appraisal (20.77 ± 3.96), others' emotion appraisal (18.35 ± 4.89), use of emotion (18.37 ± 4.73), and regulation of emotion (20.38 ± 4.04) (Table 2).

Table 2
Descriptive statistics of the EI scale (N = 308), M $\pm$ SD

Variables	Scale item number	Total subscale	Each item
Emotional intelligence (Total)	16	77.87 ± 14.31	4.87 ± 0.89
Self-emotion appraisal	4	20.77 ± 3.96	5.19 ± 0.99
Others' emotion appraisal	4	18.35 ± 4.89	4.59 ± 1.22
Use of emotion	4	18.37 ± 4.73	4.59 ± 1.18
Regulation of emotion	4	20.38 ± 4.04	5.10 ± 1.01

Professional identity scores among nursing interns

The mean total score of professional identity among the nursing interns was 57.01 ± 10.95 , with an average item score of 3.35 ± 0.64 . The mean scores for the five dimensions were as follows: professional self-image (19.49 ± 4.81), benefit of retention and risk of turnover (12.61 ± 3.22), social modeling (7.01 ± 1.73), social comparison and self-reflection (11.11 ± 2.05), and independence of career choice (6.79 ± 1.27) (Table 3).

Table 3
Descriptive statistics of the professional identity scale (N = 308), M $\pm$ SD

Variables	Scale item number	Total subscale	Each item
Professional identity (Total)	17	57.01 ± 10.95	3.35 ± 0.64
Professional self-image	6	19.49 ± 4.81	3.25 ± 0.80
Benefit of retention and risk of turnover	4	12.61 ± 3.22	3.15 ± 0.81
Social modeling	2	7.01 ± 1.73	3.51 ± 0.87
Social comparison and self-reflection	3	11.11 ± 2.05	3.70 ± 0.68
Independence of career choice	2	6.79 ± 1.27	3.39 ± 0.64

Ethical Sensitivity Scores among Nursing Interns

The mean total ethical sensitivity score among the nursing interns was 37.66 ± 5.77 , with an average item score of 2.90 ± 0.44 . The mean scores for the four dimensions were as follows: respect for individuals (13.04 ± 2.32), reasonable care (10.61 ± 2.28), distributive justice (9.13 ± 1.85), and maintaining patients' confidentiality (4.88 ± 1.67) (Table 4).

Table 4
Descriptive statistics of the ethical sensitivity scale (N = 308), M $\pm$ SD

Variable	Scale item number	Total Score	Each Item
Ethical Sensitivity (Total)	13	37.66 ± 5.77	2.90 ± 0.44
Respect for Individuals	3	13.04 ± 2.32	3.26 ± 0.58
Reasonable Care	3	10.61 ± 2.28	2.65 ± 0.57
Distributive Justice	3	9.13 ± 1.85	3.04 ± 0.62
Maintaining Patients' Confidentiality	4	4.88 ± 1.67	2.44 ± 0.83

Correlations among EI, professional identity, and ethical sensitivity

The correlation coefficient between EI and professional identity was ($r = 0.566, p < 0.001$), indicating a positive association between the two variables. EI was also positively correlated with ethical sensitivity ($r = 0.294, p < 0.001$). In addition, professional identity was positively associated with ethical sensitivity ($r = 0.365, p < 0.001$). These findings suggest that both EI and professional identity are significantly and positively related to ethical sensitivity (Table 5).

Table 5
Correlation analysis among EI, professional identity, and ethical sensitivity (N = 308)

Variables	Emotional Intelligence	Professional Identity	Ethical sensitivity
	<i>r</i>	<i>r</i>	<i>r</i>
Emotional Intelligence	1		
Professional Identity	0.566***	1	
Ethical sensitivity	0.294***	0.365***	1
<i>Note:</i> *** $p < 0.001$.			

Mediating role of professional identity in the relationship between EI and ethical sensitivity

The mediation analysis revealed that EI had a significant positive effect on professional identity ($B = 0.456, p < 0.001$), indicating that higher EI predicted stronger professional identity. Even when controlling for professional identity, EI maintained a direct positive association with ethical sensitivity ($B = 0.073, p < 0.01$), demonstrating that high-EI individuals' ethical awareness operated independently of professional identity. Concurrently, professional identity independently enhanced ethical sensitivity ($B = 0.150, p < 0.001$). The total effect of EI on ethical sensitivity was also significant ($B = 0.141, p < 0.001$), with professional identity mediating this relationship through a significant indirect effect ($B = 0.068$). These results confirm professional identity's mediating effect on the EI→ES pathway, whereas the persistent direct effect indicates that EI concurrently influences ethical sensitivity both directly and indirectly through professional identity enhancement. The model explained 35.5% of the variance in professional identity ($F = 168.27, p < 0.001$) and 17.5% of the variance in ethical sensitivity ($F = 32.37, p < 0.001$), providing a robust explanation of the relationships among these variables (Table 6, Fig. 1).

Table 6
Professional identity as a mediator between EI and ethical sensitivity (N = 308)

Effect	B	SE	t	LLCI	ULCI	β
Outcome: Professional Identity (Mediator)						
Constant	21.53	2.78	7.74	16.06	27.00	-
Emotional Intelligence	0.456	0.035	12.97	0.387	0.524	0.596
Outcome: ethical sensitivity (Direct & Indirect Effects)						
Constant	23.42	1.82	12.90	19.85	26.99	-
Emotional Intelligence (Direct)	0.073	0.026	2.80	0.022	0.124	0.181
Professional Identity (Mediator)	0.150	0.034	4.40	0.083	0.217	0.285
Total Effect of Emotional Intelligence on Ethical Sensitivity						
Emotional Intelligence (Total)	0.141	0.022	6.55	0.099	0.184	0.351
Indirect Effect through Professional Identity						
Emotional Intelligence → Professional Identity → Ethical Sensitivity	0.068	0.020	-	0.031	0.109	0.170
Note: B = unstandardized coefficient; β = standardized coefficient; LLCI/ULCI = 95% lower/upper level confidence interval. R^2 : Professional Identity = 0.355, Ethical Sensitivity = 0.175 (both $p < 0.001$).						

Discussion

This study investigated the relationships among EI, professional identity, and ethical sensitivity in nursing interns. This study provides novel evidence confirming professional identity's role as a partial mediator in the pathway linking EI to ethical sensitivity within this population. The results revealed significant positive associations of both EI and professional identity with ethical sensitivity. Furthermore, professional identity emerged as a significant mediating pathway through which EI influences ethical sensitivity.

EI Disparities and Curriculum Integration Needs

Nursing interns exhibited moderate overall EI, with notable dimensional disparities. While self-emotion appraisal scores were highest, competencies in others' emotion appraisal and emotion utilization were markedly lower. This self-other EI imbalance may stem from curricular bias prioritizing self-emotion management over recognizing complex patient affect. Studies show high-EI individuals excel at self-regulation via cognitive reappraisal yet lag in perceiving others' emotions due to working memory competition and social-cognitive biases (e.g., self-focus impairing empathy) [22–24]. This pattern warrants attention, as accurate emotion perception underpins ethical sensitivity, which involves both the

cognitive identification of ethical dilemmas and acute responsiveness to others' emotional cues [2]. Thus, embedding EI training (e.g., emotion-focused simulated interactions) into internships is critical [25]. This directly enhances other-emotion appraisal and regulation, boosting clinical communication and ethical decision-making [26].

Ethical Sensitivity: Context-Specific Patterns in China

Nursing interns' ethical sensitivity was moderate overall, which is consistent with domestic and international studies [27, 28]. Notably, dimensional analysis revealed disparities: the highest scores for "respect for individuals" reflected strong awareness of patient dignity, whereas the lowest scores for "maintaining confidentiality" indicated deficits in managing privacy-related ethical challenges, which aligns with the findings of Deng et al. on Chinese nursing students [29]. This likely stems from ethics education overemphasizing abstract theory while neglecting clinical dilemma exposure and scenario-based training [30]. Univariate analysis further revealed that voluntary career choice, professional interest, and career retention commitment were associated with significantly greater ethical sensitivity, supporting autonomy and intrinsic motivation as critical foundations for ethical development [31, 32]. Therefore, educators should: (1) Deepen contextual competency development through simulated prototypical scenarios (e.g., privacy conflict resolution) to enhance complex ethical decision-making [33, 34]. (2) Strengthen intrinsic professional motivation by implementing career scaffolding programs that foster internalized commitment [35, 36]. (3) Integrate structured ethics curricula synthesizing value clarification, professional identity reinforcement, and authentic clinical case reflection [37].

EI's Dual Effects: Ethical Sensitivity and Professional Identity

This study established a significant positive predictive relationship between EI and ethical sensitivity, confirming that EI is a direct antecedent. This finding aligns with research by Ibrahim in Iraq [25] and Ye in China [38], collectively suggesting that EI is a core individual factor influencing ethical perceptions and decision-making in nursing. Specifically, higher EI levels enable nursing students to more accurately detect subtle emotional cues (e.g., patient distress, family anxiety) in ethical situations. This heightened detection facilitates a deeper understanding of stakeholder needs, allowing students to anticipate potential conflicts and respond in accordance with ethical norms. Furthermore, a significant positive relationship was identified between EI and professional identity. Nursing students with higher EI typically exhibit stronger self-regulation and stress-coping capacities [39], which aid in establishing stable, supportive interpersonal networks and implicitly reinforce their emotional identification with, and belonging to, the nursing profession. Thus, EI functions as a critical internal psychological resource for the development and consolidation of professional identity [40].

Professional Identity as Driver of Ethical Sensitivity

The nursing interns in this study demonstrated moderately high overall professional identity. However, lower scores emerged in the professional self-image and retention benefits versus turnover risks dimensions. This pattern suggests persistent doubts among some interns regarding the profession's

social status, career prospects, and long-term rewards-potentially undermining professional commitment and belongingness. The contributing factors may include societal undervaluation of nursing, mismatches between high clinical workloads and inadequate compensation, and disillusionment from discrepancies between preinternship expectations and actual experiences [41]. Such dynamics can erode professional commitment and subsequently compromise ethical responsibility. The significant positive correlation between professional identity and ethical sensitivity suggests that an internalized sense of professional value drives ethical competence [42]. Students with strong professional self-concepts more readily integrate ethical principles into role identity, thereby enhancing clinical ethical awareness and accountability [43].

The Mediating Role of Professional Identity in the EI-Ethics Link

This study presents the first empirical evidence confirming the mediating role of professional identity among nursing interns in China, advancing the theoretical understanding of the emotion–ethics integration mechanism. Through the direct pathway, EI enhances ethical judgment by improving emotional recognition accuracy, empathy response efficiency, and self-regulation capacity. Through the indirect pathway, EI strengthens ethical sensitivity by fostering professional identity, which facilitates the internalization of core nursing values. This dual-pathway mechanism theoretically corroborates Yang et al.'s [44] finding regarding the “EI→professional identity→humanistic care competency” linkage. Crucially, by revealing the previously underexplored mediating process through which professional identity connects EI to ethical sensitivity in nursing internships, this study establishes a novel conceptual framework for nursing education.

Educational strategies: Leveraging the internship window

The undergraduate internship is a critical period for professional socialization in nursing students [45–47], during which professional identity and ethical sensitivity are highly formative. On the basis of our findings, we propose early implementation of integrated interventions targeting EI, professional identity, and ethical sensitivity: (1) Develop scenario-based ethical judgments through case simulations addressing Chinese healthcare-specific issues (e.g., resource allocation, confidentiality), enhancing recognition of dilemmas and decision-making in complex contexts. (2) Strengthen EI and empathic capacity by training in emotion recognition, regulation, and empathic communication to bolster ethical awareness [48]. (3) Cultivate professional identity and value integration through clinical mentorship, structured reflection (e.g., journals, guided discussions), and reinforcement of professional accomplishment [49, 50]. This approach equips students with psychological resources to navigate ethical challenges, solidifies professional values, and mitigates the risks of identity crises and ethical disengagement.

Limitations and Future Directions

This study has several limitations. First, the cross-sectional design precludes causal inferences regarding the mediating effects of EI and professional identity. Second, self-reported data may be

susceptible to social desirability and recall biases, potentially compromising the validity of the mediation estimates. Third, recruitment from only three southern Chinese institutions limits generalizability across regions, educational backgrounds, and nursing student populations.

To address these limitations, future research should consider employing longitudinal designs to track mediation dynamics. Additionally, multisource data should be integrated to reduce subjective measurement bias. Furthermore, the sampling diversity should be expanded to increase generalizability. These refinements systematically examine EI-professional identity mediation mechanisms and boundary conditions, strengthening evidence-based nursing frameworks.

Conclusion

This study confirms that EI not only directly enhances nursing interns' ethical sensitivity but also contributes indirectly by strengthening their professional identity, which functions as a significant partial mediator. These findings underscore the importance of cultivating both EI, particularly the capacity to recognize others' emotions and demonstrate empathy, and fostering a stable, positive professional identity during this critical formative period of professional socialization. This integrated EI-professional identity approach offers a roadmap for nursing curricula, directly improving ethical decision-making in clinical training.

Abbreviations

EI emotional intelligence

Declarations

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Conceptualization, Data curation, and Formal analysis: YWY, LQ, LB, OJX, ZQ. Investigation; YWY, LQ, LB, OJX, ZQ. Methodology: YWY, LQ, YXY. Supervision: MJ, YXY. Writing - original draft: YWY, LQ. Review & Editing: ZQ.

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Data availability

The data used to support the findings of this study are available from the corresponding author on reasonable request.

Ethical approval

The study was approved by the Ethics Committee of Dongguan Eighth People's Hospital and conducted in accordance with the ethical principles of the Declaration of Helsinki. Prior to data collection, institutional authorization was secured from the participating universities and hospitals. All participants received comprehensive written and verbal information regarding the study objectives and procedures. Electronic informed consent was obtained from each participant after confirming their understanding of the participation terms. All consent forms were approved by the institutional review board.

Consent for publication

Not applicable.

Competing interests

The authors declare that they have no competing interests.

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Figures

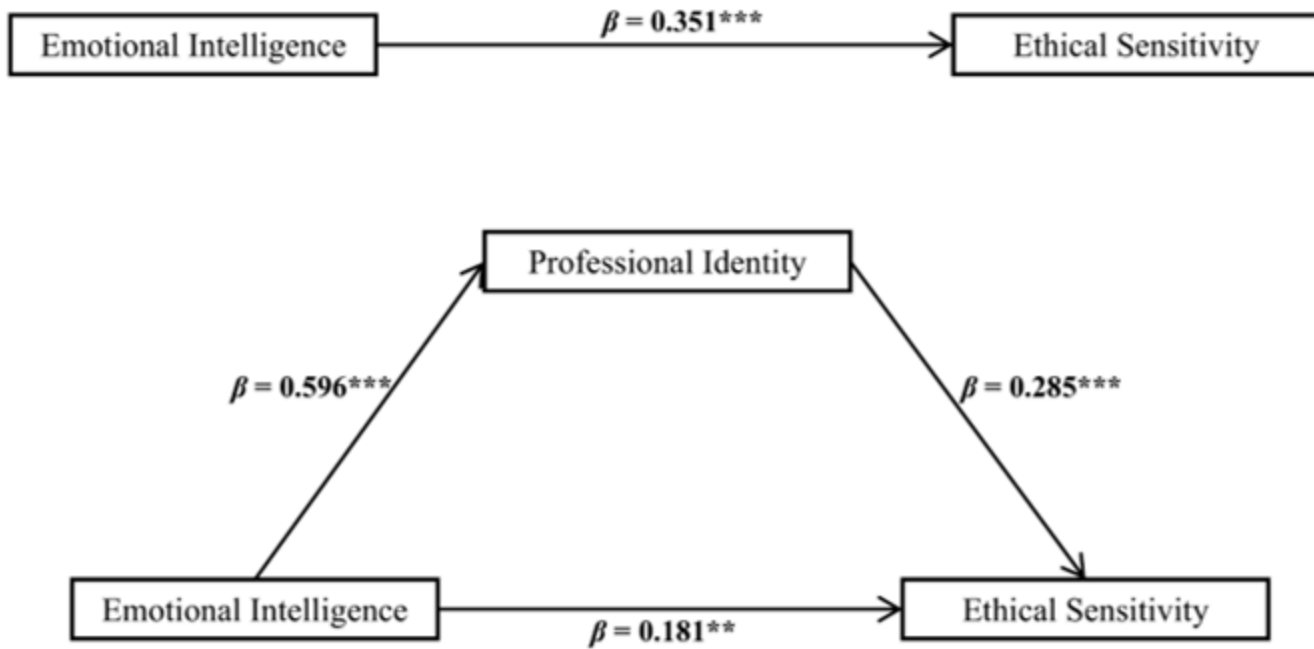


Figure 1

Model of the mediation effect of professional identity(N=308). All path coefficients are standardized. *** $p < 0.001$, ** $p < 0.01$.