

A Study on the Correlation between Peer Caring Behavior and Empathy among Undergraduate Nursing Students

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Abstract: *Objective:* To understand the current status of peer caring behavior and empathy among undergraduate nursing students and to explore the relationship between the two. *Method:* Using the convenience sampling method, a questionnaire survey was conducted among 292 nursing students from a medical college in Jiangxi Province, using the Peer Caring Behavior Scale and the Jefferson Scale of Empathy. *Results:* The score for peer caring behavior among undergraduate nursing students was 85.00 (78.00–92.00), and the score for empathy was 101.00 (92.00–110.00). A positive correlation was found between the two ($r = 0.362, p < 0.05$). *Conclusion:* The level of peer caring behavior among undergraduate nursing students is above average, while their empathy level is moderate, with a positive correlation between the two. This suggests that nursing educators should strengthen the development of peer caring behavior, which may help enhance the empathy of undergraduate nursing students.

Keywords: Undergraduate nursing students; Peer caring behavior; Empathy; Correlation

Online publication: Mar 10, 2026

1. Introduction

Empathy, also referred to as transference or compassion, is a multidimensional concept that integrates an individual's cognition, emotion, and behavior, and constitutes an essential component of humanistic care ^[1]. Studies have shown that individuals with high empathy are more capable of perspective-taking with patients, understanding their physical suffering and negative emotional states, and alleviating their psychological and physical distress through appropriate communication and nursing interventions ^[2]. As a fundamental quality and competency required of nurses, fostering empathy in nursing students contributes to improving clinical nursing practice and communication skills, establishing and maintaining positive nurse-patient relationships ^[3]. This is regarded as a key responsibility and mission of nursing educators.

Humanistic care represents a significant area of nursing research, and peer caring behavior serves as an

indicator of nursing students' development in terms of caring attitudes and abilities. Peer caring behavior has been found to be positively correlated with nursing students' humanistic care competence, suggesting a potential link between peer caring behavior and empathy^[4].

Therefore, this study aims to investigate the current status of peer caring behavior and empathy among undergraduate nursing students, explore the relationship between the two, and provide a basis for the cultivation of humanistic care education as well as a reference for enhancing empathy in this population.

2. Materials and methods

2.1. Participants

A convenience sampling method was employed in May 2025 to select undergraduate nursing students from a medical college in Jiangxi Province as the study participants. First-year students were excluded from the study as they were still in the stage of foundational medical coursework and had not yet gained a comprehensive understanding of the nursing profession.

2.1.1. Inclusion criteria

- (1) Enrollment as a second- to fourth-year undergraduate nursing student
- (2) Provision of informed consent and voluntary participation in the study

2.1.2. Exclusion criteria

- (1) Students who had withdrawn
- (2) Taken a leave of absence
- (3) Not on campus

2.2. Sample size

The sample size was estimated based on the principle of 5–10 participants per variable^[5]. Using the 20 items of the Jefferson Scale of Empathy as the calculation criterion and accounting for an estimated attrition rate of 20%, the calculated sample size ranged from 125 to 250 cases. Ultimately, a final sample size of 292 participants was determined.

2.3. Research instruments

2.3.1. General information questionnaire

The questionnaire used in this study was developed by the research team based on a review of relevant literature. It collected the following information: gender, age, academic year, place of origin, single-child status, monthly per capita family income, holding a student leadership position, participation in clubs/student unions, involvement in volunteer activities, and completion of clinical practicum.

2.3.2. Jefferson scale of empathy

The Jefferson Scale of Empathy was originally developed in 2001 by Dr. Hojat's research team at Jefferson University in the United States^[6]. Chinese versions of the scale have been linguistically and culturally adapted by scholars including Qiu Zhijun^[7]. The scale comprises 20 items, 10 of which are reverse-scored. Responses are recorded on a 7-point Likert scale (ranging from 1 = "strongly disagree" to 7 = "strongly agree"), resulting in a

total possible score between 20 and 140. Higher total scores indicate higher levels of empathic ability. The scale is structured into the following three dimensions: Perspective Taking (10 items), Compassionate Care (8 items), and Standing in the Patient’s Shoes (2 items). The JSE has demonstrated good reliability and validity. Its Cronbach’s alpha coefficient was 0.750, and its split-half reliability coefficient was 0.771.

2.3.3. Peer caring behavior

The Peer Caring Behavior was originally developed by Kuo, Turton, and colleagues in 2007, and later revised by Chinese scholars such as Chen Shuangqin et al. [8,9]. This scale consists of 17 items, organized into three distinct dimensions: Helping Care (9 items), Academic Care (4 items), and Emotional Care (4 items). Responses are rated on a 6-point Likert scale (1 = strongly disagree, 6 = strongly agree). The total score ranges from 17 to 102, with higher scores indicating more positive peer caring behaviors. The Cronbach’s alpha coefficient for this scale is 0.948.

2.4. Data collection

Electronic questionnaires, generated using the online survey platform Wenjuanxing, were distributed via a QR code shared within the respective class groups of the targeted students. Detailed instructions regarding the purpose, completion methods, and important notes for the questionnaire were provided. Participants completed and submitted the questionnaires online. Following the data collection period, two researchers independently reviewed all submitted responses. A total of 299 questionnaires were initially collected. After excluding 7 questionnaires that showed identical responses across all items (indicating potential response bias), 292 valid questionnaires were retained for analysis, resulting in a valid response rate of 97.7%.

2.5. Statistical methods

The data were analyzed using SPSS 27.0 software. Behavior data were expressed as “mean ± standard deviation”, count data were expressed as “number of cases (percentage)”. Group comparisons were conducted using non-parametric rank-sum tests (Mann-Whitney U or Kruskal-Wallis H tests as appropriate). The relationship between variables was assessed using Spearman’s rank correlation analysis. The significance level was set at $\alpha = 0.05$.

3. Results

3.1. Peer caring behavior and empathy scores correlation analysis between peer caring behavior and empathy among nursing students

This study showed that the total peer caring behavior score among undergraduate nursing students was 85.00 (78.00–92.00), with a per-item mean score of 5.00 (4.58–5.41). The total empathy score was 101.00 (92.00–110.00). The mean scores for the individual dimensions of empathy are presented in **Table 1**.

Table 1. Empathy scores among 292 undergraduate nursing students

Dimension	Items	Dimension score	Mean item score
Perspective taking	10	52.00 (48.00, 57.00)	5.20 (4.80, 5.70)
Compassionate care	8	41.00 (36.00, 46.00)	5.12 (4.50, 5.75)
Standing in the patient’s shoes	2	10.00 (8.00, 11.00)	5.00 (4.00, 5.50)
Total empathy score	20	101.00 (92.00, 110.00)	5.07 (4.60, 5.55)

Comparisons of scores based on different student characteristics are detailed in **Table 2**. Students in higher academic years had significantly higher scores in both peer caring behavior and empathy compared to those in lower academic years ($p < 0.05$). Additionally, older students had significantly higher empathy scores than younger students ($p < 0.05$).

Table 2. Comparison of peer caring behavior and empathy scores among nursing students with different characteristics

Variable	Category	<i>n</i>	Empathy score	U/H	<i>p</i>
Gender	Male	73	99.00 (86.00, 112.00)	-1.495	0.135
	Female	219	102.00 (95.00, 111.00)		
Age (years)	18–20	74	107.00 (97.00, 117.00)	15.231	0.001
	21–22	181	101.00 (91.00, 110.00)		
	> 22	37	96.00 (83.00, 104.00)		
Academic year	Sophomore	71	108.00 (99.00, 119.00)	15.721	0.001
	Junior	126	99.00 (91.00, 109.00)		
	Senior	95	99.00 (88.50, 109.50)		
Only child	Yes	22	110.00 (98.00, 117.00)	-1.669	0.950
	No	270	101.00 (92.00, 111.00)		
Place of origin	Urban	80	100.50 (91.50, 112.00)	-0.277	0.782
	Rural	212	102.00 (92.50, 111.00)		
Monthly per capita income (CNY)	< 1000	31	96.00 (81.00, 107.00)	6.084	0.298
	1000–1999	35	104.00 (94.50, 111.00)		
	2000–2999	52	102.00 (95.00, 115.00)		
	3000–3999	50	99.50 (93.00, 109.00)		
	4000–4999	45	100.00 (95.00, 110.00)		
	≥ 5000	79	102.00 (93.00, 111.500)		
Held student leadership position	Yes	66	101.50 (90.00, 110.00)	-0.555	0.579
	No	226	101.50 (92.00, 112.00)		
Participated in clubs/student union	Yes	100	104.00 (95.00, 112.50)	-1.615	0.106
	No	192	100.00 (91.00, 110.50)		
Participated in volunteer activities	Yes	247	102.00 (94.50, 112.00)	-1.714	0.087
	No	45	98.00 (86.00, 109.00)		
Clinical practicum	Yes	249	101.00 (92.00, 112.00)	-0.073	0.942
	No	43	103.00 (90.50, 110.00)		

3.2. Correlation analysis between peer caring behavior and empathy among nursing students

This study revealed that the total peer caring behavior score was positively correlated with both the total empathy score and its subscale scores among undergraduate nursing students, as detailed in **Table 3**.

Table 3. Correlation analysis between peer caring behavior and among undergraduate nursing students

Variable	Perspective taking	Compassionate care	Standing in the patient's shoes	Total empathy score
Peer caring behavior	0.475	0.232	0.113	0.362

4. Discussion

4.1. The peer caring behavior of undergraduate nursing students was at an above-average level

This study revealed that among the 292 undergraduate nursing students, the total peer caring behavior score was 85.00 (78.00–92.00), indicating an above-average level, which is slightly higher than the findings of other relevant domestic studies^[4]. The reasons for this may be attributed to differences in the institutional environment and educational approaches. The participants in this study were all from public undergraduate institutions. Nursing educators not only focus on imparting professional skills but also emphasize and cultivate students' caring competencies. The university environment and education serve as crucial settings for developing nursing students' peer caring abilities. Research has shown that institutional caring behaviors are positively correlated with students' peer caring competencies^[10]. Therefore, fostering peer caring behavior during their academic training is not only necessary but also represents an urgent requirement in contemporary nursing education. However, the current regional variation in the curriculum design, including the number and duration of related courses across domestic institutions, may also contribute to the uneven development of peer caring competencies among nursing students^[11].

4.2. The empathy level of undergraduate nursing students needs improvement

This study revealed that among the 292 undergraduate nursing students, the total empathy score was 101.00 (92.00, 110.00), with a mean item score of 5.07 (4.60, 5.55), which is higher than the results reported in some related studies, but lower than clinical nurses^[12,13]. The reasons for this may include that most participants in this study were second- and third-year nursing students. Their education primarily focuses on theoretical nursing courses with limited opportunities for clinical practice, which restricts their ability to engage in genuine communication with patients and fully understand their emotional expressions.

Moreover, as previously mentioned, most domestic universities have not yet placed sufficient emphasis on cultivating nursing students' humanistic qualities. The relevant theoretical courses and training methods remain varied and inconsistent, lacking uniformity and standardization^[14].

Furthermore, the participants in this study belong to the post-2010s generation, who have grown up in the era of social media. The online interactions often replace face-to-face communication and short-form videos contribute to shortened attention spans, may hinder the development of empathy. Furthermore, this generation tends to be more self-focused and lacks habitual perspective-taking, making it difficult to establish deep emotional resonance with patients^[15]. This may explain why the Standing in the Patient's Shoes dimension received the lowest score.

In terms of empathy scores, senior nursing students scored higher than their junior counterparts. Junior students primarily focus on theoretical instruction and have later exposure to real patients, leading to a lack of practical triggers for empathy development. It is recommended that nursing educators diversify and broaden clinical practice activities in the future, for instance, by utilizing real clinical cases to foster empathy awareness and establishing "empathy training laboratories", thereby enhancing nursing students' empathy competencies and skill levels.

4.3. Peer caring behavior is positively correlated with empathy among undergraduate nursing students

This study revealed a positive correlation between peer caring behavior and empathy, including all its sub-dimensions, indicating that nursing students with stronger intentions for peer caring tend to exhibit higher levels of empathy. The possible reasons are as follows: On one hand, nursing students operate within a collective campus environment where daily interactions with peers constitute crucial learning scenarios. During classroom discussions of patient cases, peers with higher empathy proactively pay attention to patients' underlying psychological needs. Such expressions guide other students to shift their perspectives, gradually fostering a "patient-centered" empathetic mindset^[5].

On the other hand, the caring behaviors demonstrated by teachers in teaching inspire students to create an atmosphere filled with care, which helps cultivate empathy and lays a solid foundation for effective patient-centered communication in the future.

5. Conclusion

In summary, undergraduate nursing students demonstrated an above-average level of peer caring behavior and a moderate level of empathy, with a positive correlation observed between the two. This study suggests that nursing educators should emphasize the cultivation of peer caring behavior to promote the overall enhancement of students' empathy. The findings are subject to certain limitations, including the use of a convenience sampling method and recruitment from only one undergraduate institution in Jiangxi, which may limit the generalizability of the results. Future research should employ larger, multi-center samples for further in-depth investigation.

Funding

2024 University-level Research Project of Fuzhou Medical College, Fuzhou Medical College of Nanchang University (Project No.: fykj202406)

Disclosure statement

The authors declare no conflict of interest.

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