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## Original Article

## Are parental rearing patterns and learning burnout correlated with empathy amongst undergraduate nursing students?

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## ABSTRACT

**Objective:** Empathy can help establish harmonious nurse–patient relationships. We aimed to assess the status of empathy, and explore the relationship between learning burnout, parental rearing patterns and empathy amongst nursing students.

**Method:** A questionnaire survey that employed the Learning Burnout Scale, the Short-Form Egna Minnenav Barndoms Uppfostran (s-EMBU) and the Jefferson Scale of Empathy was conducted amongst 562 nursing students. The data were analysed on the basis of descriptive statistic and correlation analysis was used.

**Results:** Empathy is negatively correlated with learning burnout, parental rejection and overprotection and showed no positive correlation with parental emotional warmth.

**Conclusions:** Educators should pay attention to nursing students' feelings and learning burnout status and take positive measures to improve the empathy level of the students. Positive parental rearing patterns also help cultivate empathy.

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## 1. Introduction

In the 1980s, the concept of empathy was introduced into the medical field and is regarded as a highly necessary quality of medical staff [1]. Empathy means that medical staff need to focus on the patient's world and understand the patient's feelings and thoughts [2]. Empathy is an important part of humanity and the professional spirit.

Existing research shows that empathy helps promote the nurse–patient relationship and improving patient satisfaction, treatment compliance and clinical outcomes [3–8]. In the clinical context, new educational concept has emerged and requires nurse empathy as the first lesson imbibed by nursing students [9,10]. However, studies undertaken early in this century suggested the empathy decline during undergraduate medical education [11–13], whereas other studies reported either no change or an increase in empathy [14–16]. A systematic review by Quince et al., in 2016 [17] concluded that although the trajectory of empathy in undergraduate medical education continues to be debated, the factors that

may influence the development of empathy should be realised.

Empathy is a kind of social emotion that tends to be affected by the surrounding environment. The family is the first place for children's socialisation; thus, the influence of parental rearing in the formation of a child's personality and cognition is undoubtedly profound and long term [18]. Parental rearing patterns include parents' attitudes, behaviour and emotional performance toward children [19]. Previous work confirmed a strong association between parental rearing behaviours and their children's developing empathy [20,21]. In a study conducted amongst 351 college students, Hu [22] found positive parenting patterns to be significantly positively correlated, whereas negative parenting patterns were negatively related, to college students' empathetic ability. This observation suggests that different parenting styles exert different arousal effects on empathy. Given the lack of a longitudinal study on the influence of early parenting patterns, evidence is insufficient to prove the long-lasting effect of individual early parenting patterns on the later empathy. Therefore, the factors from early parental rearing patterns that influence the development of empathy in adulthood should be considered.

College students gradually separate themselves from their parents' care and enter a new environment where they are influenced by the academic situation. Medical students are a special group whose learning time is long and task is heavy and are more prone to

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learning burnout than other college students [23,24]. Learning burnout refers to the negative attitudes and behaviours involving tiredness from learning because of the pressure of or lack of interest in learning [25]. About 40% medical students experience learning burnout [26]. Learning burnout severely influences the physical and mental well-being, as well as the empathetic ability, of medical students [27,28]. Previous studies have demonstrated that the job burnout of nurses is closely related to the level of empathy. The empathy ability of nurses was negatively related to emotional exhaustion and depersonalisation but positively related to personal accomplishment [29–34]. Conversely, improving nurse empathy can reduce burnout. However, research is scarce on the influence of nursing students' learning burnout on empathy in China.

With the extension and expansion of social intelligence, the study of empathy cannot be separated from the specific social and cultural background. Few studies delve on the influence of parental rearing patterns and learning burnout on empathy amongst nursing students in China. Therefore, this study investigated the empathy of undergraduate nursing students and analysed the relationship of empathy with parental rearing patterns and learning burnout. We aimed to provide a theoretical basis for cultivating empathy amongst undergraduate nursing students in China.

## 2. Methods

### 2.1. Study design and participants

In China, undergraduate nursing students need to complete 4-year bachelor programs, including 1 year of basic sciences, 2 years of professional course and 1 year of internship. Fourth-year students are difficult to engage because of their practice in different places. Thus, the participants included the students from years 1–3 of medical school in this cross-sectional study and excluded fourth-year students. A total of 630 questionnaires were distributed to nursing students in April 2017, and 562 valid questionnaires were recovered, with an effective rate of 89.2%. Before the test, all participants agreed to participate in this study and signed an informed consent. Permission was obtained to use the measurement tools.

### 2.2. Measures

#### 2.2.1. Demographic characteristics

Demographic information, including age, gender, academic year and presence or absence of siblings, was obtained in this study.

#### 2.2.2. Jefferson Scale of Empathy (Chinese-Version)

The Jefferson Scale of Empathy [35] includes 20 items and 3 subscales, namely, perspective taking (10 items), compassionate care (8 items) and standing in the patient's shoes (2 items). Each item was answered by a seven-point Likert-type scale (1 = strongly disagree, 7 = strongly agree), with a total score between 20 and 140 points. A higher total score indicates a higher empathy level. The scale was translated into Chinese by Ma L, et al. [36] in 2009, and scoring algorithms are same. The Cronbach's  $\alpha$  coefficients of the Chinese version scale was 0.77, and the split half reliability was 0.70, which indicate good reliability [36].

#### 2.2.3. Chinese version of the short-form Egna Minnenav Barndoms Uppfostran (s-EMBU)

The s-EMBU was developed by Perris [37] and translated into Chinese by Jiang J, et al. [38]. To evaluate the parenting styles and behaviours, we used the Chinese version of s-EMBU [38]. This scale consists of 42 items, divided into the paternal and maternal

versions, and each version contained three subscales, including emotional warmth, rejection and overprotection. Answers are provided on the basis of a four-point Likert scale, with each subscale's average score ranging from 0 to 4. We then compared the average scores of each subscale to determine which parenting style tends to be used. In this study, the Cronbach's  $\alpha$  coefficient of the scale was 0.77, which reflects a good reliability.

### 2.2.4. Learning Burnout Scale

Lian et al. [25] developed a Learning Burnout Scale for Chinese college students in 2005. The Learning Burnout Scale is the most commonly used scale for measuring college students' learning burnout. The scale consists of 20 items and three subscales, including depression, improper behaviour and low personal accomplishment. Each item was answered by a five-point Likert-type scale from 'does not describe me well' (1) to 'describes me very well' (5), with scores ranging from 20 to 100. A total average score greater than 60 indicates learning burnout. In this study, the Cronbach's  $\alpha$  coefficient of the scale was 0.81.

### 2.3. Statistical analysis

SPSS version 19.0 was used to analyse the data and a  $P$  value of  $<0.05$  was considered statistically significant. Descriptive statistics was applied to analyse the demographic characteristics, parental rearing patterns, learning burnout and empathy variables with Mean, standard deviation (SD) and percentage (%). The outcome variables amongst different genders and grades were compared using  $t$ -test or one-way ANOVA. Pearson's correlation analysis and Spearman's correlation analysis were performed to analyse the correlation between continuous variables and categorical variables, respectively.

## 3. Results

### 3.1. Description of the participants

A total of 86 males (15.3%) and 476 females (84.7%) were amongst the 562 nursing undergraduates and reflected the greater number of female nursing students than that of male nursing students. This demographic characteristic of the nursing students is consistent with most medical institutions in China. Their ages ranged from 17 years to 23 years. A total of 213 (37.9%) were first-year nursing students, 163 (29.0%) second-year nursing students and 186 (33.1%) third-year nursing students. The percentage of students without siblings was 24.7% (139/562).

### 3.2. Descriptive statistical analysis

The score of empathy for the nursing students was 66–138 ( $106.87 \pm 12.29$ ), which corresponds to a high empathy level (Table 1). The three dimensions with high to low scores were as follows: perspective taking, compassionate care and standing in the patient's shoes. Although a score of no more than 60 was obtained, the learning burnout situation was not optimistic. The standardised scores of the parental rearing patterns in descending order were parental emotional warmth, parental overprotection and parental rejection, which indicated that the majority of nursing students can feel the warmth from their parents.

### 3.3. Empathy according to socio-demographic variables

No significant difference in empathy was observed between genders or between the students with and without siblings ( $P > 0.05$ ) (Table 2). However, nursing students during different

**Table 1**Scores of empathy, parental rearing patterns and learning burnout amongst nursing students ( $n = 562$ ).

Domains	Score (Mean $\pm$ SD)	Standard score (%)
<b>Empathy</b>	106.87 $\pm$ 12.29	76.34
Perspective taking	56.10 $\pm$ 8.28	80.14
Compassionate care	40.63 $\pm$ 5.45	72.55
Standing in patient's shoes	10.14 $\pm$ 2.47	72.45
<b>Learning burnout</b>	55.50 $\pm$ 9.63	55.50
Depression	20.88 $\pm$ 5.15	52.19
Improper behaviour	17.51 $\pm$ 3.65	58.38
Low personal accomplishment	17.11 $\pm$ 3.56	57.04
<b>Parental rearing patterns</b>	88.22 $\pm$ 11.09	52.51
Father	Emotional warmth	19.64 $\pm$ 4.29
	Rejection	8.31 $\pm$ 2.77
	Overprotection	15.70 $\pm$ 3.16
Mother	Emotional warmth	20.14 $\pm$ 4.16
	Rejection	8.32 $\pm$ 2.73
	Overprotection	16.18 $\pm$ 3.32

**Table 2**Empathy scores of nursing students with different socio-demographic characteristics ( $n = 562$ ).

Variables	Number	Perspective taking	Compassionate care	Standing in patient' shoes			
Gender	Male	86	54.48 $\pm$ 10.64	40.42 $\pm$ 6.48	9.85 $\pm$ 2.70		
	Female	476	56.39 $\pm$ 7.76	40.67 $\pm$ 5.25	10.20 $\pm$ 2.42		
	<i>t</i>		-1.59	-0.34	-1.20		
	<i>P</i>		>0.05	>0.05	>0.05		
Stage	1 <sup>st</sup> year	213	57.42 $\pm$ 7.99	41.04 $\pm$ 5.16	10.62 $\pm$ 2.38		
	2 <sup>nd</sup> year	163	53.26 $\pm$ 8.60	39.42 $\pm$ 5.36	9.78 $\pm$ 2.25		
	3 <sup>rd</sup> year	186	57.07 $\pm$ 7.75	41.23 $\pm$ 5.71	9.92 $\pm$ 2.68		
	<i>F</i>		14.20	5.83	6.51		
			<i>P</i>		<0.001	<0.01	>0.01
With Siblings	Yes	423	56.20 $\pm$ 7.96	40.84 $\pm$ 5.36	10.21 $\pm$ 2.43		
	No	139	55.79 $\pm$ 9.23	39.99 $\pm$ 5.71	9.95 $\pm$ 2.58		
	<i>t</i>		-0.50	-1.59	-1.08		
	<i>P</i>		>0.05	>0.05	>0.05		

academic years were noted with significant differences in empathy. The scores for perspective taking ( $P < 0.001$ ), compassionate care ( $P < 0.01$ ) and standing in the patient's shoes ( $P < 0.01$ ) of the second-year nursing students were higher than those of others.

#### 3.4. Correlation between empathy and parental rearing patterns and burnout domains

Perspective taking was inversely correlated with depression, low personal accomplishment ( $r = -0.2$ ;  $P < 0.001$ ), parental rejection ( $r \geq -0.3$ ;  $P < 0.001$ ) and overprotection ( $r = -0.1$ ;  $P < 0.001$ ) but positively correlated with parental emotional warmth ( $r = 0.3$ ;  $P < 0.001$ ) (Table 3). Compassionate care was inversely correlated with depression ( $r = -0.2$ ;  $P < 0.001$ ), parental

rejection ( $r = -0.2$ ;  $P < 0.001$ ) and father's overprotection ( $r = -0.1$ ;  $P < 0.05$ ) but positively correlated with parental emotional warmth ( $r = 0.2$ ;  $P < 0.001$ ). Standing in patient's shoes was inversely correlated with depression ( $r = -0.3$ ;  $P < 0.001$ ) and weakly correlated with stage of medical education, age, improper behaviour and most domains of parental rearing patterns.

## 4. Discussion

### 4.1. Empathy status of undergraduate nursing students

Because the norm of nursing students' empathy has not been established in China, the empathy level of nursing students was evaluated by comparing with other studies. The mean total score of

**Table 3**Correlation coefficients amongst empathy, parental rearing patterns and burnout domains ( $r$ ,  $n = 562$ ).

	1	2	3	4	5	6	7	8	9	10	11	12
1.Perspective taking	1											
2.Compassionate care	0.3**	1										
3.Standing in patient's shoes	0.3**	0.3**	1									
4.Depression	-0.2**	-0.2**	-0.3**	1								
5.Improper behaviour	0.0	-0.1	-0.1*	0.5**	1							
6.Low personal accomplishment	-0.2**	0.0	-0.1	0.3**	0.3**	1						
7.Emotional warmth(father)	0.3**	0.2**	0.1**	-0.2**	-0.1**	-0.2**	1					
8.Rejection(father)	-0.3**	-0.2**	-0.1**	0.2**	0.1*	0.0	-0.4**	1				
9.Overprotection(father)	-0.1**	-0.1*	-0.1	0.1**	0.1	0.0	0.0	0.4**	1			
10.Emotional warmth(mother)	0.3**	0.2**	0.1**	-0.2**	-0.1**	-0.2**	-0.8**	0.3**	0.0	1		
11.Rejection(mother)	-0.4**	-0.2**	-0.1**	0.2**	0.1	0.1	-0.3**	0.7**	0.4**	-0.4**	1	
12.Overprotection(mother)	-0.1**	-0.1	-0.1*	0.2**	0.1	0.0	0.0	0.3**	0.8**	-0.1	0.5**	1

Note: \*\* $P < 0.01$ ; \* $P < 0.05$ .

empathy was ( $106.87 \pm 12.29$ ), which was superiorly moderate. This study and other research in China suggest that the empathy level of Chinese nursing students is high but not sufficiently optimistic relative to those of other countries [36]. The result revealed that most nursing students can realise the importance of empathy with room for improvement.

#### 4.2. Empathy difference based on demographics

Previous research found that empathy and the related reaction of individual differences can be attributed to factors such as gender, age and stage of education [39,40]. Xiang et al. found no difference in empathy between male and female [41]. In this study, the empathy scores of the female and male students did not differ, which is consistent with previous findings. Studies in recent years also support this view [42–44]. Williams applied the Jefferson Scale of Empathy to investigate nursing and midwifery students at an Australian University and found that female students were more empathetic than males [45]. However, the reasons for this difference were unclear and potentially due to the differences in interpersonal patterns or gender role expectations [46]. In this study, second-year nursing students showed the lowest empathy level. Second-year nursing students begin to study nursing professional knowledge, and the pressure from professional courses leads to anxiety. The trimming of the humanities curriculum can affect the empathy level of nursing students. Other studies have shown that the empathy levels of nursing students gradually decline with the progress of education [47] or the levels of empathy has not changed with the rising of grades [48]. The conclusion inconsistencies may be related to the size and location of the research samples and the inconsistency of empathy and must be investigated. The presence or absence of siblings did not obviously influence the empathy level of the nursing students. Researchers believe that contemporary college students develop in a more satisfying environment than did previous college students; the former receive quality education from their family, school and society and thus show the same empathy regardless of having or not having siblings [49,50].

#### 4.3. Empathy and learning burnout

Although the overall score of learning burnout was no more than 60, the status of learning burnout was not optimistic. Undergraduate nursing students hold a certain degree of learning burnout, especially prominent depression. The difficulty of the course, the heavy tasks and the frequent exposure to trauma, death and other sad and overwhelming situations may lead to the students' depressed mood. Depression was negatively correlated with each factor of empathy (Table 3). Inappropriate behaviour was negatively correlated with standing in patient's shoes, and low personal accomplishment was negatively correlated with perspective taking. In previous studies, the correlation between learning burnout and empathy was also demonstrated [51,52]. These results prove that cultivating empathy is affected by positive or negative factors, such as emotions or personal achievement. Empathy begins by listening and adjusting your emotions before feeling the emotions of others without interruption. People under low spirits entail attention and support from others. They usually ignore the use of empathy and thereby hinder the development of this ability. Therefore, educators need experience and coping mechanisms to recognise and address students' negative emotions.

#### 4.4. Empathy and parental rearing patterns

Parental emotional warmth is a positive parenting style, whereas parental rejection and overprotection are negative

parenting styles. We found positive parenting patterns to be positively correlated, whereas negative parenting patterns negatively, with nursing students' empathy ability. This result is consistent with previous findings [22]. Previous studies have shown that parental rearing patterns affect children's empathy development [53]. Although college students gradually separate from their parents' care, parental influence on empathy continues because parents are children's first teachers. The emotional warmth of parents plays a significant role in the development of empathy, but the negative influence of negative parenting patterns on students' empathy development is greater than the positive effect of positive rearing patterns [54]. In our study, most nursing students can feel the warmth from their parents and may be related to the optimistic empathy level of nursing students. Therefore, the cultivation of individual empathy can begin with parental rearing patterns. Parents should understand and care for their children to feel warmth and understand and subtly promote the development of empathy.

### 5. Limitations

This study holds few limitations. Firstly, the research methods used in this study was based on a cross-sectional design. The complete development process of nursing students' empathy cannot be obtained feasibly in this study. A follow-up study can be carried out for nursing freshmen, and the changes in empathy level through their whole career can be observed. Secondly, empathy is divided into cognitive empathy and emotional empathy. The Jefferson Scale of Empathy used in this study focuses on measuring cognitive empathy amongst nursing students, whereas emotional empathy was not considered. Finally, the environment presently experienced by college students was mainly family environment and school environment; thus, this study only explored the relationship with empathy from two aspects: family and school environment. The relationship between empathy and other empathy factors, such as personality factors and social support, should be explored in further studies.

### 6. Conclusions

In summary, nursing students' empathy still holds space for development. Empathy is related to learning burnout and parental rearing patterns. Mother's rejection, father's emotional warmth and depression are significant predictors of empathy amongst nursing students. Nursing educators can refer to the results of this study whilst applying a combination of theoretical courses and practical courses based on the actual situation of nursing students to allow their students to experience real cases that can improve the latter's empathy level. At the same time, humanities courses and professional courses should be equally emphasised.

### Appendix A. Supplementary data

Supplementary data related to this article can be found at <https://doi.org/10.1016/j.ijnss.2018.07.005>.

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