

# ปัจจัยที่มีความสัมพันธ์กับการเข้าใจความรู้สึกผู้อื่นของนักศึกษาพยาบาล ในเขตภาคตะวันออก ประเทศไทย

## Factors Related to Empathy of Nursing Students in Eastern Region, Thailand

นิพนธ์ต้นฉบับ

Original Article

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### บทคัดย่อ

**วัตถุประสงค์:** เพื่อ 1) บรรยายความสัมพันธ์ระหว่างการเข้าใจความรู้สึกผู้อื่น การมองโลกทางบวก และความสามารถในการเผชิญปัญหาและอุปสรรค และ 2) เปรียบเทียบการเข้าใจความรู้สึกผู้อื่นในรูปแบบการเรียนรู้และรูปแบบการเลี้ยงดูที่ต่างกันของนักศึกษาพยาบาลในเขตภาคตะวันออก ประเทศไทย **วิธีการ:** การวิจัยเชิงบรรยายหาความสัมพันธ์ (descriptive correlational design) ในนักศึกษาพยาบาลชั้นปีที่ 1 - 4 จำนวน 130 คน จากสถาบันการศึกษา 3 แห่งในเขตภาคตะวันออกของประเทศไทย ช่วงปี 2561 - 2562 เครื่องมือประกอบด้วย 1) แบบสอบถามความสามารถในการเข้าใจความรู้สึกผู้อื่น 2) การมองโลกในทางบวก 3) ความสามารถในการเผชิญปัญหาและฟันฝ่าอุปสรรค 4) รูปแบบการเรียนรู้ และ 5) รูปแบบการเลี้ยงดู ซึ่งมีค่าความเชื่อมั่นสัมประสิทธิ์อัลฟาครอนบาคเท่ากับ 0.75 0.86 0.95 0.81 และ 0.82 ตามลำดับ วิเคราะห์ข้อมูลด้วยสถิติพรรณนา สหสัมพันธ์ของเพียร์สัน และวิเคราะห์ความแตกต่างด้วยสถิติ ANOVA ผลการวิจัย: กลุ่มตัวอย่างมีค่าเฉลี่ยคะแนนรวมการเข้าใจความรู้สึกผู้อื่นเท่ากับ 111.50 คะแนน ( $SD = 10.00$ ) นักศึกษาล้วนส่วนใหญ่มีการเข้าใจความรู้สึกผู้อื่นอยู่ในระดับสูงที่ค่าเฉลี่ย 5.58 คะแนน ( $SD = 0.50$ ) (จำนวน 114 คน คิดเป็น 87.7%) การมองโลกทางบวกสัมพันธ์ทางบวกในระดับต่ำกับการเข้าใจความรู้สึกของผู้อื่นอย่างมีนัยสำคัญทางสถิติ ( $r = 0.318, P\text{-value} < 0.01$ ) ความสามารถในการเผชิญปัญหาและอุปสรรคสัมพันธ์ทางบวกในระดับปานกลางกับการเข้าใจความรู้สึกของผู้อื่นอย่างมีนัยสำคัญทางสถิติ ( $r = 0.490, P\text{-value} < 0.01$ ) นักศึกษามีคะแนนการเข้าใจความรู้สึกของผู้อื่นที่แตกต่างกันอย่างมีนัยสำคัญทางสถิติ ตามรูปแบบการเรียนรู้ ( $F_{4,125} = 3.352, P\text{-value} = 0.012$ ) และรูปแบบการเลี้ยงดู ( $F_{3,126} = 2.887, P\text{-value} = 0.038$ ) สรุป: ผลการวิจัยบ่งชี้ว่าผู้บริหารและบุคลากรทางการศึกษาทางการพยาบาล ควรให้ความสำคัญกับการมองโลกทางบวก ความสามารถในการเผชิญปัญหาและอุปสรรค รูปแบบการเรียนรู้ และรูปแบบการเลี้ยงดูเพื่อส่งเสริมการเข้าใจความรู้สึกของผู้อื่นของนักเรียนพยาบาลต่อไป

**คำสำคัญ:** การเข้าใจความรู้สึกผู้อื่น, การมองโลกทางบวก, การเผชิญปัญหาและอุปสรรค, นักศึกษาพยาบาล

#### Editorial note

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### Abstract

**Objective:** To 1) describe the relationship between empathy, optimism, and adversity quotient, and 2) compare empathy among learning styles and parenting styles among nursing students in the eastern region of Thailand. **Method:** In this descriptive correlational study, 130 nursing students in the first to the fourth year from three educational institutions in the eastern region of Thailand during 2018 – 2019 were recruited. Research instruments included 1) personal information form, 2) empathy scale, 3) life orientation scale, 4) adversity quotient questionnaire, 5) learning style questionnaire, and 6) parenting style questionnaire, with Cronbach's alpha coefficient reliabilities were 0.75, 0.86, .95, 0.81, and 0.82, respectively. Descriptive statistics, Pearson's correlation coefficient, and a one-way ANOVA test were used to analyze the data. **Results:** The mean total score of empathy was 111.50 points ( $SD = 10.00$ ). Most of nursing students informed a high empathy level at a mean score of 5.58 points ( $SD = 0.50$ ) ( $n = 114$  or 87.7%). Optimism was positively and significantly related to empathy at a low level ( $r = 0.318, P\text{-value} < 0.01$ ). The adversity quotient was positively and significantly related to empathy at a moderate level ( $r = 0.490, P\text{-value} < 0.01$ ). There were a significant difference empathy scores between groups of learning styles ( $F_{4,125} = 3.352, P\text{-value} = 0.012$ ) and parenting styles ( $F_{3,126} = 2.887, P\text{-value} = 0.038$ ). **Conclusion:** These findings suggested that administrators and instructors who work with the nursing educational system should be concerned about optimism, adversity quotient, learning styles, and parenting styles to promote empathy in nursing students.

**Keywords:** empathy, optimism, adversity quotient, nursing students

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## Introduction

Empathy among health professions is of great concern since it can be used to understanding health service to improve the service quality. Studies on empathy have been conducted in nursing<sup>1</sup>, medicine<sup>2</sup>, pharmacy<sup>3</sup>, and dentistry.<sup>4</sup> These studies were based on highlighting and raising

awareness of the importance of empathy as a key to approaching human service receivers. Nursing provides health care service for the clients and their families. Nursing also protects the clients' rights and benefits. The literature review about empathy and health service provision showed that

empathy uplifts the service quality and effectiveness. For example, it is positively related to pain relief, heart rate, and respiratory rate. Moreover, it decreases anxiety and impotunity. People with empathy can understand themselves better, feel at ease to socialize with others, have less worry, and have less opportunity of depression. With empathy of nurses, the client's mind could be broadened which could be useful for treatment procedures.<sup>1</sup>

Thai nursing students attending an undergraduate program are in their 18 - 22 years old. This age range is considered late teenagers to young adults. In this transitional period, several changes happen with their physical and psychological health, societal growth, and thinking process.<sup>5</sup> These nursing students have to take intensive didactic and practical classes and actual trainings. Hence, professional development is a new duty with the format, regulation, and knowledge structure different from other daily lives. Nursing students' performance and effective communication are derived from a cognitive skill called social knowledge where empathy is one of the attributes of social knowledge.<sup>6</sup> Empathy is an attribute required not only for nurses, but also other healthcare providers and family members of the patients. People with empathy put themselves in others' places, learn the circumstance, and understand others' true feelings. This understanding establishes a nurse-patient relationship which leads to therapeutic and supportive relationships. With empathy, nurses learn the patient's suffering better. Empathy for patients and others among nurses should be enhanced as early as possible. Empathy and its influencing factors in nursing students thus needs more understanding and deserves investigation.

According to Bandura's social learning theory<sup>7</sup>, social learning is a reaction of an individual to his/her environment which affects his/her learning. Empathy is affected by personal factors (i.e., maturity, ability, and attitude) and environmental factors (i.e., friend, family, and educational institution). A study found that parenting style affects emotional quotient and empathy.<sup>8</sup> Uninvolved parenting style causes aggressive and antisocial personality leading to substance abuse or crimes.<sup>9</sup> However, there is no study focusing directly on the relationship between parenting style and empathy. Only a longitudinal study examining parenting style and parent-children relationship and bond revealed that teenagers' perception of parenting impacts empathy via the perception of parent-children bond balance.<sup>10</sup> Another study revealed that

optimistic students tend to be satisfied with their quality of life at a high level, use action-focused coping in dealing with problems, and alternate their thoughts in positive ways.

Students with a low level of optimism tend to be unsatisfied with their quality of life, deal with escape-avoidance coping, and use drugs.<sup>11</sup> Optimism and positive thought enhancement in teenagers promote various life skills and probably impact an in-depth understanding of life and empathy. Therefore, optimism can be related to empathy. From a literature review about factors having impacts on empathy, it was found that adversity quotient is related to student's compassion and empathy<sup>12</sup>, and the adversity quotient is related to the empathy of at-risk youth.<sup>13</sup> Evidence shows that learning style affects the development of intelligence, social intelligence, emotional intelligence, and empathy. The study examining learning styles of undergraduate students in Jordan revealed that surface learning, deep learning, and strategic learning positively impact empathy ( $r = 0.40, 0.20$  and  $0.21$ , respectively,  $P$ -value  $< 0.01$  for all).<sup>14</sup> All learning styles together predicted 16% of the variance of empathy.<sup>14</sup> Based on the concept of empathy proposed by Morse et al<sup>15</sup>, Bandura's social learning theory<sup>7</sup>, and the literature review, parenting style, optimism, adversity quotient, and learning style are related to empathy.

From the above mentioned about empathy, it can be claimed that empathy is an essential attribute required by nurses. Hence, awareness of empathy must be raised and incubated in nurse training. Although this issue is significant, very few studies focus on empathy in nursing students, especially regarding positive factors such as optimism and adversity quotient. The instruction variable as learning style beneficial for nursing instruction incubates empathy in nursing students. Regarding **objectives**, this study aimed to (1) examine relationships between empathy and its influencing factors namely optimism and adversity quotient, and to (2) compare empathy with different learning styles and parenting styles among nursing students in the eastern region of Thailand. The findings could be useful in initiating activities that enhance empathy in nursing students.

Empathy was placed at the center of the study's **conceptual framework**. It was hypothesized that optimism and adversity quotient were independently correlated with empathy. In addition, learning style and parenting style were independently associated with empathy.

## Methods

The descriptive correlational design was used to examine empathy and its influencing factors in nursing students in the eastern region of Thailand. Study population was undergraduate-level nursing students five educational institutes in the region. Study sample was those who were willing to participate in the study. Based on a small effect size of 0.3 as suggested by Polit and Beck<sup>16</sup>, a type I error of 5%, and a power of test of 80%, a sample size of 123 participants was required. A convenience sample of 130 nursing students in the first to fourth year from three educational institutes in the eastern region of Thailand in 2018 was recruited to participate in this study. Of the total five educational institutes in the eastern region of Thailand, three institutions were randomly selected, namely the Faculty of Nursing, Burapha University in Chonburi province, Phrapokklao Nursing College in Chanthaburi province, and Boromarajonani College of Nursing - Chonburi. The number of participants in each of the three institutes was proportional to the total number of nursing students in the institutes, specifically 53 students from the Faculty of Nursing, Burapha University, 40 from Phrapokklao Nursing College, and 37 from Boromarajonani College of Nursing-Chon Buri.

### Instruments

A self-administered questionnaire was used for the survey. The questionnaire consisted of questions for demographic characteristics (i.e., sex, age, year of study, family income, monthly allowance, family status, hometown, and willingness to enter the program), the empathy scale, the life orientation test (LOT-R), adversity quotient questionnaire, learning style questionnaire, and parenting style questionnaire.

The modified 20-item Jefferson Scale of Physician Empathy - Student Version (Thai version) of Boontham and colleagues<sup>17</sup> was used to measure empathy. The scale measures the ability to understand both feelings and state of mind with others. It also measures the ability to express or action to display empathy. With a 7-point Likert-type scale ranging from 1-strongly disagree to 7-strongly agree, the total score was 20 to 140 points with higher total scores representing a higher level of empathy. This scale had an acceptable internal consistency reliability (Cronbach's alpha coefficient of 0.75).<sup>17</sup> Additionally, empathy was categorized into three levels as low, moderate, and high with the average

total score of 1.00 - 3.00, 3.01 - 5.00, and 5.01 - 7.00 points, respectively.

The life orientation test (LOT-R) was used to measure the level of optimism in nursing students based on Scheier and Carver's conceptual paradigm of optimism, hope, and self-efficacy. This scale was developed in Thai language by Maturapodpong<sup>18</sup> with a 5-point Likert-type scale ranging from 1-strongly disagree to 5-strongly agree. With a total of 16 items, the total scores range from 16 to 80 points where higher total scores indicate a higher level of optimism. The scale had a high internal consistency reliability with a Cronbach's alpha coefficient of 0.86.

Adversity quotient questionnaire was used to examine how nursing students respond to problems and obstacles with a positive attitude, be mindful, take responsibility, and find solutions with determination and patience. The scale was developed in Thai language by Thitipanichyangkoon consisting of four elements of the adversity quotient namely control, ownership, reach, and endurance.<sup>19</sup> This 40-items scale has a 5-point Likert-type scale ranging from 1-strongly disagree to 5-strongly agree. With the total score of 40 to 200 points, higher scores indicate a higher level of abilities to respond the problems and obstacles, take responsibility, and find solutions with determination and patience. The scale had a high internal consistency reliability with a Cronbach's alpha coefficient of 0.95.<sup>19</sup>

A learning style questionnaire was used to determine how nursing students defined the physical characteristics, thoughts, and feelings to perceive, respond to, and interact with their learning environments. This questionnaire was translated into Thai language and modified from Grasha and Riechmen's learning scale by Visudtibhan and Disorntatiwat.<sup>20</sup> It consisted of 60 questions about six learning styles of independent, dependent, collaborative, avoidance, competitive, and participant learning styles. The response was a 5-point Likert-type rating scale ranging from 1-strongly disagree to 5-strongly agree. The participant was assigned his or her learning style based on the style he or she scored the most. The scale had a high internal consistency reliability with a Cronbach's alpha coefficient of 0.81.<sup>20</sup>

A parenting style questionnaire was used to examine how nursing students perceived about parenting behaviors of their parents. This questionnaire developed by Wongkongdej<sup>21</sup> consisted of 67 items to examine the degrees of four parenting styles namely 1) authoritative (high responsiveness and

demandingness), 2) authoritarian (high demandingness but low responsiveness), 3) permissive (high responsiveness but low demandingness), and 4) uninvolved (low responsiveness and demandingness). The response was a 5-point Likert-type rating scale ranging from 1-strongly disagree to 5-strongly agree. The participant was assigned his or her parent's parenting style based on the style he or she scored the most. The scale had a high internal consistency reliability with a Cronbach's alpha coefficient of 0.82.<sup>21</sup>

### Participants protection

The study was approved by the Human Research Ethics Committee of Burapha University. Participants were protected based on anonymity and voluntary nature of the study.

### Data collection procedure

Upon approval by the Human Research Ethics Committee of Burapha University, the researchers contacted the Dean of the Faculty of Nursing, Burapha University, the Director of Phrapokklao College of Nursing - Chanthaburi, and the Director of Boromarajonani College of Nursing - Chonburi for the survey permission. Prospective participants were approached and provided with information about objectives, steps, and voluntary and anonymity of the study. No negative consequences were assured for nursing students who denied the participation. Once written informed consent was obtained, participants were asked to complete the self-administered questionnaire. The questionnaire took about 20 minutes to complete.

### Data analysis

Descriptive statistics including mean with standard deviation (SD) and frequency with percentage were used to summarize demographic characteristics and all study psychosocial variables. The relations between empathy and optimism and adversity quotient were analyzed using Pearson's correlation coefficient. Mean scores of empathy in different learning and parenting styles were tested using one-way ANOVA with least-square difference (LSD) post hoc pairwise comparisons. Statistical significance for all tests was set at a type I error of 5% (or *P*-value < 0.05). All statistical analyses were performed using SPSS software program version 22.

## Results

Of the 130 participants, they were in their average age of  $20.71 \pm 1.56$  years old with a range of 18 to 31 years (Table 1). Majority of participants were in their second year of study (28.5%) and Buddhist (96%). The fathers' occupation was an employee (29.2%) and farmers (19.2%). Majority of them had a family income of 25,001 baht/month or higher (25.4%) followed by 15,001 - 20,000 baht/month (21.5%). Most of them reported their family income to be sufficient to support all family members (70.0%) and their allowance source was mostly from their parent's income (90.8%). They received money from their parents, around 4,000 – 5,000 baht/month. Most of them reported that their parents stayed together (88.0%). They reported their independent willingness to attend the nursing program (84.6%) and they felt attached to the nursing profession (88.5%) (Table 1).

### Empathy, optimism and adversity quotient

The mean total score of empathy was  $111.50 \pm 10.00$  out of 140 points (Table 1). Based on the standardized total score, the empathy was at a high level ( $5.58 \pm 0.50$  points) with as high as 87.7% at the high level and none at the low level. Optimism and adversity quotient were relatively high with the mean total scores of  $65.91 \pm 6.72$  out of 80 points and  $153.53 \pm 16.85$  out of 200 points, respectively. Both optimism and adversity quotient were significantly, positively correlated with empathy ( $r = 0.318$  and  $0.490$ , respectively, *P*-value < 0.01 for both) (Table 1).

**Table 1** Levels of empathy, optimism, and adversity quotient of the participants (N = 130).

Variables	Possible score	Means $\pm$ SD	Correlation with empathy <sup>†</sup>
<b>Empathy</b>			
Total score	20 – 140	111.50 $\pm$ 10.00	-
Standardized total score	1 – 7	5.58 $\pm$ 0.50	
Level of empathy, n (%)			
Low (1.00 – 3.00)		0 (0%)	
Moderate (3.01 – 5.00)		16 (12.3%)	
High (5.01 – 7.00)		114 (87.7%)	
<b>Optimism</b>	16 – 80	65.91 $\pm$ 6.72	0.318*
<b>Adversity quotient</b>	40 - 200	153.53 $\pm$ 16.85	0.490*

<sup>†</sup> Pearson's correlation coefficient.

\* *P*-value < 0.01.

### Empathy and learning styles

Nearly half of the participants were assigned with the dependent learning style (45.4%) (Table 2). The participants with independent learning style had the highest empathy score

(113.86 ± 8.60 points); while those with the avoidance learning style had the lowest score (99.40 ± 12.44 points). Mean scores of empathy among different learning styles were significantly different ( $F_{4,125} = 3.352$ ,  $P$ -value = 0.012). For pairwise comparisons, mean scores of empathy in participants both with avoidance and participant learning styles were significantly lower than those with independent, dependent, and collaborative styles (Table 2).

**Table 2** Total empathy scores by learning styles of the participants (N = 130). Of all

Learning styles	N (%)	Mean empathy scores <sup>†</sup>	Mean difference between learning styles <sup>‡</sup>				
			Independent	Dependent	Collaborative	Avoidance	Participant
Independent	14 (10.8)	113.86 ± 8.60		1.620	1.223	14.457*	8.039*
Dependent	59 (45.4)	112.24 ± 10.13			.397	12.837*	6.419*
Collaborative	41 (30.8)	112.63 ± 9.35				13.234*	6.816*
Avoidance	5 (3.8)	99.40 ± 12.44					-6.418
Participant	11 (8.5)	105.82 ± 7.89					

<sup>†</sup> Comparison of mean scores of different learning styles,  $F_{4,125} = 3.352$ ,  $P$ -value = 0.012.

<sup>‡</sup> Pairwise post hoc comparisons using the LSD test.

\*  $P$ -value < 0.05.

### Empathy and parenting styles

Majority of the participants reported authoritative parenting style (34.6%) and they had the highest mean score of empathy (114.44 ± 10.01 points). While those reporting authoritarian parenting lifestyle were the smallest group (16.2%) and had the lowest empathy score (108.43 ± 7.45 points). Mean scores of empathy among different learning styles were significantly different ( $F_{3,126} = 2.887$ ,  $P$ -value = 0.038). For pairwise comparisons, mean scores of empathy in participants reporting authoritative parenting style were significantly higher than those reporting authoritarian and uninvolved parenting styles (Table 3).

**Table 3** Total empathy scores by parenting styles of the participants (N = 130).

Parenting styles	N (%)	Mean empathy scores <sup>†</sup>	Mean difference between parenting styles <sup>‡</sup>			
			Authoritative	Authoritarian	Permissive	Uninvolved
Authoritative	45 (34.6)	114.44 ± 10.01		6.016*	1.836	5.225*
Authoritarian	21 (16.2)	108.43 ± 7.45			-4.180	-0.791
Permissive	23 (17.7)	112.61 ± 8.81				3.389
Uninvolved	41 (31.5)	109.22 ± 11.00				

<sup>†</sup> Comparison of mean scores of different learning styles,  $F_{3,126} = 2.887$ ,  $P$ -value = 0.038.

<sup>‡</sup> Pairwise post hoc comparisons using the LSD test.

\*  $P$ -value < 0.05.

## Discussions and Conclusion

Among Thai undergraduate nursing students, 87.7% of them reported a high level of empathy. This high proportion of high-level empathy could be associated with the willingness to pursue the nursing profession as 84.6% of all student participants were independently willing to attend the nursing program and 88.5% felt attached to the nursing profession. They might have thought that nursing career would allow them to take care of patients, families, and society.

Empathy is incubated in nurses because it helps them to lessen patient loneliness and to comfort the patients. Empathetic nurses can express their understanding to respond to the feelings and experiences of the patients, which is necessary for developing nurse-patient therapeutic and supportive relationships. It allows the nurses to understand better the patient's suffering.<sup>22</sup> In addition, nursing instruction is intensive in all didactic courses. It focuses on the scientific knowledge to prepare nursing students with laboratory practice and practicum in new places. It includes how to enhance the nursing students to adjust themselves to new environments. Nursing students have to put patient's safety as the priority. Therefore, they are trained to treat the patients as human beings. Empathy incubation is thus considered a necessary social knowledge required by all nurses.<sup>1</sup>

Optimism was found positively related to empathy at a low level ( $r = 0.318$ ,  $P$ -value < 0.01). The finding confirms a theoretical concept that optimism development facilitates a multi-dimensional viewpoint toward life. Optimistic people learn situations with hope and believe in good outcomes. They are also confident in achieving their goals. Hence, optimism positively impacts healthy behavior and positive emotion. This finding agrees with Seligman who believed that optimism allows people to see failure and uncertainty in life as temporary matters.<sup>23</sup> When facing harsh times and threats, they see them as challenging and attempt to overcome them. Optimistic people understand life and see life as a multifaceted subject. Optimism enhances positive thinking, promotes life skills, and correct understanding about life, which altogether lead to empathy.<sup>23</sup> A study by Hoffart and Sexton revealed the association between optimism and empathy.<sup>24</sup> Optimism-based cognitive therapy could lessen suffering and increase problem understanding and empathy in patients with personality disorders. Although there is no direct relationship found from the literature review, the finding of this study is

empirical evidence indicating that optimism is positively related to nursing students' empathy.

The result showed that the adversity quotient was positively related to the nursing students' empathy at a moderate level. This is consistent with Stoltz's concept stating that the adversity quotient is endurance, perseverance, and resoluteness to pass the difficult times in life.<sup>25</sup> An individual can look at the problems and obstacles in positive ways. People with the adversity quotient stay tuned, are responsible, and earnestly seek solutions for problems. Empathy is associated with adversity quotient because it helps individuals be aware of and understand themselves. This understanding allows them to understand others and see others as human beings. People with adversity quotient and empathy can cope with hard times in their lives effectively. Since they can foresee the adverse effects of self-assertion, people with adversity quotient and empathy undergo and creatively seek solutions for the problems. Consequently, as found from the literature review, adversity quotient was related to emotional quotient and empathy, and both adversity quotient and empathy were highly associated with emotional quotient.<sup>26</sup> Therefore, it can be claimed that adversity quotient is related to empathy, and this agrees with the finding of a study revealing that adversity quotient was related to the empathy of at-risk youth.<sup>13</sup> Also, adversity quotient was related to compassion and empathy.<sup>14</sup>

According to Bandura's social learning theory, learning was developed from mutual interaction between learners and the social environment.<sup>7</sup> Most individuals' behaviors were observation and imitation through the thinking process, direct experience, and social norms and values. In this study, nursing students reported the learning styles they often used. It is not limited to only one style. Most participants reported the dependent learning style (45.4%); while only 10.8% reported the independent learning style, and 30.8% reported the collaborative learning style. However, scores of empathy among these learning styles were not different.

No difference of empathy scores among nursing students with dependent, independent, and collaborative learning styles could be due to various reasons. Students with dependent learning style may learn individually in specific class times, but they can rely on instructors and classmates as their sources of knowledge. Although creativity may not be developed, they can learn some helpful knowledge. For independent learning, students have chances to think and do things on their own and listen to others' opinions in class at the same time.

Through collaboration learning, students can co-work with their instructors and peers in learning activities.

On the other hand, nursing students with participant and avoidance learning styles had empathy scores that were statistically lower than those with dependent, independent, and collaborative learning styles. It could be stated that through participant learning, students who want to learn the content and love attending classes attend their classes as frequently as possible. They may ignore or rarely participate in extra curriculum activities. For avoidance learning style, the lowest empathy score (99.40, SD = 12.44). Students neither pay attention to what the instructor taught and do in classes nor participate in activities with peers and instructors. They see attending classes as uninteresting. These responses can be explained that people who ignore society, neglect any circumstances, avoid facing problems tend to develop psychological inflexibility. It is hard to develop empathy in these people, and they can hardly adjust to any form of relationship<sup>24</sup>. However, a study by Mahasneh<sup>14</sup> indicated that surface learning, deep learning, and strategic learning were positively related to the empathy of undergraduate students in Jordan ( $r=.40$ ,  $r=.20$ ,  $r=.21$ ,  $p < .01$ ), and they all together could predict empathy at 16%.

Most participants reported an authoritative parenting style ( $n = 45$ , 34.6%) and have the highest empathy score (114.44, SD = 10.01). In contrast, nursing students with the authoritarian parenting style have the lowest empathy score (108.43, SD = 7.45). There was a significant difference between mean score of empathy among parenting styles ( $F_{3,126} = 2.887$ ,  $p = .038$ ). When comparing empathy scores among parenting styles, the results showed that nursing students with the authoritative parenting style have empathy scores higher than the authoritarian and uninvolved parenting styles. It could be assumed that when nursing students were raised by warmth, affection, and support, they could express their positive emotions with others. While nursing students with authoritarian and uninvolved parenting styles faced a threat, punishment, neglect, or emotionally detached. Then it so hard to express positive emotions with others.

Empathy must be a factor associating with the capacity to deal with problems and manage obstacles and the optimism of nursing students. Nursing administrators and educational personnel can use the study findings to set the policy, design courses, and manage activities that promote nursing students'

empathy. The parenting style factor confirms the importance of the family and children raising method, promoting empathy in youth.

The study of this kind should be extended to examining the relationship of the factors and investigating the factors influencing the empathy of nursing students. Also, other newly existed factors due to social and cultural changes should be scrutinized; so that the empathy of nursing students can be more accurately predicted.

This study was the only study among nursing students in the Eastern Region. Therefore, there are limitations to generate to the other areas in Thailand. However, it should be helpful for nursing instructors to study nursing students in different places and select the variables appropriate for each area's context.

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