

## EVALUATION OF EMPATHY IN NURSING STUDENTS

Giselda Lopes Aquino Dineli<sup>1</sup>   
Ruth Beresin<sup>1</sup> 

<sup>1</sup>Faculdade Israelita de Ciências da Saúde Albert Einstein, Programa de Mestrado em Ensino de Saúde. São Paulo, SP, Brasil.

### ABSTRACT

**Objective:** to compare empathy levels among nursing students at different course stages considering gender and age.

**Method:** this study was conducted at the Faculdade Israelita de Ciências da Saúde Albert Einstein, employing a quantitative, descriptive, comparative and cross-sectional approach. The sample included 169 four-year Nursing undergraduate students. A sociodemographic questionnaire was used to collect information from August 2020 to April 2022 and the Multidimensional Interpersonal Reactivity Scale was used to measure empathy. The relationships between empathy and independent variables were analyzed using linear models and presented with estimated means, confidence intervals and p-values, with a significance level of 5%.

**Results:** the comparison of empathy levels in different course periods did not reveal significant relationships with the course year. However, the lowest score on the three subscales occurred in the fourth year. When analyzing the relationship between course years and gender, no subscale showed significant differences. A significant difference in the Empathic Consideration subscale emerged in the second year when separating by course year, with higher scores for females.

**Conclusion:** the study highlights the continued importance of teaching empathy in nursing training. Therefore, the use of the Multidimensional Interpersonal Reactivity Scale proves to be valuable for evaluating interventions and offering support for adjustments in educational strategies. Commitment to improving empathy throughout professional training and practice is essential to ensure truly patient-centered healthcare.

**DESCRIPTORS:** Nursing. Nursing education. Empathy. Nursing students. Undergraduate nursing programs. Patient-centered care.

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# AVALIAÇÃO DA EMPATIA EM ESTUDANTES DE ENFERMAGEM

## RESUMO

**Objetivo:** comparar os níveis de empatia entre estudantes de enfermagem em diferentes estágios da graduação, considerando gênero e idade.

**Método:** estudo conduzido na Faculdade Israelita de Ciências da Saúde Albert Einstein, com abordagem quantitativa, descritiva, comparativa e transversal. A amostra incluiu 169 alunos dos quatro anos de graduação em Enfermagem. Utilizou-se um questionário sociodemográfico para coletar informações no período de agosto de 2020 a abril de 2022 e a Escala Multidimensional de Reatividade Interpessoal para mensurar empatia. As relações entre empatia e variáveis independentes foram analisadas, utilizando modelos lineares e apresentados com médias estimadas, intervalos de confiança e valores-p, com nível de significância de 5%.

**Resultados:** a comparação dos níveis de empatia em diferentes períodos da graduação não revelou relações significativas com o ano de graduação. No entanto, o menor escore nas três subescalas ocorreu no quarto ano. Ao analisar a relação entre anos de graduação e gênero, nenhuma subescala apresentou diferenças significativas. Ao separar por ano de graduação, a diferença significativa na subescala Consideração Empática surgiu no segundo ano, com escores mais altos para o gênero feminino.

**Conclusão:** o estudo destaca a importância contínua do ensino de empatia na formação em enfermagem. Assim, a utilização da Escala Multidimensional de Reatividade Interpessoal se mostra valiosa para avaliar intervenções e oferecer subsídios para ajustes nas estratégias educacionais. O compromisso com o aprimoramento da empatia ao longo da formação e prática profissional é essencial para garantir uma assistência de saúde verdadeiramente centrada no paciente.

**DESCRITORES:** Enfermagem. Educação em enfermagem. Empatia. Estudantes de Enfermagem. Programas de Graduação em Enfermagem. Assistência Centrada no Paciente.

# EVALUACIÓN DE LA EMPATÍA EN ESTUDIANTES DE ENFERMERÍA

## RESUMEN

**Objetivo:** comparar los niveles de empatía entre estudiantes de enfermería en diferentes etapas de graduación, considerando género y edad.

**Método:** estudio realizado en la Facultad Israelita de Ciencias da Saúde Albert Einstein, con enfoque cuantitativo, descriptivo, comparativo y transversal. La muestra estuvo compuesta por 169 estudiantes de pregrado en Enfermería de cuatro años. Se utilizó un cuestionario sociodemográfico para recolectar información de agosto de 2020 a abril de 2022 y la Escala de Reactividad Interpersonal Multidimensional para medir la empatía. Las relaciones entre empatía y variables independientes se analizaron mediante modelos lineales y se presentaron con medias estimadas, intervalos de confianza y valores p, con un nivel de significancia del 5%.

**Resultados:** la comparación de los niveles de empatía en diferentes períodos de graduación no reveló relaciones significativas con el año de graduación. Sin embargo, la puntuación más baja en las tres subescalas se produjo en el cuarto año. Al analizar la relación entre años de graduación y género, ninguna subescala mostró diferencias significativas. Al separar por año de graduación, la diferencia significativa en la subescala de Consideración Empática surgió en el segundo año, con puntuaciones más altas para las mujeres.

**Conclusión:** el estudio destaca la importancia continua de enseñar la empatía en la formación de enfermería. Por lo tanto, el uso de la Escala Multidimensional de Reactividad Interpersonal resulta valiosa para evaluar intervenciones y ofrecer apoyo para ajustes en las estrategias educativas. El compromiso de mejorar la empatía a lo largo de la formación y la práctica profesional es esencial para garantizar una atención sanitaria verdaderamente centrada en el paciente.

**DESCRIPTORES:** Enfermería. Educación en enfermería. Empatía. Estudiantes de Enfermería. Programas de pregrado en enfermería. Atención centrada en el paciente.

## INTRODUCTION

In the high-level academic and professional context, the demand for individuals who not only possess technical skills, but also behavioral skills, has increased significantly. Dealing effectively with the demands of interpersonal situations is essential to establishing productive and lasting relationships. In this scenario, empathy, defined as the ability to put oneself in someone else's shoes (situation), emerges as a crucial social skill for success<sup>1</sup>.

Originating from the Greek word *empathia*, empathy involves the action of understanding another person's emotions, thoughts and attitudes, identifying with them. Edward Bradner Titchener, an English psychologist, introduced the term in 1909, highlighting its relevance in observing and understanding human behavior<sup>2</sup>. Since the end of the 19th century, empathy has attracted increasing attention from scholars of human behavior and educators, being recognized as a vital construct for life and social influence<sup>3-5</sup>.

Empathy is understood as an affective response of evolutionary origin, and not only implies understanding the emotions of others, but also adopting the other's point of view, with attitudes which promote help, care and solidarity<sup>6-8</sup>. An absence of empathy negatively impacts social adjustment and is intrinsically linked to social intelligence, affecting interpersonal relationships and decision-making on issues related to care, respect and morality<sup>7-9</sup>.

Empathy plays a fundamental role in the academic context, positively influencing the cognitive development of nursing students. Positive communication strengthens goals during academic adjustment, promoting understanding of the importance of caring practices in a future professional career. The practical application of empathy in training nursing students represents a unique learning opportunity, challenging them to not only develop technical knowledge, but also empathetic values and attitudes<sup>10-12</sup>.

Humanized care based on empathy establishes communication that strengthens trust between health professionals and patients, resulting in more accurate anamnesis and greater adherence to therapeutic procedures. The importance of empathy is so striking that organizations such as the American Association of Medical Colleges consider its teaching a consistently relevant topic in academic training, positively impacting communication, diagnosis and patient adherence to treatment<sup>13-15</sup>.

However, studies indicate a decrease in students' empathy level throughout the nursing course, highlighting differences between genders, but without consensus. Given this scenario, the need to understand the teaching of emotions, encourage debate and increase scientific production on empathy in nursing students becomes evident<sup>16-21</sup>.

Therefore, the present study aims to compare empathy levels among nursing students at different course stages, considering gender and age. Furthermore, it aims to assess overall empathy levels and investigate whether there is a decrease over the course periods. These objectives seek to understand the dynamics of empathy in the academic nursing context, providing insights for improving the teaching and training of these professionals.

## METHOD

This is a quantitative, descriptive, comparative and cross-sectional study conducted at the Faculdade Israelita de Ciências da Saúde Albert Einstein (FICSAE). This consists of a private higher education institution and is part of the hospital and educational complex of Hospital Israelita Albert Einstein, a renowned private institution in the health sector, located in the city of São Paulo, Brazil.

The population consisted of 320 students from the first to the last semester of the Nursing Degree at the researched faculty. The total sample consisted of 169 four-year nursing students who agreed to participate and completed the research form. Furthermore, they met the following inclusion criteria: being a regularly enrolled student and being over 18 years old.

A sociodemographic profile questionnaire prepared by the authors was used as a data collection instrument to characterize the sample, with which information was collected on gender, age, semester of graduation, marital status, children, religion, professional activity and number of hours of professional activities. Data was collected from August 2020 to April 2022.

Empathy was measured using the Multidimensional Interpersonal Reactivity Scale (EMRI), a Brazilian adaptation of the IRI scale by Mark H. Davis<sup>22</sup>. The EMRI is composed of 21 objective items, evaluated on a 5-point scale, covering affective and cognitive dimensions. The EMRI subscales include Empathic Consideration (affective dimension), Taking the Perspective of Another (cognitive dimension), and Personal Distress (affective dimension), each with seven items. The IMRI originally has 4 subscales, with the Fantasy subscale (which corresponds to the respondent's tendency to identify with fictional characters from films, books and theater) being the 4th subscale. However, it has been excluded from several studies due to cultural non-conformity. Therefore, the Brazilian version includes only 3 subclasses<sup>22</sup>. The analysis of the results involved calculating scores based on the sum of the item values, considering specific inversions of some of them<sup>22</sup>.

The data were collected by the first author of the study, with approval of the project by the Research Project Management System and the Research Ethics Committee of the Israelita Albert Einstein Hospital. Collection took place in person, with the consent of the responsible managers and guaranteed confidentiality in accordance with international and local regulations, including National Health Council Resolution N<sup>o</sup> 466/12. The researcher ensured exclusive access to the collected data, maintaining confidentiality and privacy of the participants, without using identifiable information at any study stage.

The relationships between the dependent variable (degree of empathy) and independent variables (gender, age, ethnicity, marital status, children, number of children, religion and professional activity) were established. The sample characteristics were described by frequencies and means, using graphs and normality tests. Linear or generalized linear models were applied to evaluate changes in empathy levels in the different semesters, considering gender and age. The results were presented with estimated means, 95% confidence intervals and p-values, using effect measures such as mean ratios or mean differences. The analyzes were conducted in the R and SPSS programs, with a significance level of 5%<sup>23-25</sup>.

## RESULTS

The total sample consisted of 169 students from the four years of the nursing course, 58 (34.32%) from the first year, 52 (30.77%) from the second, 29 (17.16%) from the third and 30 (17.75%) of the fourth year. A predominance of women stands out in all course years, corresponding to 88.69% of the total sample. Among other highlights, 89.35% are single, 92.20% do not have children, 76.33% are white and 35.33% declared themselves Catholic.

Regarding the professional activities performed by the students in the sample, approximately half (49.11%) carry out some activity. The activities offered during the undergraduate course include: 8.28% extracurricular internships, 24.26% are monitors and 10.65% are nursing technicians. Furthermore, 7.69% perform other types of work.

Table 1 also presents comparisons between course years in relation to these activities mentioned above. There are significant differences between the course years for the variables: 'Currently perform some professional activity' (p-value=0.000), 'Extracurricular internship' (p-value=0.000) and

'Monitoring' (p-value=0.007). The percentage of students who perform some professional activity or who undertake an extracurricular internship grows significantly as the course year increases. The percentage of participants for the Monitoring activity increases until the third year and then decreases.

**Table 1** – Professional and/or academic activity developed by undergraduate nursing students during the 4 years of the course. São Paulo, SP, Brazil, 2022. (n=169)

Course year	1st year n(%)	2nd year n(%)	3rd year n(%)	4th year n(%)	All N(%)	*p-value
Currently perform some professional activity						
No	42 (72.41)	25 (48.08)	11 (37.93)	8 (26.67)	86 (50.89)	0.000
Yes	16 (27.59)	27 (51.92)	18 (62.07)	22 (73.33)	83 (49.11)	
Extracurricular internship						
No	58(100.00)	51(98.08)	28(96.55)	18(60.00)	155(91.72)	0.000
Yes	0(0.00)	1(1.92)	1(3.45)	12(40.00)	14(8.28)	
Monitoring						
No	48(82.76)	37(71.15)	16(55.17)	27(90.00)	128(75.74)	0.007
Yes	10(17.24)	15(28.85)	13(44.83)	3(10.00)	41(24.26)	
Nursing technician						
No	56(96.55)	46(88.46)	25(86.21)	24(80.00)	151(89.35)	0.100
Yes	2(3.45)	6(11.54)	4(13.79)	6(20.00)	18(10.65)	
Other work						
No	54(93.10)	47(90.38)	26(89.66)	29(96.67)	156(92.31)	0.703
Yes	4(6.90)	5(9.62)	3(10.34)	1(3.33)	13(7.69)	

\* Chi-squared test

The average is 22 years (SD=5.79), with the lowest value being 18 years and the highest value being 52 years. Furthermore, the number of children ranged from 0 to 6 children (SD=0.57), and working time ranged from 0 to 11 years (SD=2.14).

Considering the total sample, the scores of the three subscales of the EMRI instrument and the empathy score obtained with the same instrument are shown in Table 2. The score for each of the three subscales (Empathic Consideration, Taking Perspective and Personal Distress) corresponds the sum of the points of the seven items of the collection instrument which compose each subscale, and therefore range from a minimum of 7 points to a maximum of 35 points. The empathy score is the sum of the 21 items of the EMRI instrument and varies from 21 to 105 points. The Empathic Consideration and Taking Perspective subscale scores were higher than the Personal Distress subscale score.

**Table 2** – Empathy scores obtained using the multidimensional interpersonal reactivity scale for the total sample. São Paulo, SP, Brazil, 2022. (n=169)

Variable	N	Mean	Standard deviation	Minimum	P25	Median	P75	Maximum
Empathic Consideration	169	27.93	4.34	16	25.50	28	32	35
Taking Perspective	169	26.85	4.53	14	24.00	27	31	35
Personal Distress	169	18.92	4.45	8	16.00	19	22	32
Empathy score	169	73.70	8.44	48	67.50	74	80	93

The description of the results (minimum value, P25, median, P75 and maximum value) of each of the items of each subscale is shown in figures 1, 2 and 3 in the Boxplot graphs. The numerical value

displayed within the interquartile range (P25 up to P75) corresponds to the average score of each item. It is noted that all items in the Personal Distress subscale (Figure 3) have the 75th percentile (P75) equal to or less than four points, while the P75 coincides with the maximum value of five points in the other two subscales (Empathic Consideration and Taking Perspective), with the exception of item 19 in the Taking Perspective subscale.

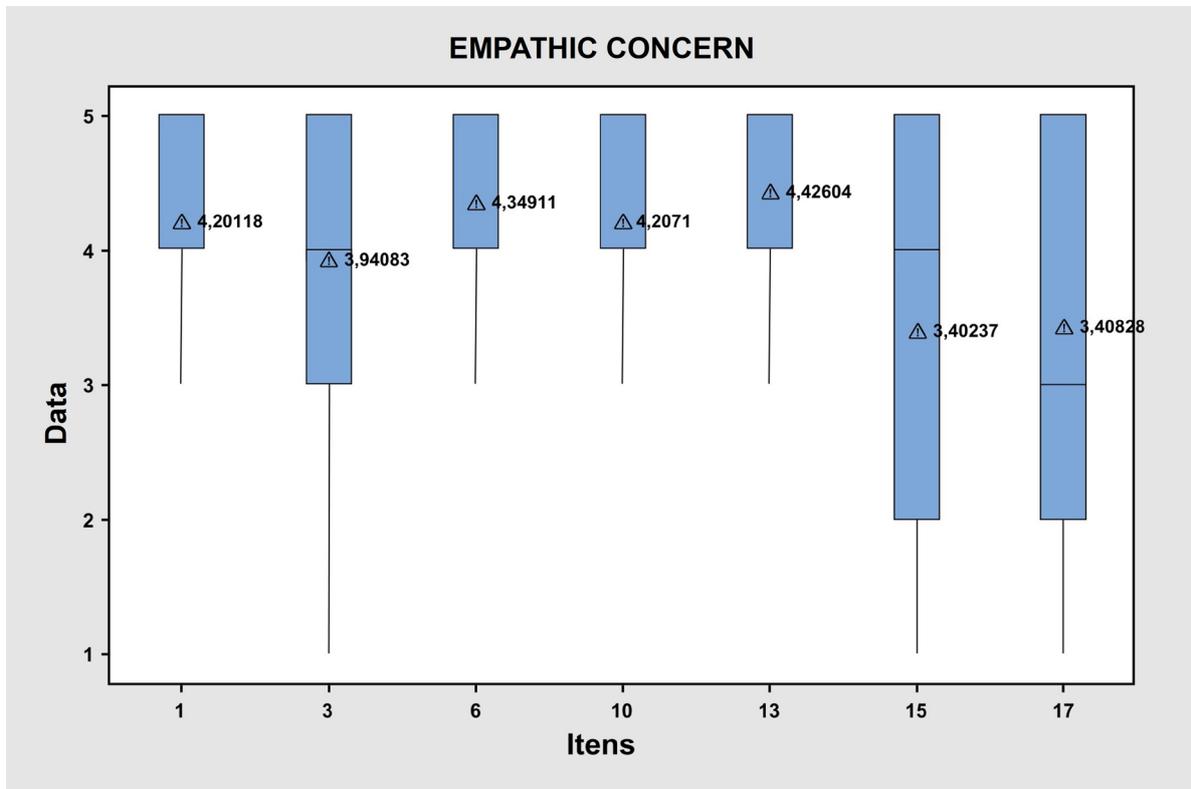


Figure 1 – Results per item of the Empathic Consideration subscale. São Paulo, SP, Brazil, 2022.

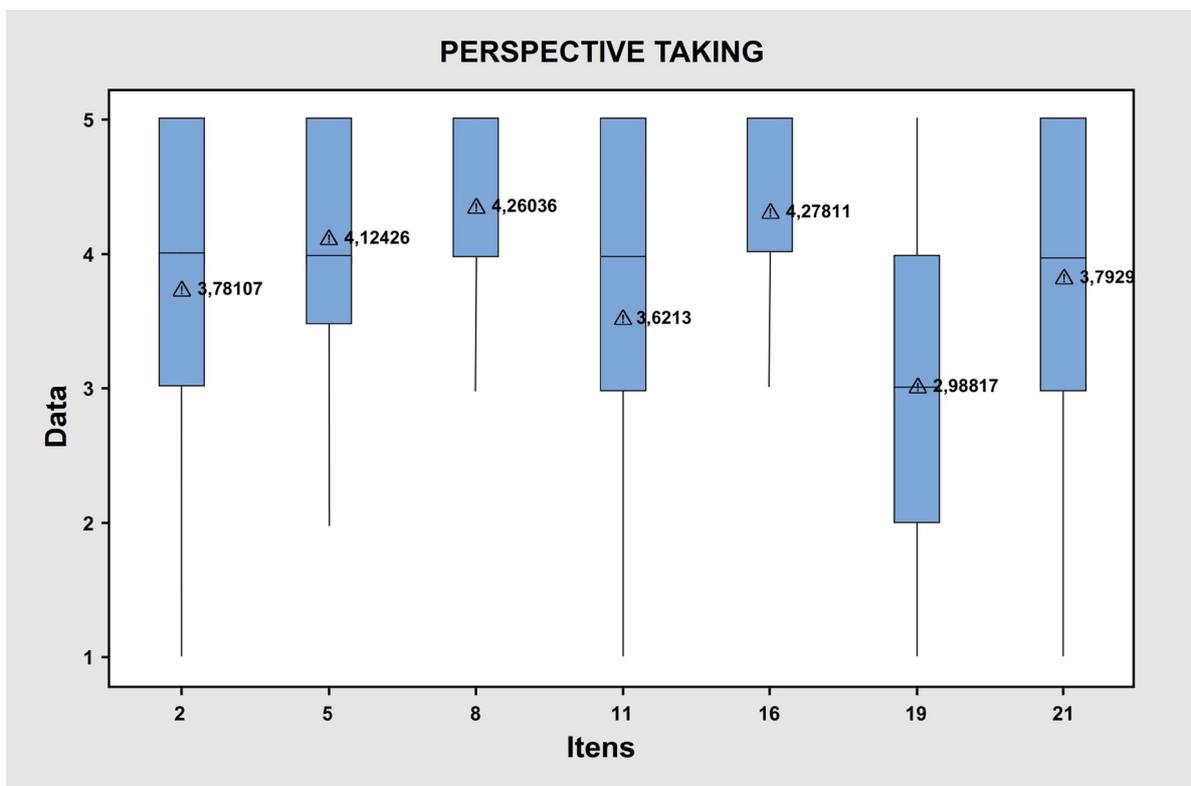
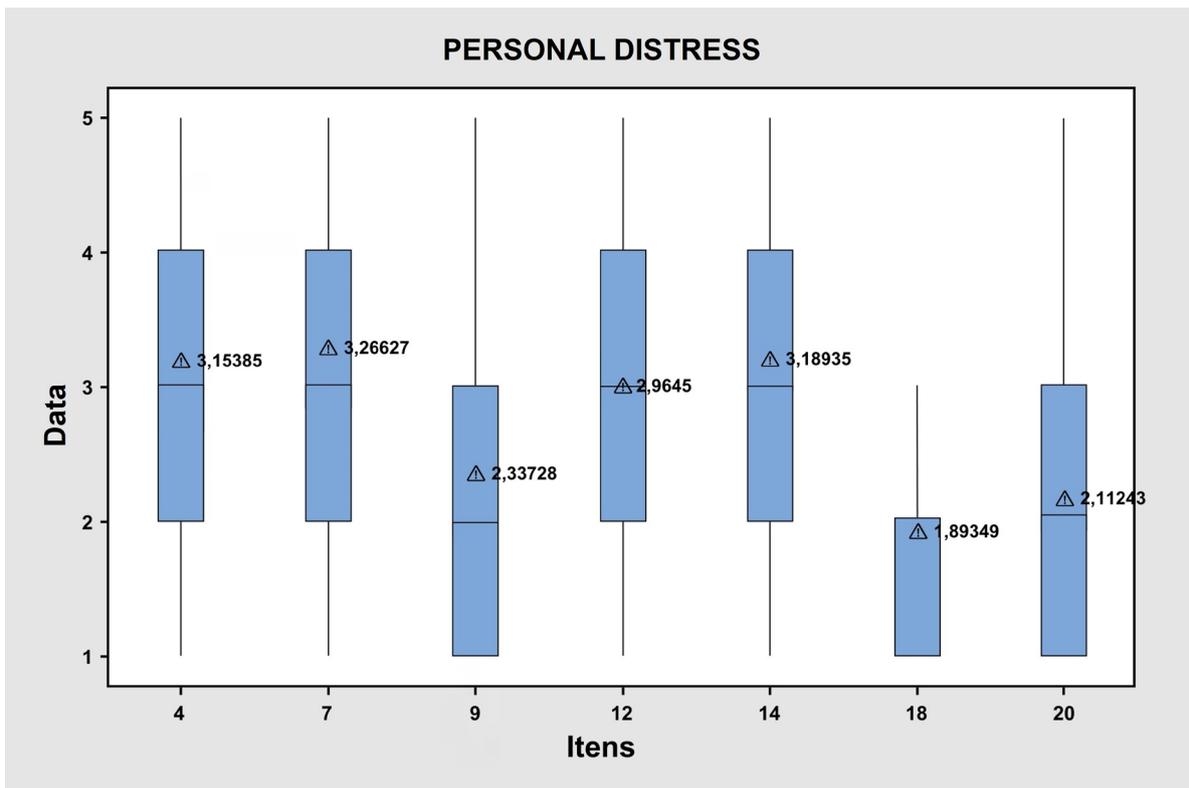


Figure 2 – Results per item of the Taking Perspective subscale. São Paulo, SP, Brazil, 2022.



**Figure 3** – Results per item of the Personal Distress subscale. São Paulo, SP, Brazil, 2022.

The three subscales were compared in relation to the gender variable. The statistical test revealed a significant difference between genders only for the Empathic Consideration subscale ( $p\text{-value}=0.002$ ). Therefore, the average score for females is higher in this subscale than that for males.

A comparison was made between the subscales and the course year variable. As a result, there was no significant relationship with the student's course year in the three subscales and the empathy score ( $p\text{-value}>0.05$ ). It is worth mentioning that the lowest score in the three subscales appears in the fourth course year, although not significant.

Furthermore, no subscale showed significant differences between the course years for both females and males ( $p\text{-value}>0.05$ ).

Separating by course year, the comparison between genders showed that the significant difference in the Empathic Consideration subscale appeared in the second course year ( $p\text{-value}=0.012$ ). The average score for females is higher than that for males. There are no differences between genders in the other subscales and in the empathy score. It was not possible to make comparisons for the third course year because there is only one male student.

## DISCUSSION

Empathy plays a fundamental role in professional practice, especially in the healthcare sector where understanding and emotional connection between professionals and patients are crucial to treatment success. The predominance of females among nursing students, in line with research results from the Federal Nursing Council (*Conselho Federal de Enfermagem – Cofen*) and the Oswaldo Cruz Foundation (Fiocruz), highlights the importance of understanding gender differences in the expression of empathy<sup>14,26</sup>.

The results indicate empathy averages among nursing students as above the average for medical students obtained in previous studies<sup>27</sup>. The use of the EMRI scale reveals higher averages in the Empathic Consideration, Taking Perspective and Personal Distress subscales compared to

medical students, highlighting the uniqueness of nursing training. These averages are in line with results obtained in similar research carried out at state universities in Paraná<sup>3,27</sup>.

Involvement in active methodologies, such as Realistic Simulation, emerges as a possible catalyst for the high empathy levels observed among nursing students. These activities provide practical situations that highlight the need to develop otherness and essential communication skills that are fundamental for empathy in clinical practice<sup>26</sup>.

The results highlight the association between higher scores in Empathic Consideration and Decision Making, together with lower scores in Personal Distress, suggesting that empathetic professionals face less stress, depression and Burnout Syndrome. Interpersonal understanding and acceptance of otherness as an integral part of professional life contribute to this resilience<sup>28</sup>.

Analysis of gender differences reveals a significant difference in the Empathic Consideration subscale, with females presenting higher scores. This difference is in line with studies in the medical field, indicating that women tend to be more emotional, think more about the suffering of others and show greater otherness. When comparing the course years, it is observed that the Empathic Consideration subscale shows differences in the second year, with females scoring higher, although not significant. This result may be associated with the education format given to girls, in which socialization is encouraged, favoring skills in interpersonal relationships and greater expression of affection. In other words, sharing feelings and understanding the emotions of others would be characteristics more associated with the female social role than with the stereotypical male role<sup>29</sup>.

Although morphological differences in the brain can influence the expression of emotions, there is a strong cultural correlation, where women's historical role associated with care makes them more likely to express affection. The absence of a significant relationship between course year and empathy, other than a trend in the fourth year, highlights the continued need for effective pedagogical practices<sup>17,20</sup>.

International research varies regarding changes in empathy levels throughout the undergraduate years. Results from a study in Sweden indicate greater empathy in the sixth semester, while Colombian and Spanish studies differ in their findings. Although our study observed a non-significant decrease in the fourth year, it does not replicate the trends observed in other contexts<sup>30</sup>. Considering that the percentage of students who carry out some professional activity or do an extracurricular internship grows significantly as the course year increases, some possible justifications for the decrease found may be: adaptation to the clinical environment and consequent desensitization due to repeated exposure, high academic loads, stress, emotional exhaustion and mechanization of care.

Promoting interactive practices, such as peer tutoring, can strengthen empathetic bonds during training. Pedagogical strategies that foster empathy from the beginning are essential to overcome challenges and ensure its maintenance in professional practice<sup>28</sup>.

## CONCLUSION

When evaluating empathy levels, the Empathic Consideration and Taking Perspective subscales presented higher scores compared to the Personal Distress subscale.

When considering gender, a significant difference was only observed in the Empathetic Consideration subscale, where women scored higher.

The comparison of empathy levels in different course periods did not reveal significant relationships with the course year. However, it is notable that the lowest score on the three subscales occurred in the fourth year.

In addition, no subscale showed significant differences when analyzing the relationship between course years and gender. However, when separating by course year, the significant difference in the Empathic Consideration subscale emerged in the second year, with higher scores for females.

Realizing that empathy is an integral part of treatment and care, as important as technical knowledge, has encouraged health education institutions to incorporate this dimension into their curricula. Humanization is perceived as a skill that can be learned, leading institutions to develop repertoires of pedagogical practices.

The use of the Multidimensional Interpersonal Reactivity Scale (EMRI) proves to be valuable for evaluating interventions, before and after, by both professionals and students, offering support for adjustments in educational strategies. The importance of active listening, whether to patients, colleagues or teachers, emerges as fundamental for learning empathy, promoting productive relational experiences and the continuous development of this skill among students, teachers and the institution as a whole. Commitment to improving empathy throughout professional training and practice is essential to ensure truly patient-centered healthcare.

Despite the small sample size and low representation of male participants, this study highlights the continued importance of teaching empathy in nursing training. However, additional investigations are needed to assess the effectiveness of specific pedagogical approaches in promoting empathy in order to fully understand its impact throughout professional training.

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## NOTES

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### CONTRIBUTION OF AUTHORITY

Study design: Dineli GLA, Beresin R.

Data collection: Dineli GLA.

Data analysis and interpretation: Dineli GLA.

Discussion of results: Dineli GLA.

Writing and/or critical review of content: Dineli GLA, Beresin R.

Review and final approval of the final version: Beresin R.

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### CORRESPONDING AUTHOR

Giselda Lopes Aquino Dineli.

gisalibraspsi@gmail.com

