

Effect of Moral Sensitivity on Empathy Levels of Nursing Students

Abstract

Background: Empathy skills are essential components of nursing care plans for nursing students to provide high-quality care to patients and are closely associated with moral sensitivity.

Aim: This study aims to explore the relationship between nursing students' empathy skills, moral sensitivity, and other related variables.

Methods: This research was designed as a cross-sectional study. The study was conducted at a state university offering a four-year nursing program, with a sample size of 353 students. Data were collected via an online survey in March 2022. Students who agreed to participate voluntarily were included in the study. Data analysis was performed using Pearson correlation and multiple linear regression methods.

Results: A total of 353 students participated in the study, with a mean age of 21.83±1.39 years. The mean empathy score was 162.03±25.40, and the mean moral sensitivity score was 97.63±30.21, indicating moderate levels for both. The Holistic Approach sub-dimension of moral sensitivity ($r=-0.309$, $p=0.021$) and the Interpersonal Orientation sub-dimension (-0.260 , $p=0.001$) were associated with empathy skills and positively influenced their development. Additionally, the Execution sub-dimension of the moral sensitivity questionnaire was identified as a predictor of empathy skills ($B=-1.27$, $p=0.002$).

Conclusion: Moral sensitivity is an important factor in the development of empathy skills among nursing students. However, the empathy skills of nursing students were found to be below the desired level. To enhance the empathy skills of nursing students, theoretical course content should be enriched, and their empathy levels should be assessed through bedside observations during clinical practice.

Keywords: *Clinical practice, empathy skills, ethics, nursing students, moral sensitivity*

 Burcu Bakırloğlu,  Bengü Çetinkaya

Department of Pediatric Nursing, Pamukkale University
Faculty of Health Sciences, Denizli, Türkiye

Introduction

In the nursing profession, developing, synchronizing, sharing clinical and theoretical information, and adhering to ethical principles are fundamental components for ensuring safe and effective patient care.¹ The concept of morality was first explored by Lawrence Kohlberg, and building on this foundation, James Rest introduced the term moral sensitivity as one of the key components of moral action.^{2,3} In the context of ethical conflicts, a high level of moral sensitivity is required to accurately identify the problem and make appropriate decisions. Moral sensitivity enables nurses to correctly perceive ethical issues and understand patient needs.^{4,5} Nursing students must develop moral sensitivity to enhance their nursing practice, as acquiring this skill early leads to better quality patient care.⁶

Travelbee,⁷ a prominent nursing theorist, described empathy in her Human-to-Human Relationship Model as "basically an intellectual process combined with an effort to understand someone else, trying to understand how a person feels, even though I can't feel what they feel." The social environment and family are two important factors influencing the development of empathy. Additionally, teamwork skills, subjective well-being, age, and gender also emerge as significant factors in fostering empathy among nursing students in patient care.⁸ While higher levels of empathy in nurses are associated with more positive attitudes toward patients, studies report that empathy levels tend to decrease as burnout levels increase.^{9,10}

While empathy supports better analysis and interpretation of the moral problems experienced, it also plays a role in recognizing moral problems in others. Fostering empathy among students has become essential for developing moral sensitivity.¹¹ In their study, Nesime and Belgin¹² found that patient advocacy education included in undergraduate programs positively contributed to the moral sensitivity of nursing students. Another study identified factors affecting the development of empathy, including innate characteristics, physiological and mental states, professional identity, work environment, life experience, and situational stressors.¹³ Technological advancements in the healthcare field and the recent Coronavirus Disease 2019 (COVID-19) pandemic have introduced numerous ethical challenges.^{14,15} Consequently, ethical dilemmas in the nursing profession have become inevitable.

In addition to the theoretical and clinical education of nursing students, fostering moral sensitivity and empathy skills is crucial to improving the quality of patient care. This article aims to evaluate nursing students' empathy skills and the factors influencing them.

Cite this article as: Bakırloğlu B, Çetinkaya B. Effect of Moral Sensitivity on Empathy Levels of Nursing Students. J Educ Res Nurs. 2025;22(2):97-101.

Corresponding author: Burcu Bakırloğlu

E-mail: burcu_bkrl@icloud.com

Received: November 01, 2023

Accepted: January 02, 2025

Publication Date: March 01, 2025



Copyright@Author(s) - Available online at www.jer-nursing.org

Content of this journal is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.

Research Questions

1. Are nursing students' empathy skills related to moral sensitivity?
2. Does moral sensitivity affect the development of empathy skills in nursing students?
3. What other variables are related to nursing students' empathy skills?

Materials and Methods

Research Design

This research is designed as a cross-sectional study.

Participants and Research Context

The study population consisted of 600 second-, third-, and fourth-year nursing students enrolled at a state university in western Türkiye. At this university, clinical practice internships are conducted in the second and third years, lasting 28 weeks per academic year, with 16 hours of practice each week. In the fourth grade, nursing students work as interns, participating in 24 hours of clinical practice per week over 28 weeks. First-year students were excluded from the study as clinical practice internships are not part of their curriculum. The aim was to reach the entire study population. A total of 353 students voluntarily completed the questionnaire, achieving a participation rate of 58.83%.

Data Collection Tools

Introductory Information Form

This form was prepared by the researchers following a comprehensive literature review.^{5,6,8,10,12,15} It consists of two sections. The first section collects demographic information about the students, while the second section includes questions about whether they have received empathy or ethics training and whether they have encountered ethical dilemmas. Students' academic success was evaluated using their cumulative grade point average.

Empathy Skill Scale

The Empathy Skill Scale (ESS) was developed by Dökmen in 1988,¹⁶ based on Kohlberg's moral development theory. The scale comprises six scenarios depicting daily life problems involving friends or family, with 12 potential empathetic responses for each scenario. Participants were instructed to select four out of 12 empathetic responses, with each response scored between 0 and 10 points. Accordingly, the total possible score on the ESS ranges from a minimum of 62 to a maximum of 219. Additionally, one of the responses was intentionally designed to be irrelevant to the constructed problem, and surveys in which participants selected this response were deemed invalid. In this study, the reliability coefficient of the scale was calculated to be 0.82.

Moral Sensitivity Questionnaire

This scale, developed by Lützen et al.¹⁷ to assess the ethical sensitivity of health-care professionals during the ethical decision-making process, was adapted to Turkish culture by Tosun.¹⁸ It consists of six sub-dimensions—autonomy, benevolence, holistic approach, conflict, execution, and interpersonal orientation—and includes a total of 30 questions. Scores on the scale range from a minimum of 30 to a maximum of 210. A lower score indicates higher ethical sensitivity, while a larger score reflects lower sensitivity. In this study, the reliability coefficient of the scale was calculated as 0.92.

Data Collection

Questionnaires were created using Google Forms to collect data from students. An explanatory description of the study was shared on an online communication platform used by students for education and training-related discussions. The link to the online questionnaire was also provided. Completing the entire set of questionnaires took approximately 20 minutes. Data collection occurred in March 2022, after obtaining approval from the Ethics Committee and institutional permissions. A total of 353 students who met the inclusion criteria (enrolled at the relevant university, having internet access, and volunteering to participate in the study) provided valid responses.

Data Analysis

Data were analyzed using the IBM SPSS Statistics 23 software package (Armonk, NY: IBM Corp.). Normality of the data distribution was assessed using kurtosis and skewness values. Continuous variables were presented as mean±standard deviation, and categorical variables were expressed as numbers and percentages. In examining the relationships between numerical data, Pearson correlation analyses were conducted, and factors influencing empathy ability were analyzed using multiple linear regression. Results were evaluated within a 95% confidence interval, with statistical significance set at $p < 0.05$.

Ethical Considerations

Ethical approval for this study was obtained from the Non-interventional Clinical Research Ethics Committee of Pamukkale University (Approval Number: E-60116787-020-161649, Date: 25.01.2022). Permission to use the Turkish versions of the scales was obtained from the authors who conducted their validity and reliability studies. Prior to completing the surveys, students were fully informed about the study. In the online survey, they were explicitly asked, "Do you agree to participate in the research voluntarily?", and all participants provided affirmative responses. Thus, informed consent was obtained from all volunteers. The study was conducted in accordance with the principles outlined in the Declaration of Helsinki.

Results

The majority of the participants were female (83.9%, $n=296$), while 16.1% ($n=57$) were male. The distribution of students across grades was as follows: 100 second-grade students (28.2%), 137 third-grade students (38.8%), and 116 fourth-grade students (33%). The age range of the participants was 19 to 36 years, with an average age of 28.83 ± 1.39 .

It was concluded that male students had a lower mean ESS total score than female students ($p=0.006$, $t=2.847$). Additionally, the mean ESS total score was higher among nursing students compared to those who had not received training or courses on empathy and ethics. A statistically significant difference was found between these groups ($p=0.001$, $t=3.427$; $p < 0.001$, $t=4.111$) [Table 1].

Table 1. Variables related to nursing students and differences between groups

	ESS Mean±SD ^a (Median,IQR) ^b	p value	test
Gender			
Female ($n=296$)	163.69±25.21	0.006	2.847 ^a
Male ($n=57$)	153.43±24.83		
Did you receive training/courses on empathy?			
Yes ($n=158$)	167.10±23.41	0.001	3.427 ^a
No ($n=195$)	157.92±26.25		
Did you receive training/courses on ethics?			
Yes ($n=166$)	167.78±24.08	<0.001	4.111 ^a
No ($n=187$)	156.93±25.51		
Did you experienced ethical dilemmas in your social life?			
Yes ($n=43$)	162.51 (166.0, 42.0)	0.990	6657.5 ^b
No ($n=310$)	161.97 (163.00,38.0)		
Did you experience ethical dilemmas in your clinical practice?			
Yes ($n=27$)	162.92 (163.00, 45.00)	0.985	4391.5 ^b
No ($n=326$)	161.96 (163.50,38.00)		

ESS: Empathy skill scale, ^aindependent t-test, ^bMann-Whitney U test.

Table 2. Correlation of the empathy skill scale with age, academic success, and sub-dimensions of the moral sensitivity questionnaire

	X±SD (Min-Max)	ESS	
		r	p
Age, years	21.83±1.39 (19-36)	-0.058	0.137
Academic success*	3.13±0.26 (2.09-3.81)	0.303	<0.001
ESS	162.03±25.40 (92-211)	-	-
MSQ	97.63±30.21 (30-210)	-0.14	0.393
Sub-dimensions of MSQ			
Autonomy	22.14±8.46 (7-49)	0.012	0.413
Benevolence	13.11±4.49 (4-28)	-0.021	0.344
Holistic approach	14.16±7.28 (5-35)	-0.309	0.021
Conflict	11.54±3.37 (3-21)	-0.029	0.291
Execution	14.23±4.65 (4-28)	0.085	0.056
Interpersonal orientation	10.60±6.55 (4-28)	-0.260	0.001

*Academic success scale score in the university; Min: 1.75, Max: 4.00 (a positive correlation indicates a higher academic success score). ESS: Empathy skill scale, MSQ: Moral sensitivity questionnaire, r: Pearson correlation coefficient.

The mean total score on the Empathy Skill Scale was 162.03±25.40, while the mean total score on the Moral Sensitivity Questionnaire [MSQ] was 97.63±30.21. A weak, statistically significant negative correlation was found between the ESS total score and academic achievement, the holistic approach sub-dimension of the MSQ, and the interpersonal orientation sub-dimension [Table 2].

Multiple linear regression analysis revealed that the sub-dimensions of the Moral Sensitivity Scale had a low but significant effect on empathy ability [R=0.317, R²=0.187, p=0.008]. This indicates that the sub-dimensions of moral sensitivity explain 18% of the variance in empathy skills. The study found that only the execution sub-dimension of the Moral Sensitivity Questionnaire serves as a predictor of empathy ability [Table 3].

Table 3. Predictors of empathy skill scale scores: Multiple linear regression analysis

	Unstandardized coefficients		Standardized coefficients		
	B	SE	β	t	p
Constant	-	5.777	-	27.609	0.000
Autonomy	-0.228	0.322	-0.076	-0.708	0.479
Benevolence	0.487	0.416	0.086	1.169	0.243
Holistic approach	-0.088	0.432	-0.025	-0.205	0.838
Conflict	-0.685	0.438	-0.091	-1.566	0.118
Execution	-1.277	0.402	0.234	3.179	0.002
Interpersonal orientation	-0.736	0.462	-0.190	-1.593	0.112

Model summary: R=0.317; R² [% explained variance] = 0.187 (18.7%); Adjusted R²=0.244; F=2.932; p=0.008.

Discussion

This study explored the empathy skills of students who are future health professionals, examined their relationship with moral sensitivity, and analyzed the influencing factors. One of the primary goals of the nursing profession is to deliver the highest quality care to patients. High levels of empathy among health professionals are an essential requirement for providing better quality patient care.¹⁹

When the results are examined, it is evident that gender differences among students influence their empathy skills. Studies on the subject indicate that female nursing students tend to have higher empathy skills compared to their male counterparts.^{8,20,21} In most cultures, gender norms and traditional caregiving roles, often assigned to women from an early age, are frequently cited as factors contributing to the relationship between empathy and gender. In a study by Yang et al.,²² it was found that structured empathy training for nursing students enhanced their empathy skills. Similarly, nursing students who took communication courses during their undergraduate education or participated in simulation training in digital environments also showed improvements in empathy skills.^{20,23,24} This study likewise found that students who received training in empathy and ethics demonstrated better empathy skills. These findings suggest that a supportive learning environment, appropriate educational materials, diverse teaching methods, and fostering sensitivity toward empathy throughout the educational process play a crucial role in developing students' empathy skills. It was observed that ethical dilemmas encountered by students were not related to their empathy skills. However, previous research has shown that oncology patients and end-of-life care, which are often associated with ethical dilemmas in patient-nurse communication, are linked to higher empathy skills.^{25,26} The ethical dilemmas observed in this study may be related to the significance of the dilemmas experienced, which might explain why they do not appear to impact the students' empathy skills.

In the current literature, some studies have found that the empathy skills of students in different classes or age groups are similar, while others have identified a negative relationship between empathy skills and age.^{8,20,27} In this study, the lack of a relationship between age and empathy skills may be attributed to the students' engagement in clinical internships throughout their education, which helps keep their empathy skills and sensitivities dynamic. Additionally, studies have shown a relationship between empathy levels and academic success. For instance, a study by Iqbal et al.²⁸ with medical students and another by Ertuğ²⁹ with nursing students both found that empathy levels increased with higher academic achievement. The positive correlation identified in this study aligns with the findings in the literature.

In recent years, studies conducted with clinical nurses have reported a positive relationship between moral sensitivity and empathy.^{30,31} Technological advancements in patient care practices are continually evolving and progressing. These developments introduce new ethical dilemmas, particularly in the care of critically ill patients, such as those in intensive care or oncology. Consequently, ethics remains an important and ongoing concern in nursing care as technology advances. In this context, the lack of a relationship between the mean scores of nursing students on the ESS and MSQ emerges as an important finding. The lack of a

relationship between empathy skills and moral sensitivity is likely due to students' limited exposure to ethical dilemmas in patient care during their clinical internships, which may hinder the development of their moral reasoning abilities. Empathy, on the other hand, is constantly developing under the influence of the social environment and may evolve independently of moral sensitivity. As a result, the relationship between empathy and moral sensitivity in students may be insignificant. In contrast, clinical nurses, due to their extended interactions with patients, may develop greater sensitivity, leading to a stronger relationship between empathy and moral sensitivity. When examining the average total scores of the ESS and MSQ, it is evident that students scored at an intermediate level on both scales. Studies in the literature align with this finding.^{32,33} However, another study involving a sample group of nursing students found a decline in empathy levels after the third year.³⁴ To address this issue, theoretical courses on empathy should be maintained alongside clinical internships to ensure the continuous development of students' empathy skills. As sensitivity related to the holistic approach and interpersonal orientation sub-dimensions of the MSQ increases, empathy skills also improve. The holistic approach emphasizes nurse-patient interactions that address psychological well-being in addition to physical care. Students who engage in holistic care are more likely to actively listen to patients and incorporate their experiences into nursing care. Consequently, the application of holistic care by students may play a crucial role in developing their empathy skills. The interpersonal orientation sub-dimension of the MSQ reflects students' decisions regarding actions that impact nurse-patient relationships. During the decision-making process, as students strive to make choices that best serve their patients, their empathy skills are likely to play a role and improve over time.

When examining the predictive factors of empathy ability, only the execution sub-dimension of the MSQ appears to be effective. This sub-dimension focuses on questions related to providing care or treatment while considering the ethical aspects of the situation. Greater sensitivity in this area can lead to enhanced empathy skills. Conversely, the other five sub-dimensions of the MSQ do not seem to influence the development of empathy skills.

Limitations and Strengths

This study aimed to reach the entire population; however, nearly half of the students did not complete the questionnaire. The study was conducted during the academic semester, coinciding with a period of intensive theoretical and practical coursework, which likely restricted students' availability for participation. Nevertheless, as the study was limited to nursing students from a single university, its findings cannot be generalized to the broader nursing student population, representing a key limitation of this research. Since this study was conducted on nursing students from a single university, the results cannot be generalized to all nursing students. This is another limitation of the research.

Conclusion

Empathy skills and moral sensitivity are two indispensable concepts for providing high-quality patient care. This study identified a relationship between empathy skills and moral sensitivity, highlighting the roles of gender, courses related to empathy/ethics, and academic success in the development of emphasis should be placed on fostering the development of empathy in male students, and all students should have opportunities to visit clinics where ethical dilemmas are frequently encountered. Additionally, students' empathy skills should be assessed during their transition to each higher academic level, and changes should be monitored over the years to track their progress.

Ethics Committee Approval: The study was approved by the Non-interventional Clinical Research Ethics Committee of Pamukkale University (Approval Number: E-60116787-020-161649, Date: 25.01.2022).

Informed Consent: Written consent was obtained from the volunteers.

Conflict of Interest: The authors have no conflicts of interest to declare.

Funding: The authors declared that this study received no financial support.

Authorship Contributions: Concept - B.B., B.Ç.; Design - B.B., B.Ç.; Supervision - B.Ç.; Funding - B.B.; Materials - B.B., B.Ç.; Data collection and/or processing - B.B.; Data analysis and/or interpretation - B.B., B.Ç.; Literature search - B.B.; Writing - B.B., B.Ç.; Critical review - B.B., B.Ç.

Peer-review: Externally peer-reviewed.

References

1. Peirce AG, Elie S, George A, Gold M, O'Hara K, Rose-Facey W. Knowledge development, technology and questions of nursing ethics. *Nurs Ethics*. 2020;27(1):77–87. [CrossRef]
2. Kohlberg L. Education, moral development and faith. *J Moral Educ*. 1974;4(1):5–16. [CrossRef]
3. Rest JR. Research on moral development: implications for training counseling psychologists. *Couns Psychol*. 1984;12(3):19–29. [CrossRef]
4. Mert S, Sayilan AA, Karatoprak AP, Baydemir C. The effect of COVID-19 on ethical sensitivity. *Nurs Ethics*. 2021;28(7–8):1124–1136. [CrossRef]
5. Palazoğlu CA, Koç Z. Ethical sensitivity, burnout, and job satisfaction in emergency nurses. *Nurs Ethics*. 2019;26(3):809–822. [CrossRef]
6. Lee HL, Huang SH, Huang CM. Evaluating the effect of three teaching strategies on student nurses' moral sensitivity. *Nurs Ethics*. 2017;24(6):732–743. [CrossRef]
7. Travelbee J. What do we mean by rapport? *Am J Nurs*. 1963;63:70–72. [CrossRef]
8. Berduzco-Torres N, Medina P, San-Martin M, Delgado Bolton RC, Vivanco L. Non-academic factors influencing the development of empathy in undergraduate nursing students: a cross-sectional study. *BMC Nurs*. 2021;20(1):245. [CrossRef]
9. Román-Sánchez D, Paramio-Cuevas JC, Paloma-Castro O, et al. Empathy, burnout, and attitudes towards mental illness among Spanish mental health nurses. *Int J Environ Res Public Health*. 2022;19(2):692. [CrossRef]
10. Yuguero O, Forné C, Esquerda M, Pifarré J, Abadías MJ, Viñas J. Empathy and burnout of emergency professionals of a health region: a cross-sectional study. *Med (Baltim)*. 2017;96(37):e8030. [CrossRef]
11. Maxwell B, Racine E. Should empathic development be a priority in biomedical ethics teaching? A critical perspective. *Camb Q Healthc Ethics*. 2010;19(4):433–445. [CrossRef]
12. Nesime D, Belgin A. Impact of Education on student nurses' advocacy and ethical sensitivity. *Nurs Ethics*. 2022;29(4):899–914. [CrossRef]
13. Yu CC, Tan L, LE MK, et al. The development of empathy in the healthcare setting: a qualitative approach. *BMC Med Educ*. 2022;22(1):245. [CrossRef]
14. Korhonen ES, Nordman T, Eriksson K. Technology and its ethics in nursing and caring journals: an integrative literature review. *Nurs Ethics*. 2015;22(5):561–576. [CrossRef]
15. Seo H, Kim K. Factors influencing public health nurses' ethical sensitivity during the pandemic. *Nurs Ethics*. 2022;29(4):858–871. [CrossRef]
16. Dökmen Ü. Measuring empathy based on a model and improving it by psychodrama. *JFES*. 1988;21(1):155–190.
17. Lützn K, Evertzon M, Nordin C. Moral sensitivity in psychiatric practice. *Nurs Ethics*. 1997;4(6):472–482. [CrossRef]
18. Tosun H. Moral Sensitivity Questionnaire (MSQ): Turkish adaptation of the validity and reliability. *J Contemp Med*. 2018;8(4):316–321.
19. Bilgiç Ş. Does the compassion level of nursing students affect their ethical sensitivity? *Nurse Educ Today*. 2022;109:105228. [CrossRef]
20. Öztürk A, Kaçan H. Compassionate communication levels of nursing students: predictive role of empathic skills and nursing communication course. *Perspect Psychiatr Care*. 2022;58(1):248–255. [CrossRef]
21. Korkmaz Dođdu A, Aktaş K, Dursun Ergezen F, Bozkurt SA, Ergezen Y, Kol E. The empathy level and caring behaviors perceptions of nursing students: a cross-sectional and correlational study. *Perspect Psychiatr Care*. 2022;58(4):2653–2663. [CrossRef]
22. Yang C, Zhu YL, Xia BY, Li YW, Zhang J. The effect of structured empathy education on empathy competency of undergraduate nursing interns: a quasi-experimental study. *Nurse Educ Today*. 2020;85:104296. [CrossRef]
23. Yu J, Parsons GS, Lancaster D, Tonkin ET, Ganesh S. "Walking in Their Shoes": the effects of an immersive digital story intervention on empathy in nursing students. *Nurs Open*. 2021;8(5):2813–2823. [CrossRef]
24. Ma Z, Huang KT, Yao L. Feasibility of a computer role-playing game to promote empathy in nursing students: the role of immersiveness and perspective. *Cyberpsychol Behav Soc Netw*. 2021;24(11):750–755. [CrossRef]
25. Arda Sürücü H, Anuş Topdemir E, Baksi A, Büyükkaya Besen D. Empathic approach to reducing the negative attitudes of nursing undergraduate students towards cancer. *Nurse Educ Today*. 2021;105:105039. [CrossRef]
26. Zhang J, Fu Y, Zhang H, Tang T, Yin M, Shi L. Analysis of factors influencing the attitudes towards the elderly of nursing students based on empathy and end-of-life care: a cross-sectional study. *Nurs Open*. 2022;9(5):2348–2355. [CrossRef]
27. Dağ GS, Çağlayan Payas S, Dürüst Sakallı G, Yıldız K. Evaluating the relationship between empathy, pain knowledge and attitudes among nursing students. *Nurse Educ Today*. 2022;111:105314. [CrossRef]
28. Iqbal MZ, AlBuraikan AR, AlQarni AA, AlQahtani HA, AlOthaim AM, AlMusalleem MM. Measuring empathy in medical students: a cross-sectional study. *J Pak Med Assoc*. 2022;72(6):1101–1105. [CrossRef]
29. Ertuğ N. The investigation of levels of empathy in nurse candidates. *Bezmialem Sci*. 2018;6:37–42. [CrossRef]

30. Rezapour-Mirsaleh Y, Aghabagheri M, Choobforoushzadeh A, Mohammadpanah Ardakan AA. Mindfulness, empathy and moral sensitivity in nurses: a structural equation modeling analysis. *BMC Nurs.* 2022;21(1):132. [\[CrossRef\]](#)
31. Jo H, Kim S. Moral sensitivity, empathy and perceived ethical climate of psychiatric nurses working in the national mental hospitals. *J Korean Acad Psychiatr Ment Health Nurs.* 2017;26(2):204–215. [\[CrossRef\]](#)
32. Jiménez-Herrera MF, Font-Jimenez I, Bazo-Hernández L, Roldán-Merino J, Biurrun-Garrido A, Hurtado-Pardos B. Moral sensitivity of nursing students. Adaptation and validation of the moral sensitivity questionnaire in Spain. *PLoS One.* 2022;17(6):e0270049. [\[CrossRef\]](#)
33. Jeon J, Choi S. Factors influencing patient-centeredness among Korean nursing students: empathy and communication self-efficacy. *Healthcare (Basel).* 2021;9(6):727. [\[CrossRef\]](#)
34. Sobczak K, Zdun-Ryżewska A, Rudnik A. Intensity, dynamics and deficiencies of empathy in medical and non-medical students. *BMC Med Educ.* 2021;21(1):487. [\[CrossRef\]](#)