

## Learning of empathy among first-year medical students

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### ABSTRACT

Empathy is one of the core competencies that doctors must possess. Teaching empathy is carried out since students are in undergraduate medical education. One of the learning activities that can be used to improve empathy skills is reflection. Many studies have reported on the empathic abilities of medical students. In addition, there have also been many scientific articles discussing the factors that affect the ability of empathy. However, how medical students learn empathy is still unclear, especially for first-year students who have just been exposed to medical science after graduating from high school. This study aimed to understand how first-year medical students learn empathy. A qualitative study with a phenomenological approach was carried out. We selected randomly, a total of 30 medical student reflection journals were analyzed using content analysis techniques. There are three themes, namely stimulus, process, and effect. Medical students learn empathy driven by internal and external stimuli so that a thinking process occurs through several learning activities. The existence of this stimulus and process influences both the self and the patient/client. The whole process of empathy learning can show how early-year students learn and the factors that influence student empathy learning. This study supports other research that discusses the learning process and factors that affect medical students' empathy. This result can encourage curriculum planners to design appropriate empathy learning for students.

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## 1. INTRODUCTION

Empathy is often associated with health service quality, especially at the first level of health care. This is because empathy is a core component of the doctor-patient relationship [1], [2]. Empathy is the ability of a doctor to understand the patient's illness and feel the overall background or context underlying the patient's condition [3], [4]. In addition, the ability can increase the interaction between doctor-patient and the patient's trust to the doctor [5], [6]. Therefore, empathy is one of the competencies that a doctor must possess and must be taught to medical students.

Patient-centered health services have resulted in a shift in medical education emphasizing teaching professionalism, including empathy [7]–[9]. Several things are used to develop empathy learning, such as exploring conditions, perceptions/ideas, and patient expectations [10]. These principles are then used as the basis for designing learning activities and examinations/assessments of empathy competencies for medical students.

Research on empathy for medical students has been found in the literature review. However, most of the existing research is in the form of quantitative studies to assess the ability of empathy [2], [7], [11], [12].

The research shows that the empathic ability of medical students during their studies tends to decrease over time [13], [14]. Therefore, it is not suitable with the expectation that medical students have to become empathetic doctors upon graduation. Therefore, future studies will focus on the factors that influence the development of empathy in medical students [15]–[17].

The limitation of previous studies that examine factors that influence empathy is that most of these studies do not explore the perceptions or views of the students themselves. In contrast, students are the object of learning empathy and feel how their abilities develop. Most studies quantitatively examine the relationship and influence of various variables on empathy learning. However, it does not explore student opinions regarding what things affect empathy learning, which may be very useful for understanding and encouraging a doctor's empathy development [13], [14].

Literature review shows that reflection is one of the effective methods to teach empathy [18]. Reflection learning will stimulate students to reveal meaningful events to students, in this case, the doctor-patient interaction, encourage them to involve feelings related to the event, then force students to analyze cause and effect and develop improvement plans. Reflection writing is proven to improve the ability of empathy, professionalism, communication skills, and the ability of students to respect the diversity of patient contexts [18]–[20]. In addition, other studies also show that reflection can describe the learning process experienced by students or how students learn to achieve learning goals [21], [22]. Therefore, this study examined how the first medical students learn about empathy and the things that affect their learning. It is hoped that with the results of this study, medical education institutions can develop an empathy learning curriculum by paying more attention to the factors that influence it.

## 2. RESEARCH METHOD

A qualitative research design was carried out to answer the problem related to how the process of learning empathy for first-year medical students and what factors influence it. This study is focused on exploring and constructing the meaning of what students write about their learning experiences. This research was conducted at the Faculty of Medicine, University Sebelas Maret, Indonesia, in 2020. In the first year, the students took a Medical Professionalism Course. It is contained aspects of professionalism as a medical student. At the end of the lesson, as one of the assessment tasks, students are asked to write reflections on their learning experiences related to history taking and empathy skills.

With a purposeful sampling technique, the first author chose a reflection document whose handwriting can be read. Then, the first and second authors selected reflection documents that contained self-reflection regarding empathy and history-taking skills. Papers that do not have self-reflection, such as evaluation of learning programs, lecturers' teaching were excluded. A total of 150 reflection documents was eligible. Of the 150 papers, the authors randomly selected the number of samples that the research team can manage for analysis (manageable sample size) which is 20% ( $n=30$ ). After that, the sample of the reflection document was photocopied anonymously so that the researcher could analyze it.

Data analysis used the thematic analysis technique with an inductive approach. Thematic analysis is a method for identifying, analyzing, and compiling a pattern (theme) in qualitative data. This technique organizes the data and describes the data in detail. The data coding process in the inductive approach is open, where the themes generated are derived from the data itself, not using a coding scheme that has been prepared before the analysis is carried out (pre-existing coding frame). Thematic analysis in this study was carried out manually by two authors. All authors discussed the sub-themes and themes; then compiled a consensus in a scheme that describes the relationship between the themes. The schema of the relationship between these themes describes the process of empathy learning by first-year medical students and the factors that influence it. The mechanism to ensure the trustworthiness of this research was by randomizing the sample, inter-rater agreement, member checking, and audit trail.

## 3. RESULTS AND DISCUSSION

A total of 30 reflection documents was analyzed, and data saturation was achieved. As a result, three themes were obtained, namely stimulus, process, and effect. The results of this analysis describe students' empathy learning experience as presented in Figure 1.

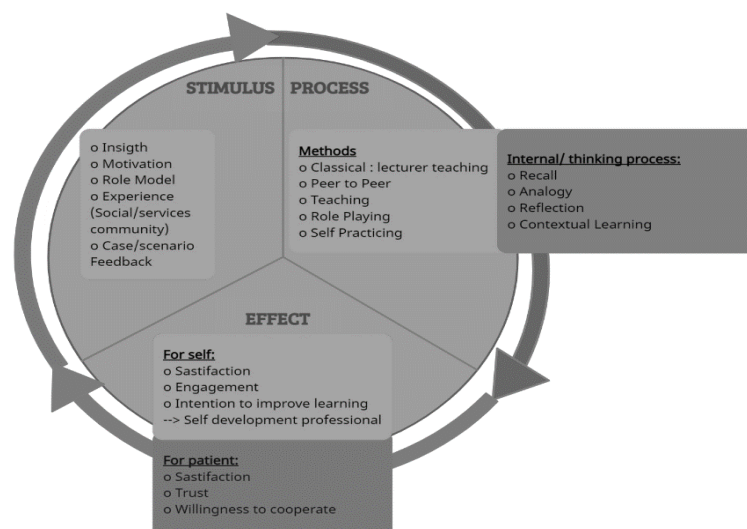


Figure 1. Empathy learning cycle

### 3.1. Stimulus

#### 3.1.1. Insight

Insight in this study is awareness or a good understanding of the importance of empathy to become a doctor. Students who have good awareness or understanding provide the basis for the ongoing empathy process [23]. This awareness or understanding will facilitate students to be able to enter the next phase. There is a good understanding or awareness of something related to the skills or behavior shown.

*"Empathy is essential for a doctor because, without this ability, a doctor can't be called a professional."* (Student-1)

*"Empathy must be cultivated from within a medical student because empathy can lead to an understanding of the patient."* (Student-15)

#### 3.1.2. Motivation

Motivation is very influential in medical education. Motivation will direct how students will learn [23], [24]. Findyartini [25] states that low empathy is associated with a tendency to low motivation and less control. Motivation is also often associated with academic performance, and this is because intrinsic and extrinsic motivation is indirectly related to the level of student engagement [23]. Students who engage in learning strongly and consistently tend to have better learning outcomes, in this case, the ability to empathize.

*"Medical students are expected to have good character, ethics, and manners that illustrate the ability to empathize ... (thus encouraging) me to be optimistic about studying to become a professional doctor"*. (Student-5)

#### 3.1.3. Role model

Respondents feel that having a role model helps them understand and practice their empathy skills for simulated patients. Role models play a significant role for medical students to be able to behave empathically. Like the theory of behaviorism, the learner will observe and imitate the behavior of the role model. This is consistent with [16], [26] which states that the interaction between students and role models can facilitate the growth of empathy. Role models can affect student empathy positively and negatively depending on how the characteristics of the role model are in the student's view [27]. The positive role model is related to doctors who provide the best service to patients [7]. In this study, the lecturer gives an example of the best attitude to simulated patients.

*"Since childhood, I often pay attention to my parents who are general practitioners so that it helps me in understanding how empathetic a doctor is."* (Student-9)

*"What is important (in aiding the learning of empathy) is the instructor who facilitates the learning of clinical skills. They set an example in dealing with patients"*. (Student-2)

### 3.1.4. Social/community service experiences

Some of the student-written reflections state that organizational activities, social relations, and community service activities encourage them to have the ability to empathize. Student experience in social/community services encourages the growth of student empathy. This is consistent with [28], [29] who concluded that volunteerism and social services provide experiences to sensitize students' empathy by increasing awareness of the patient's context.

*"Community service activities give us the experience to interact with the community directly, thus encouraging us to develop empathy skills." (Student-6)*

*"My involvement in student organizations, as well as interactions with many people, have made me understand various human characters like the character of different patients." (Student-16)*

### 3.1.5. Case-based learning

Student reflection states that case-based learning can stimulate student empathy learning. This is consistent with [10], [30] which suggested that case discussions based on individual experiences and case scenarios can facilitate empathetic analysis.

*"I need to practice more of these skills with simulated patients and different cases." (Student-17)*

*"In the case of this simulated patient, we must be able to calm the patient..." (Student-18)*

### 3.1.6. Feedback

In this sub-theme, respondents stated that feedback from instructors, friends, and simulated patients stimulated them to behave in better empathy. Feedback has a vital role in medical education, not only in clinical or workplace-based learning but also in professional development, including empathy [31], [32]. Feedback can be obtained from peers and lecturers, or mentors. By integrating feedback from lecturers and peers and self-assessment, it will allow students to develop their competence. However, negative feedback will harm student development [33]. Therefore, it is essential to integrate constructive and timely feedback into the medical education curriculum.

*"I received feedback and input from the doctor who guided me at that time. Besides that, I also remember what my friend said that I need to increase my confidence when meeting simulated patients". (Student-7)*

*"When I did a role play with my friend who is a simulated patient. I received feedback that I was in too much of a hurry which could result in not being able to understand the patient more deeply". (Student-20)*

## 3.2. Processes

### 3.2.1. Methods

According to respondents, several learning methods can facilitate the development of empathy, namely classical/didactic teaching, peer to peer teaching, role-playing, and self-practicing. This is under [10]. which states that there are various approaches to learning empathy. For example, classical/didactic teaching in which case scenarios are discussed can facilitate empathetic analysis. In addition, role-play can also increase confidence when communicating with patients. Thus, using this variation of learning methods can accommodate the development of knowledge and empathy skills expected to be practiced by medical students when they meet real patients at the clerkship.

*"To practice this empathy skill, we pair up with friends and pretend to be doctors and patients. With this method, we can exchange opinions on how to treat patients, and we can exchange ideas on how a patient would want to be treated." (Student-26)*

*"Learning is carried out with guided sessions with the instructor and students take turns exchanging roles to take anamnesis according to the scenario...showing empathy." (Student-24)*

*"I learned the theory of empathy from an instructor... Empathy is not a skill that is acquired in a short time, but a lifelong practice and always trying to understand the other person's position." (Student-27)*

### 3.2.2. Internal/Thinking process

The internal/thinking process in question is a process that occurs in students when empathy learning takes place. In this study, several functions may be in the form of stages of the empathetic learning process. They are recall, analogy, reflection, and contextual learning.

Recall here is one's attempt to begin to understand the condition of another person/patient. In this case, students will use their understanding of the importance of empathy to stimulate the process of empathy. The analogy of this is to imagine in a situation the person who is the object of empathy. By visualizing the condition, emotions will be stimulated.

*"I am in this learning process; the first thing I do is to find out the meaning, goals, and steps in building communication with patients..."*. (Student-19)

*"The good thing that I have practiced in myself regarding learning empathy is that I can position myself on the side of the patient, such as exploring and understanding the patient's perspective. Besides that, the way I listen actively is also quite good, but I still have to improve the use of expressions non-verbal..."*. (Student-25)

The following process is reflection. Reflection is a process of critical and conscious thinking about a particular event or experience. In medical education, the practice of reflection is essential because it is associated with professional behavior, one of which is empathy. By reflecting, when interacting with patients, students will carefully consider the patient's condition, which is then integrated with their values, when making clinical decisions. This requires good empathy skills so that the decisions made are genuinely beneficial for the patient. With contextual learning, reflection can facilitate students to integrate theory with their personal experiences to create lifelong learning. Moreover, contextual learning provides students with an image of their profession.

### 3.3. Effect

#### 3.3.1. For learner

Empathy learning for students has several effects: self-efficacy, engagement in learning, and intention to self-professional development. Empathy consists of 2 aspects, namely, affective empathy, which contains individual emotional responses, and cognitive empathy, which consists of rational understanding of emotions [34], [35]. Furthermore, empathy is associated with the quality of health care related to the doctor-patient relationship [15]. Therefore, individuals with good empathy skills tend to have higher self-efficacy in their services to patients. Suppose this is associated with one of the 'method' sub-themes, namely the role model. In that case, it will be followed Bandura's Self Efficacy theory that performance experience and vicarious experience can form self-efficacy. Furthermore, self-efficacy is associated with motivation which is also a driving force for students to engage in their learning.

*"After receiving the training (empathy skills) ... I tried to be kinder, to be honest, and to be responsible for the things I did."* (Student-26)

*"I will be a good listener to patients. I will interact with more people. I will be more patient with different types of people..."* (Student-23)

*"(With empathy) I hope to become a doctor who is providing services to his patients is accompanied by an aspect of compassion."* (Student-29)

The cognitive and affective aspects of empathy focus on an individual's understanding of another person by associating them based on the individual's experiences and personal judgments. However, the relationship of one person to another involves empathy and affection, conformity, similarity in thinking, sympathy, and personality, which may not be suitable to be applied in a professional context [36]. Therefore, empathy is closely related to medical professionalism. Thus, a student who is experiencing development in his ability to empathize is also maturing his professionalism.

#### 3.3.2. For client

Respondents feel that the ability to empathize can foster trust and satisfaction from patients. Empathy has been positively associated with optimal doctor-patient communication, more accurate diagnosis determination, and better treatment adherence to an excellent doctor-patient relationship of trust. In addition, empathy is closely related to patient satisfaction in various medical specialties [5], [6], [37]. Since empathy is defined as the patient's ability to understand the patient's perspective, it will make the patient feel more understood, thus, more satisfied with the doctor's services.

*"...forming a doctor-patient bond...so that patients are more comfortable... and a bond of trust between doctor and patient in which ...patients feel comfortable providing more information regarding his/ her problems".* (Student-21)

"...Because it turns out that many patients are cured just because they feel comfortable when they go to the doctor because they can tell their problems and are relieved. This comfortable atmosphere is what a doctor should create for his patients." (Student-25)

#### 4. CONCLUSION

This study described the cycle of empathy learning in first-year medical students comprising stimulus, process, and impact. Knowing this cycle and its derivative factors will help curriculum designers and lecturers develop empathy curricula and facilitate empathy learning. In addition, this study supports other ongoing studies that discuss the importance of educating and developing medical students to improve empathy and doctor-patient communication skills in clinical settings. Further research is needed to describe the cycle of empathy learning for medical students at all levels. In addition, further research is also required on the practical use of empathy regarding the expectations of empathy abilities from students, patients, and supervisors at the clinical stage of students.




#### REFERENCES

- [1] F. Derksen, J. Bensing, and A. Lagro-Janssen, "Effectiveness of empathy in general practice: a systematic review," *British Journal of General Practice*, vol. 63, no. 606, pp. e76–e84, Jan. 2013, doi: 10.3399/bjgp13X660814.
- [2] M. Hojat *et al.*, "Empathy in medical students as related to academic performance, clinical competence and gender," *Medical Education*, vol. 36, no. 6, pp. 522–527, 2002, [Online]. Available: <http://www.blackwellpublishing.com>
- [3] P. Gelhaus, "The desired moral attitude of the physician: (I) empathy," *Medicine, Health Care and Philosophy*, vol. 15, no. 2, pp. 103–113, May 2012, doi: 10.1007/s11019-011-9366-4.
- [4] S. Tavakol, R. Dennick, and M. Tavakol, "Medical students' understanding of empathy: a phenomenological study," *Medical Education*, vol. 46, no. 3, pp. 306–316, Mar. 2012, doi: 10.1111/j.1365-2923.2011.04152.x.
- [5] H. Wang *et al.*, "Association between emergency physician self-reported empathy and patient satisfaction," *PLoS ONE*, vol. 13, no. 9, 2018, doi: 10.1371/journal.pone.0204113.
- [6] S. Walsh, A. O'Neill, A. Hannigan, and D. Harmon, "Patient-rated physician empathy and patient satisfaction during pain clinic consultations," *Irish Journal of Medical Science*, vol. 188, no. 4, pp. 1379–1384, 2019, doi: 10.1007/s11845-019-01999-5.
- [7] C. M. P. O'Tuathaigh, A. N. Idris, E. Duggan, P. Costa, and M. J. Costa, "Medical students' empathy and attitudes towards professionalism: Relationship with personality, speciality preference and medical programme," *PLoS ONE*, vol. 14, no. 5, 2019, doi: 10.1371/journal.pone.0215675.
- [8] U. Dhaliwal, S. Singh, and N. Singh, "Reflective student narratives: honing professionalism and empathy," *Indian Journal of Medical Ethics*, Jul. 2017, doi: 10.20529/IJME.2017.069.
- [9] M. Parle, P. Maguire, and C. Heaven, "The development of a training model to improve health professionals' skills, self-efficacy and outcome expectancies when communicating with cancer patients," *Social Science & Medicine*, vol. 44, no. 2, pp. 231–240, Jan. 1997, doi: 10.1016/S0277-9536(96)00148-7.
- [10] Y. C. Zhou *et al.*, "A systematic scoping review of approaches to teaching and assessing empathy in medicine," *BMC Medical Education*, vol. 21, no. 1, p. 292, Dec. 2021, doi: 10.1186/s12909-021-02697-6.
- [11] R. B. Stansfield, A. Schwartz, C. L. O'Brien, M. Dekhtyar, L. Dunham, and M. Quirk, "Development of a metacognitive effort construct of empathy during clinical training: a longitudinal study of the factor structure of the Jefferson Scale of Empathy," *Advances in Health Sciences Education*, vol. 21, no. 1, pp. 5–17, Mar. 2016, doi: 10.1007/s10459-015-9605-1.
- [12] S. H. Sulzer, N. W. Feinstein, and C. L. Wendland, "Assessing empathy development in medical education: a systematic review," *Medical Education*, vol. 50, no. 3, pp. 300–310, Mar. 2016, doi: 10.1111/medu.12806.
- [13] M. Neumann *et al.*, "Empathy Decline and Its Reasons: A Systematic Review of Studies with Medical Students and Residents," *Academic Medicine*, vol. 86, no. 8, pp. 996–1009, Aug. 2011, doi: 10.1097/ACM.0b013e318221e615.
- [14] M. Hojat, S. C. Shannon, J. DeSantis, M. R. Speicher, L. Bragan, and L. H. Calabrese, "Does Empathy Decline in the Clinical Phase of Medical Education? A Nationwide, Multi-Institutional, Cross-Sectional Study of Students at DO-Granting Medical Schools," *Academic Medicine*, vol. 95, no. 6, pp. 911–918, Jun. 2020, doi: 10.1097/ACM.0000000000003175.
- [15] H.-L. Eikeland, K. Ørnes, A. Finset, and R. Pedersen, "The physician's role and empathy – a qualitative study of third year medical students," *BMC Medical Education*, vol. 14, no. 1, p. 165, Dec. 2014, doi: 10.1186/1472-6920-14-165.
- [16] N. Ahmadian Yazdi, S. Bigdeli, S. K. Soltani Arabshahi, and S. Ghaffarifar, "The influence of role-modeling on clinical empathy of medical interns: A qualitative study," *Journal of Advances in Medical Education & Professionalism*, vol. 7, no. 1, pp. 35–41, 2019, doi: 10.30476/JAMP.2019.41043.
- [17] F. Ahrweiler, M. Neumann, H. Goldblatt, E. G. Hahn, and C. Scheffer, "Determinants of physician empathy during medical education: Hypothetical conclusions from an exploratory qualitative survey of practicing physicians," *BMC Medical Education*, vol. 14, no. 1, 2014, doi: 10.1186/1472-6920-14-122.
- [18] I. Chen and C. Forbes, "Reflective writing and its impact on empathy in medical education: systematic review," *Journal of Educational Evaluation for Health Professions*, vol. 11, p. 20, Aug. 2014, doi: 10.3352/jeehp.2014.11.20.
- [19] C. Wellbery, P. A. Saunders, S. Kureshi, and A. Visconti, "Medical Students' Empathy for Vulnerable Groups," *Academic Medicine*, vol. 92, no. 12, pp. 1709–1714, Dec. 2017, doi: 10.1097/ACM.0000000000001953.
- [20] L. M. Chrisman-Khawam and J. A. Manzi, "Empathy in Medicine Cultivating an Empathetic Professional Identity in Osteopathic Medical Students Through Service Learning: A Qualitative Analysis of Reflective Essays," *Journal of Osteopathic Medicine*, vol. 120, no. 4, pp. 263–272, Apr. 2020, doi: 10.7556/jaoa.2020.043.
- [21] L. Van Beveren, G. Roets, A. Buysse, and K. Rutten, "We all reflect, but why? A systematic review of the purposes of reflection in higher education in social and behavioral sciences," *Educational Research Review*, vol. 24, pp. 1–9, Jun. 2018, doi: 10.1016/j.edurev.2018.01.002.
- [22] K. Mann, J. Gordon, and A. MacLeod, "Reflection and reflective practice in health professions education: a systematic review," *Advances in Health Sciences Education*, vol. 14, no. 4, pp. 595–621, Oct. 2009, doi: 10.1007/s10459-007-9090-2.




- [23] K. M. Stegers-Jager, J. Cohen-Schotanus, and A. P. N. Themmen, "Motivation, learning strategies, participation and medical school performance," *Medical Education*, vol. 46, no. 7, pp. 678–688, Jul. 2012, doi: 10.1111/j.1365-2923.2012.04284.x.
- [24] H. Wu, S. Li, J. Zheng, and J. Guo, "Medical students' motivation and academic performance: the mediating roles of self-efficacy and learning engagement," *Medical Education Online*, vol. 25, no. 1, 2020, doi: 10.1080/10872981.2020.1742964.
- [25] A. Findyartini, E. Felaza, D. Setyorini, and R. Mustika, "Relationship between empathy and motivation in undergraduate medical students," *GMS Journal for Medical Education*, vol. 37, no. 4, pp. 1–16, 2020, doi: 10.3205/zma001336.
- [26] F. Ahrweiler, M. Neumann, H. Goldblatt, E. G. Hahn, and C. Scheffer, "Determinants of physician empathy during medical education: hypothetical conclusions from an exploratory qualitative survey of practicing physicians," *BMC Medical Education*, vol. 14, no. 1, p. 122, Dec. 2014, doi: 10.1186/1472-6920-14-122.
- [27] N. J. Pohontsch, A. Stark, M. Ehrhardt, T. Kötter, and M. Scherer, "Influences on students' empathy in medical education: an exploratory interview study with medical students in their third and last year," *BMC Medical Education*, vol. 18, no. 1, p. 231, Dec. 2018, doi: 10.1186/s12909-018-1335-7.
- [28] D. Sin, T. Chew, T. K. Chia, J. S. Ser, A. Sayampanathan, and G. Koh, "Evaluation of Constructing Care Collaboration - nurturing empathy and peer-to-peer learning in medical students who participate in voluntary structured service learning programmes for migrant workers," *BMC Medical Education*, vol. 19, no. 1, p. 304, Dec. 2019, doi: 10.1186/s12909-019-1740-6.
- [29] K. B. Dussán, A. Leidal, N. Corriveau, D. Montgomery, K. A. Eagle, and B. J. LaHood, "Increasing Medical Trainees' Empathy Through Volunteerism and Mentorship," *Journal of Medical Education and Curricular Development*, vol. 4, Jan. 2017, doi: 10.1177/2382120517737995.
- [30] S. A. Batt-Rawden, M. S. Chisolm, B. Anton, and T. E. Flickinger, "Teaching Empathy to Medical Students," *Academic Medicine*, vol. 88, no. 8, pp. 1171–1177, Aug. 2013, doi: 10.1097/ACM.0b013e318299f3e3.
- [31] A. I. Alhaqwi, "Importance and process of feedback in undergraduate medical education in Saudi Arabia.," *Saudi Journal of Kidney Diseases and Transplantation: An Official Publication of the Saudi Center for Organ Transplantation, Saudi Arabia*, vol. 23, no. 5, pp. 1051–1055, 2012, doi: 10.4103/1319-2442.100949.
- [32] H. G. J. Bok *et al.*, "Clarifying students' feedback-seeking behaviour in clinical clerkships," *Medical Education*, vol. 47, no. 3, pp. 282–291, 2013, doi: 10.1111/medu.12054.
- [33] J. M. M. van de Ridder, W. C. McGaghie, K. M. Stokking, and O. T. J. ten Cate, "Variables that affect the process and outcome of feedback, relevant for medical training: a meta-review," *Medical Education*, vol. 49, no. 7, pp. 658–673, Jul. 2015, doi: 10.1111/medu.12744.
- [34] M. Villadangos, J. Errasti, I. Amigo, D. Jolliffe, and E. García-Cueto, "Características de la empatía en jóvenes medidas con la adaptación española de la escala de empatía básica," *Psicothema*, vol. 28, no. 3, pp. 323–329, 2016, doi: 10.7334/psicothema2016.6.
- [35] R. J. M. Slavny and J. W. Moore, "Individual differences in the intentionality bias and its association with cognitive empathy," *Personality and Individual Differences*, vol. 122, pp. 104–108, Feb. 2018, doi: 10.1016/j.paid.2017.10.010.
- [36] M. Fuller, E. Kamans, M. van Vuuren, M. Wolfensberger, and M. D. T. de Jong, "Conceptualizing Empathy Competence: A Professional Communication Perspective," *Journal of Business and Technical Communication*, vol. 35, no. 3, pp. 333–368, Jul. 2021, doi: 10.1177/10506519211001125.
- [37] K. I. Pollak *et al.*, "Physician Empathy and Listening: Associations with Patient Satisfaction and Autonomy," *The Journal of the American Board of Family Medicine*, vol. 24, no. 6, pp. 665–672, Nov. 2011, doi: 10.3122/jabfm.2011.06.110025.

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