

The Effect of Cultural Competence Training on Empathy of Medical Residents

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Abstract

Background: Cultural competence is a core skill for the healthcare team that reputable medical organizations and associations have always emphasized. Its components are essential in reducing health inequalities, increasing patient satisfaction, and improving health outcomes.

Objectives: Considering that competency improvement will affect other skills and abilities, this study attempted to identify the effect of cultural competence training on the medical residents' empathy.

Methods: This quasi-experimental study was conducted among 44 medical residents randomly divided into two groups (control and experimental). The participants were from various medical disciplines (internal medicine, pediatrics, psychiatry, surgery, pathology, and anesthesia). Cultural Competence was taught to the experimental group in a workshop. Then they were sent short educational messages based on the elements of the cultural competence model of Campinha-Bacote for a month. Data were collected using Jefferson's empathy questionnaire and analyzed using SPSS16.

Results: In this study, forty-four residents were randomly divided into two groups of 22 people. There was no significant difference between the scores of participants in the two groups before the cultural competency course ($P>0.05$). However, there was a substantial difference between the scores of the two groups after the intervention ($P<0.05$). The empathy score was higher in the intervention group.

Conclusion: According to the current study, cultural competence training enhances learners' empathy in clinical settings. It is recommended to be integrated into educational planning and new revisions of curriculums.

Keywords: Cultural Competence, Teaching, Empathy, Residents, Education, Medical

Background

The ultimate goal of educating physicians is to improve people's physical, psychological and social conditions. Therefore, their education should be so that they become competent when they graduate. They should understand social needs, help people solve their personal and social problems, and adapt to changing societal expectations and advances in medical sciences. To fulfill the defined requirements, they should be competent in various fields. Cultural competence is an essential topic in medical education (1) as its elements have a critical role in reducing health inequalities and improving health outcomes (2). Cultural care based on

the patient's values and beliefs increases the patient's compliance with treatment and care orders. The lack of cultural competence in health professions may lead to patients' dissatisfaction (3).

Cultural Competence: There are several definitions for cultural competence. Cultural competence is generally defined as knowledge, attitudes, and behaviors. They are used together and enable personnel to work effectively in different cultural settings (4). The standard of the importance of cultural competence was set by Liaison Committee on Medical Education (LCME) in 2000. This standard is related to the faculty members and medical students. It emphasizes that the

professors and students should demonstrate an understanding of how people of different cultures and belief systems perceive health and illness and perceive various symptoms, diseases, and treatments (5). Therefore, cultural communication and empowerment of students to respect cultural diversity are critical in the medical sciences providing culturally-relevant care (6).

Empathy: Empathy is one of the elements of communication skills that play a critical role in the communication between patients and medical residents. It is the art of understanding peoples' feelings without showing sympathy in speaking or behavior. In addition, cultural competence includes empathy, curiosity, and respect (7). Many literature reviews demonstrated the importance of physician empathy training (8). For example, several studies demonstrated that physicians' empathy leads to many benefits, such as reducing patient anxiety and stress, patient satisfaction, and improving patients' quality of life (9-13). Despite the importance of empathy and high emphasis on its learning, some studies noted a decline in the empathy level among medical students during their clinical studies; its reasons need to be investigated and discussed (14).

Pourahmadi et al. reported that empathy was vital in overcoming COVID-19 challenges and improving relationships between physicians and patients. It led to the increased voluntary engagement of medical students in caring for COVID-19 patients (15). Aziz and Ali's study indicated that empathy remains a relatively fixed trait in residency training programs (16).

However, Kusz et al. identified that empathy scores were higher at the end of the internal medicine residency program. The researchers attributed this to their targeted curricula. They included behavioral science and geriatric medicine curricula (17).

Relationship between Cultural Competency and Empathy: Many studies were conducted on empathy learning and cultural competence training in various clinical settings. The results of some studies demonstrated that empathy is not only dependent on individual characteristics but is also acquired by training (18). Most studies showed cultural competence training significantly impacts the development of individuals' knowledge, attitude, and skills, including communication skills. Several studies demonstrated that cultural competency training could improve patients' care and advance favorable outcomes (19).

Since there is a positive association between cultural competence and empathy (20), it depends on showing empathy, respect, and other key factors to provide adequate services to patients.

Importance of Cultural Competency and Empathy in Iran: Historically, Iran has been the land of various tribes and religions with diversity and subcultures in lifestyle, language, livelihood, traditions, and customs. In a style of classification, eleven ethnic entities were identified in Iran. In addition, Iran is one of the major destinations for immigration and refugee integration in the world, and foreign immigrants (mainly from Afghans and Iraq) are part of the country's population (4). Another critical issue is the existence of different religious minorities in this country. Due to the cultural diversity in the country, many vital organizations face several challenges, including community health organizations that deal with patients from various cultures. Some studies have demonstrated that people's perceptions of health and disease are influenced by cultural factors (6).

Cultural competence training is not included in Iran's medical curriculum. According to the study of Heidari et al., cultural diversity in the community requires the involvement of health organizations to provide appropriate cultural and language services. Understanding patients' and families' beliefs and respecting their religions and needs leads to a deeper human dimension in the relationship between healthcare staff and patients. When health personnel does not aim to recognize the barriers to intercultural communication, the consequence can be inequality in care (21).

Empathy and its importance have also been noted in Iranian studies. For example, Elyasi et al. indicated that the psychiatry residents obtained a higher mean empathy score (113.4 ± 16.24). They observed that empathy levels improved by using different training methods. They suggested assessing empathy during educational courses for medical students. In this case, it can provide valuable guides and data for improving students' mental health and good relationship with patients (22).

Mosalanejad demonstrated a correlation between empathy and some communication skills subdomains and ethical codes. This research highlighted that it is necessary to teach empathy in workshop programs (23). Karimi Aliabadi et al. also observed a positive relationship between empathy and spiritual intelligence during the COVID-19 pandemic ($P < 0.05$). This study found an association between academic degree and empathy score (24).

The study of Shahini et al. demonstrated significant differences between three residential groups (psychiatric, internal medicine, surgery) in the total empathy score ($p = 0.001$). They proposed the integration of empathy training in Iranian curricula (25).

Objectives

According to the concepts mentioned above, it is expected that many abilities, such as communication skills and empathy, can be improved in medical students after cultural competence training. Therefore, the purpose of the current study was to investigate the effect of cultural competence education on residents' empathy.

Methods

The current research was a quasi-experimental study with a control group (pre-test and post-test). The study population was composed of medical residents. After obtaining the ethical code, the residents were invited to participate in the study. The sample size was calculated based on the average formula and a similar study ($\alpha=0.05$), which allocated 15 people to each group.

Totally, 46 residents expressed their willingness to participate in the study. Two residents withdrew before the start of the study. Participants were systematically and randomly divided into two groups (an experimental group and a control group). In this manner, the list of residents of each level was prepared, and people were selected from each level with a simple ratio (K: 2). They were from various medical disciplines (internal medicine, pediatric, psychiatry, surgery, pathology, and anesthesiology).

Study design: Researchers first conducted the two groups' pre-test (empathy questionnaire). Then, an educational workshop was held for the experimental group. The average workshop time was approximately 6 hours. In this workshop, cultural competence was taught based on components that were emphasized in the Campinha-Bacote framework. It includes five components: cultural desire, awareness, knowledge, skill, and encounters (26). In many studies, this model

was used for training and assessment of cultural competence. Cultural competence definitions and components and the necessity of its teaching were explained in the workshop. Then, the clinical experiences of the trainees were discussed. Therefore, they had the opportunity to express their clinical experiences of interactions with patients from different cultures, their communication problems, and solutions.

Then, the residents were divided into two small groups of 11 students and used several clinical cases as teamwork projects. Each small group discussed three cases based on the guidance of Bacote's cultural competence framework. These cases can cause intercultural problems that physicians may face in dealing with patients who have different languages (1 case), religions (1 case), and unique customs and norms (1 case). Instructors were also facilitators for the groups. After presenting the results of the team projects, they were given feedback by the other group and the workshop instructors.

Subsequently, mobile learning was used for the experimental group to continue the teaching process. Therefore, short educational messages were sent to the residents for a month. They were developed based on the components of Bacote's cultural competence framework, a literature review, and consultation with experts in the field.

Fifteen educational short messages on cultural competence were sent to the residents. The main emphasis of these messages was on raising learners' awareness about cultural competence and its components, its effects, and how to promote it to motivate residents to further study and provide guidance for self-centered learning (Table 1).

Table 1. Educational messages about cultural competence

Messages
From today, we will learn and practice the components of cultural competence every two days.
No. 1: Keep in mind that cultural competence combines patient-centered care principles with cultural and social influences; therefore, interaction with clients with different cultural backgrounds is one of its main elements.
No. 2: Keep in mind that cultural competence is aimed at eliminating inequality in providing health care services and having fair access to health services in the community.
No. 3: Keep in mind that one of the most effective ways to improve our cultural awareness is to be aware of resources related to patients' ethnic and religious beliefs. Therefore, we must strengthen our studies in this regard. (So, if you have such patients, try to improve your awareness and studies about your patients' ethnic beliefs, convictions, and ethnic norms.)
No. 4: Keep in mind that cultural factors also influence patterns of health and disease of individuals.
No. 5: Keep in mind that the most crucial factor in cultural competence and patient-centered care is our desire. Cultural desire is the first step in moving towards cultural competence.
No. 6: Keep in mind that cultural skills include the ability to gather cultural information related to the current problem of clients and the proper implementation of health and treatment activities based on the client's culture. (So, if you have such patients, adapt your care concerning the culture of your clients.)
No. 7: Keep in mind that another critical component of effective cultural communication is our communication skills capabilities, so proper communication with patients lead to a decrease in patient dissatisfaction.
No. 8: Keep in mind that speaking in patients' language and, if necessary, using a translator is another step forward in establishing an effective cultural connection. (So if you have such patients, you can use a trusted translator who can speak your patients' language)
No. 9: Keep in mind that empathy with patients and understanding their concerns can lead to effective cultural communication. (So today, we are trying to empathize with our patients)
No. 10: Today, we will try to pay attention to patients' ethnic and religious beliefs during care and apply what we read in message 3.
No. 11: Keep in mind that awareness of the symbols of verbal and nonverbal communication of different cultures plays a vital role in our communication.

No. 12: Keep in mind that wherever we serve as a member of our country's health team, having a good understanding of the norms of that community and ethnic group (such as Mazeni, Baluchi, Kurdish, etc.) can help us communicate more effectively.
No. 13: Today, we will introduce a website about cultural diversity and studies that you can use. Iran Cultural Revolution Council website (https://sccr.ir/products/انتشارات)
No. 14: Understand the consequence of considering your culture a superior culture (cultural self-centeredness) because it distances you from your patients.
No. 15: Keep in mind that each person's cultural competence is the ability to work in the context of cultural beliefs, behaviors, and needs of patients and society. (By improving this competence, we can prepare ourselves to provide patient-centered care and help to strengthen our country's health system).

Cultural competence training was not provided for the second group. After completing the training (a month), a post-test (empathy questionnaire) was conducted to determine the effect of cultural competence training on empathy promotion.

Instruments & Data Analysis: In this study, the Persian version of Jefferson's Empathy Scale was used to measure empathy before and after the implementation of the educational program. This scale was designed by Swansea and consisted of 90 items that are designed based on literature and psychological experiences. In 1995, this tool was reviewed by a group of researchers, and the final scale was designed with 20 items. This is a self-report tool with 5-point Likert scale [strongly agree (5) to disagree strongly (1)]. Higher scores indicate a higher level of empathy. Hashemipour and Karami reported a Cronbach's alpha of over 0.7 for the questionnaire (19). SPSS16 and descriptive statistics (mean and standard deviation) were used to analyze the current study's data.

Results

Forty-four residents were randomly divided into two groups of 22 people. 13 were male (30%), and thirty-one (70%) were female. The average age of the residents in both groups was 31 ± 7.08 . There were 25 (57%) residents in year 3, and 19 (43%) people in year 4. Most of them were internal medicine residents (32%) (Table 2).

Table 2. Demographic characteristics of the participants

Characteristics	Group	
	Experimental	Control
Gender		
Male	6	7
Female	16	15
Residency level		
3 rd year	13	12
4 rd year	9	10
Discipline		
Internal medicine	6	8
Pediatric	3	2
Psychiatry	3	4
Surgery	5	4
Pathology	2	1
Anesthesiology	3	3

The Kolmogorov–Smirnov test indicated that the distribution of the data was normal. Therefore,

independent t-test was used to compare the mean scores of the two groups (experimental group and control group) before and after the training.

As shown in Table 3, there was no significant statistical difference between the empathy scores of residents in the two groups before the cultural competence training ($P > 0.05$). However, there were significant differences between the scores of the residents in the two groups after the intervention ($P < 0.05$) in the experimental group.

Table 3. Difference between the two groups before and after training

	Group	Mean	SD	T-test	P
Pre-test	Experimental group	68.86	6.96	-0.77	0.552
	Control group	70.59	7.88		
Post-test	Experimental group	86.59	5.45	7.25	0.02
	Control group	71.31	8.25		

Findings showed no significant statistical difference between the empathy scores of residents based on sex before and after the intervention ($P > 0.05$) (Table 4).

Table 4. Difference between males and females before and after intervention

	Group	Mean	SD	T-test	P
Pre-test	Male	72.07	7.47	1.37	0.176
	Female	68.74	7.26		
Post-test	Male	81.15	6.68	7.25	0.36
	Female	78.03	11.53		

Paired t-test analysis and pre-test and post-test scores were compared in each group to determine whether there were any changes in residents' empathy scores after the intervention. As seen in the Table 4, the average residents' post-test score significantly increased in the experimental group ($p > 0.05$) (Table 5).

Discussion

The purpose of the current research was to investigate the effect of cultural competence training on the promotion of empathy in a group of medical residents. The findings demonstrated that cultural competence training led to an increase in empathy score.

The existing studies have emphasized the association between empathy and cultural competence. Even in a number of developed models of cultural competence, empathy was seen as an important

element. For example, Marian Stuart model has been developed to create a good cultural environment for patients and clients.

Table 5. Paired t-test to compare the pre-test and post-test difference

	Group	Mean	SD	T-test	P
Experimental group	Pre-test	68.86	6.96	-10.51	0.001
	Post-test	86.59	5.43		
Control group	Pre-test	70.59	7.88	-0.29	0.769
	Post-test	71.31	8.25		

Cultural competence includes a number of principles that are related to communication between patients and service providers. In this model, empathy was identified as an important element (27).

One study concluded that five personality traits (cultural empathy, emotional stability, social initiative, open-mindedness, and flexibility) are related to good performance across cultures (28). This literature review indicated that the result of this study is consistent with other existing studies, such as the study of Baek et al. (29) and Cho et al.

Based on Iranian studies and global experiences, the most meaningful solutions or strategies for developing empathy or its culture among the residents include integrating teaching empathy in the official curriculum, role modeling, and role-playing and simulations. These strategies emphasized different methods and activities for teaching empathy, which can be used for Iranian residents according to the country's context. For example, According to Heyes, empathy can be strengthened by new experiences, redirected by novel experiences, or broken by social changes (30). An effective way or tool for building empathy is role-taking or a tool for empathy-building. It is an experiential therapy that emerged in the 40s and 50s (31).

Han and Pappas studied the need for improving empathy training among surgical residents. This study spotlighted some evidence related to decreased empathy level of residents during the years of clinical training. This decrease was mainly attributed to the nature of their duties and work and the current lack of official training during the residency program. They emphasized that empathy can be taught through role-playing and simulations, didactics, and apprenticeship alongside role models (32). Research of Schiefer et al. study showed statistically significant improvements in the empathy of family medicine residents in a longitudinal family medicine curriculum (33).

A study by Shahini et al. demonstrated significant differences between the total empathy score in three residency disciplines (psychiatric, internal medicine, and surgery). They suggested that more of the

curriculum should be devoted to teaching empathy and communication skills (25). Yazdi et al. suggested that clinical faculty role-modeling should be considered to develop clinical empathy skills (34).

Rawal et al. examined the subject of empathy and its challenges among paediatric residents. This study found that empathy increased in senior residents. Residents stated that empathy could be improved by increasing independence and accountability and exposure to long-term patient care. This study emphasized the formation of a curriculum development committee and the need for more attention to this issue (35).

Research by Aziz and Ali indicated that there were statistically significant gender-based differences in the empathy scores ($p = 0.012$). The results also demonstrated that empathy, as a relatively fixed personal trait, does not alter during the residency programs (16).

Therefore, most studies used education to promote empathy in medical residents as the level of residents' empathy decreases during the clinical years for various reasons. However, some studies demonstrated that empathy did not change and even increased during clinical years. In most of these studies, there was a preplanned training program for teaching empathy.

One limitation of this research was the lack of opportunity for monitoring and practice in clinical fields. These limitations could be considered and used to guide further studies in this field. At the end of the study (after post-test), a gift was presented to the residents for appreciation.

Conclusion

According to this study, more attention should be paid to teaching or training and promotion of empathy and cultural competence simultaneously with clinical training programs so that residents can have the opportunity to practice, receive feedback and rehearse. Further research needs to apply instructional design and practice under the supervision of a teacher in the clinical fields of education.

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References

- Sorensen J, Norredam M, Dogra N, Essink-Bot M-L, Suurmond J, Krasnik A. Enhancing cultural competence in medical education. *Int J Med Educ.* 2017; 8: 28–30. doi: 10.5116/ijme.587a.0333. [PMCID: PMC5275746] [PMID: 28125799]
- Dangmei J, Singh A. Embracing cultural competence to reduce disparities and inequities in the public health care services of India. *Asian Journal of Research in Business Economics and Management.* 2017;7(8):288-97. doi:10.5958/2249-7307.2017.00145.1
- Handtke O, Schilgen B, Mösko M. Culturally competent healthcare—A scoping review of strategies implemented in healthcare organizations and a model of culturally competent healthcare provision. *PLoS One.* 2019 Jul 30;14(7):e0219971. doi: 10.1371/journal.pone.0219971. [PMID: 31361783] [PMCID: PMC6667133]
- Mousavi Bazaz M, Zabihi Zazoly A, Karimi Moonaghi H. Medical faculty members' perspectives on the components of cross-cultural competence in the Islamic Republic of Iran: A qualitative study. *East Mediterr Health J.* 2015 Feb 2;20(12):820-7. doi: 10.26719/2014.20.12.820. [PMID: 25664521]
- Berger JT, Miller DR. Health disparities, systemic racism, and failures of cultural competence. *Am J Bioeth.* 2021 Sep;21(9):4-10. doi: 10.1080/15265161.2021.1915411. [PMID: 33955810]
- Mousavi Bazaz M, Zabihi zazoly A, Karimi Moonaghi H. Cross-Cultural Competence, an Unknown Necessity in Medical Sciences Education a Review Article. *Iran J Med Educ.* 2014; 14 (2): 122-36. [In Persian]
- Kheirabadi G, Golshani L, Masaali N, Kheirabadi D, Hajrahimi M, Hajrahimi M. Residents' Empathy with Patients in Isfahan University of Medical Sciences. *Iran J Med Educ.* 2016; 16 :1-8.
- Riess H. Empathy can be taught and learned with evidence-based education. *Emerg Med J.* 2022 Jun;39(6):418-419. doi: 10.1136/emered-2021-212078. [PMID: 34933918]
- Stavropoulou A, Rovithis M, Sigala E, Pantou S, Koukouli S. Greek nurses' perceptions on empathy and empathic care in the Intensive Care Unit. *Intensive Crit Care Nurs.* 2020 Jun;58:102814. doi: 10.1016/j.iccn.2020.102814. [PMID: 32089417]
- Wang H, Kline JA, Jackson BE, Laureano-Phillips J, Robinson RD, Cowden CD, et al. Association between emergency physician self-reported empathy and patient satisfaction. *PLoS One.* 2018 Sep 13;13(9):e0204113. doi: 10.1371/journal.pone.0204113. [PMID: 30212564] [PMCID: PMC6136813]
- Navarro-Carrillo G, Torres-Marín J, Corbacho-Lobato JM, Carretero-Dios H. The effect of humour on nursing professionals' psychological well-being goes beyond the influence of empathy: a cross-sectional study. *Scand J Caring Sci.* 2020 Jun;34(2):474-483. doi: 10.1111/scs.12751. 2020;34(2):474-83. [PMID: 31487066]
- Lelorain S, Cattain S, Lordick F, Mehner A, Mariette C, Christophe V, et al. In which context is physician empathy associated with cancer patient quality of life? *Patient Educ Couns.* 2018 Jul;101(7):1216-1222. doi: 10.1016/j.pec.2018.01.023. [PMID: 29409676]
- Bigdeli S, Arabshahi SKS, Zazoly AZ, Norouzi A, Yazd NA, Hosseini AF. Empathy, quality of life and occupational burnout among medical students. *Res Dev Med Educ.* 2021;10: 21. doi: 10.34172/rdme.2021.021. [PMID: 30348197] [PMCID: PMC6198363]
- Li D, Xu H, Kang M, Ma S. Empathy in Chinese eight-year medical program students: differences by school year, educational stage, and future career preference. *BMC Med Educ.* 2018 Oct 22;18(1):241. doi: 10.1186/s12909-018-1348-2. [PMID: 30348197] [PMCID: PMC6198363]
- Pourahmadi M, Delavari S, Delavari S. The role of empathy in full-scale Battle of medical and paramedical learners against COVID-19. *Iran J Med Sci.* 2020 Nov; 45(6): 491-2. doi: 10.30476/ijms.2020.87252.1738. [PMCID: PMC7707636] [PMID: 33281267]
- Aziz AB, Ali SK. Relationship between level of empathy during residency training and perception of professionalism climate. *BMC Med Educ.* 2020 Sep 21;20(1):320. doi: 10.1186/s12909-020-02231-0. [PMID: 32957975] [PMCID: PMC7507236]
- Kusz H, Foreback J, Dohrenwend A. Empathy Among Internal Medicine Residents in a Community-Based Training Program: A Pilot Study. *MedEdPublish.* 2017;6(77):77. doi: 10.15694/mep.2017.000077.
- Bętkowska-Korpała B, Pastuszak-Draxler A, Olszewska-Turek K, Sikora-Zych K, Epa R, Starowicz-Filip A. Personality characteristics of empathy profiles—practical implications for education of medicine students. *BMC Med Educ.* 2022 May 16;22(1):376. doi: 10.1186/s12909-022-03432-5. [PMID: 35578223] [PMCID: PMC9112556]
- Vella E, White VM, Livingston P. Does cultural competence training for health professionals impact culturally and linguistically diverse patient outcomes? A systematic review of the literature. *Nurse Educ Today.* 2022 Nov;118:105500. doi: 10.1016/j.nedt.2022.105500. [PMID: 35964378]
- Zarei B, Salmabadi M, Amirabadizadeh A, Vagharseyyedin SA. Empathy and cultural competence in clinical nurses: A structural equation modelling approach. *Nurs Ethics.* 2019 Nov-Dec; 26(7-8):2113-2123. doi: 10.1177/0969733018824794. [PMID: 30803316]
- Heidari M, Anoosheh M, Azad Armaki T, Mohammadi E. Communication strategies for nurses facing culturally diverse patients. *Payesh (Health Monitor).* 2012;11(5):719-24. [In Persian]
- Elyasi F, Islami Parkoohi P, Hosseinnejad S, Azizi M, Kamali M. Relationship Between Secure and Insecure Attachment Style with Physician Empathy Among Medical Students: A Cross-sectional Study in Iran. *Iran J Psychiatry Behav Sci.* 2022;16(2):e118529. doi: 10.5812/ijpbs.118529.
- Mosalanejad L, Abdollahifar S. An investigation of the empathy with patients and association with communicational skills and compliance of professional ethics in medical students of Jahrom University of Medical Sciences: a pilot study from the south of IRAN. *Future of Medical Education Journal.* 2020;10(1): 28-31. doi: 10.22038/FMEJ.2020.41823.1280.
- Aliabadi PK, Zazoly AZ, Sohrab M, Neyestani F, Nazari N, Mousavi SH, et al. The role of spiritual intelligence in predicting the empathy levels of nurses with COVID-19 patients. *Arch Psychiatr Nurs.* 2021 Dec;35(6):658-63. doi: 10.1016/j.apnu.2021.10.007. [PMID: 34861961] [PMCID: PMC8541884]
- Shahini N, Rezayat KA, Behdani F, Shojaei SRH, Rezayat AA, Dadgarmoghaddam M. Empathy score among student residence assistants in Iran. *Electron Physician.* 2016 Dec 25;8(12):3357-3362. doi: 10.19082/3357. [PMID: 28163848] [PMCID: PMC5279966]
- DeVane Wall-Bassett E, Hegde AV, Craft K, Oberlin AL. Using Campinha-Bacote's Framework to Examine Cultural Competence from an Interdisciplinary International Service Learning Program. *Journal of International Students.* 2018;8(1): 274-83. doi: 10.32674/jis.v8i1.165.
- Stein K. Moving cultural competency from abstract to act. *J Am Diet Assoc.* 2010 Feb;110(2):180-7. doi: 10.1016/j.jada.2009.12.007. [PMID: 20399293]

28. De Beuckelaer A, Lievens F, Bücker J. The role of faculty members' cross-cultural competencies in their perceived teaching quality: evidence from culturally-diverse classes in four European countries. *The Journal of Higher Education*. 2012;83(2):217-48. doi:10.1080/00221546.2012.11777240.
29. Baek S-S, Kim H-J, Kim J-S, Lee G-C. Factors influencing on cultural competence of undergraduate nursing students in Korea. *Indian Journal of Science and Technology*. 2016;9(S1): 1-10. doi:10.17485/ijst/2016/v9iS1/109806.
30. Heyes C. Empathy is not in our genes. *Neurosci Biobehav Rev*. 2018 Dec;95:499-507. doi: 10.1016/j.neubiorev.2018.11.001. [PMID: 30399356]
31. Numanee IZ, Zafar N, Karim A, Ismail SAMM. Developing empathy among first-year university undergraduates through English language course: A phenomenological study. *Heliyon*. 2020 Jun 2;6(6):e04021. doi: 10.1016/j.heliyon.2020.e04021. [PMID: 32518850] [PMCID: PMC7270546]
32. Han JL, Pappas TN. A review of empathy, its importance, and its teaching in surgical training. *J Surg Educ*. 2018 Jan-Feb;75(1):88-94. doi: 10.1016/j.jsurg.2017.06.035. [PMID: 28716384]
33. Schiefer R, Levy S, Rdesinski R. A Family Systems Curriculum: Evaluating Skills and Empathy. *Fam Med*. 2021 Jan;53(1):54-57. doi: 10.22454/FamMed.2021.391849. [PMID: 33471923]
34. Yazdi NA, Bigdeli S, Arabshahi SKS, Ghaffarifar S. The influence of role-modeling on clinical empathy of medical interns: A qualitative study. *J Adv Med Educ Prof*. 2019 Jan;7(1):35-41. doi: 10.30476/JAMP.2019.41043. [PMID: 30697547] [PMCID: PMC6341453]
35. Rawal S, Strahlendorf C, Nimmon L. Challenging the myth of the attrition of empathy in paediatrics residents. *Med Educ*. 2020 Jan;54(1):82-87. doi: 10.1111/medu.13877. [PMID: 31475381]