

The effect of empathy skills training on the Empathetic behaviours of Midwifery students

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ABSTRACT

Background & aim: Empathy is an important component of establishing effective communication and achieving optimal clinical results. Establishing empathic communication with pregnant women improves satisfaction, mutual trust, participation in treatment, control over delivery process, and maternal health. Therefore, this study aimed to investigate the effect of empathy training on empathic skills of midwifery students of Mashhad University of Medical Sciences, Mashhad, Iran.

Methods: This quasi-experimental study was conducted on 73 midwifery students and 438 pregnant women in 2015. The students in the intervention group participated in the empathy training program including training on self-awareness and empathy skills, which was held in two 4-hour sessions for two consecutive days. Then each student was assessed by six pregnant women in terms of empathy behaviors. Data was collected using Jefferson Scale of Patient's Perceptions of Physician Empathy. Data analysis was performed applying Chi-square, Mann-Whitney U, Wilcoxon, and paired and independent t-tests in SPSS software, version 16.

Results: The pre-intervention empathy scores were 88.8±8.9 and 90.0±10.3 in the intervention and control groups. Therefore, there was no significant difference between the groups (P=0.591). The post-intervention empathy scores were 99.4±4.3 and 95.8±7.3 in the intervention and control groups, respectively. Despite the higher score of empathy in the intervention group, no significant difference was observed between the groups (P=0.063). However, the intragroup comparison demonstrated a significant increase in the post-intervention empathy score of the intervention group (99.4±4.3) in comparison to the pre-intervention score (88.8±8.9) (P<0.001).

Conclusion: Empathy training could increase the empathy score in midwifery students just in the intervention group. It is recommended to replicate the study in a larger sample.

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Introduction

Communication skills are described as the most important characteristic for healthcare providers (1). Establishing communication with patients aims to

ensure that the needs of the patients are identified and necessary care is provided. It is essential for healthcare providers to understand the patient's feelings, opinions,

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and conditions to identify their needs. To reach this goal, empathic skills are necessary (2).

Empathy is a powerful communication ability, which is defined as the ability to put oneself in someone else's shoes to understand their feelings, experiences, concerns, and views along with the ability to express them (3, 4). Clinicians and healthcare providers describe empathy as "standing in the patients' shoes" (5). Empathy is recognized as a key component of effective communication, understanding, and achieving patient satisfaction (6).

The empathic relationship between medical team and patient enhances patient adherence to treatment plan, patient's motivation for participating in treatment, and patient's satisfaction. In addition, it prevents medical errors and lawsuits and ultimately improves the quality of care and clinical outcomes (7-10). According to the literature, empathetic healthcare providers obtain more competence in history taking and physical examinations because patients easily give suitable information (11).

History taking is one of the most important clinical skills that medical students learn during their course (12). Empathic interaction builds a trust-based relationship, in which patient tells the history of disease and does not conceal anything. Therefore, the therapist takes a precise history of the disease resulting in accurate diagnosis, the prevention of medical errors and lawsuits, and improvement of clinical outcomes (7).

Considering the evidence, patients of higher empathy clinicians disclosed a proper and fast progression in their recovery (13). An empathic approach can shorten the course of treatment and reduce the financial requirements and resources (8). The clear expression of empathy and other altruistic behaviors demonstrates that the empathic relationships are beneficial to therapists in addition to patients.

The empathic relationship and relationship satisfaction prevent occupational stress and exhaustion and improve the quality of life of healthcare providers (14, 5). Given the evidence, there is a direct relationship

between empathy and the quality of health care. Reynold and Scott in 2000 revealed a direct relationship between empathy and patients' responses to treatment including the level of heart and respiratory rates, pain relief, and stress (15).

Lamonica in 1987 found that there were less anxiety, depression, and violence in cancer patients who were under the care of nurses with high levels of empathy (16). According to several researchers, sympathetic physician-patient relationships had a powerful effect on the outcome of treatment, which is similar to that of the placebo. However, some others believe that an empathic relationship is more important than treatment (17, 18).

Midwifery as the first ring of women's healthcare aims to provide high quality maternal and newborn care (19). Midwifery graduates who are responsible for providing health services should have basic clinical skills (20). Nicholls et al. in 2006 showed that it is essential for a good midwife to have communication skills, empathy, and kindness in addition to providing high-quality and effective care and being expert (21).

The diagnostic judgment of midwives improves when they are aware of patients' emotional state as well as their physical condition (22). Effective and empathic communication between midwives and mothers' increases satisfaction and control over delivery, reduces blood pressure, anxiety, pain, and fear of childbirth, creates the feeling of safety, encouragement, and assurance, creates mutual trust, facilitates participation and informed choice, and most importantly, improves the mothers' health status (23, 24).

Although evidence demonstrated the high value of empathy, many healthcare providers have limited ability to communicate with patients in an empathic manner (2, 9, 25). According to the literature, the majority of healthcare professionals lose 70% of their opportunities to express empathy with their patients (9). Moreover, the Health Consumers' Council (Western Australia) stated that the most common complaint among pregnant women is the lack of caregiver compassion and empathy. Fur-

thermore, women were more affected by healthcare providers who show empathic behavior (24).

The lack of empathy among healthcare professionals is due to various reasons including the high number of clients, the lack of time, focus on treatment, the culture of academic medicine, and inadequate empathy training (4, 7).

The College of American Medical Education Association believes that empathy is a necessity of learning goals, and medical universities must train the health students in a way that increase their empathy (10). Empathy is a skill and ability; therefore, it needs to be trained, practiced, and experienced. Cunico said that empathy is a skill which should be ideally taught to health professionals (26). Paying attention to empathy trainings can be the source of positive development in the field of physician-patient relationship (19).

Regarding the evidence, targeted interventions could have a significant and lasting impact on the ability of health professionals to establish empathic communication with their patients (10). Unfortunately, in Iran, limited studies have been conducted on empathy training and its effect on empathic skills. Accordingly, this study sought to determine the influence of empathy training on empathic skills of midwifery students.

Materials and Methods

This quasi-experimental with pre-posttest design was conducted on 73 students and 219 pregnant women in two groups of intervention and control, 2012, Mashhad University of Medical Sciences, Mashhad, Iran. The study population was consisted of all midwifery students in the 5th and 7th semesters of bachelor of midwifery program, who were involved in maternity ward team during the study course. The subjects were selected through convenience sampling method.

The inclusion criterion for the students was the willingness to participate in the study, and the exclusion criterion was the history of participation in communication and empathy training courses. The inclusion criteria for the pregnant women entailed having the ability to read, write, and speak Persian without any history of hearing and visual impairments,

mental disease, and psychological problems; the exclusion criteria included entry into the active phase of labor, and medical and obstetrical complications such as hemorrhage, preterm labor, and life-threatening problems for fetus and mother, as well as willing to withdraw the study.

Data was collected using Jefferson Scale of Patient's Perceptions of Physician Empathy (JSPPPE), which is twofold. The first part included the patient's demographic characteristics and the student's code, and the second part included 21 items assessing the patients' opinions about the students' empathy skills that were score according to 5-point Likert scale from 1 to 5 (completely agree, agree, no idea, disagrees, and completely disagree). Therefore, the total score was ranged from 21 to 105.

The Persian version of this questionnaire was confirmed in the study carried out by Manaqib et al. in 2013. It was translated from English to Persian and vice versa by two professors. In order to test the content validity of this scale, it was shown to five professors, and its reliability was determined by Cronbach's alpha coefficient of 0.79. In this study, the reliability of the questionnaire was determined as $\alpha=0.92$.

The modified version of this questionnaire, which was designed to measure the empathic skills of midwifery students, was identical with the original version in terms of content. Limited changes were applied in the wording to maintain the form and content validity in the target population. For instance, one of the items in this questionnaire was "She is interested in my problems and does not interrupt me while I am speaking".

After obtain the ethical approval from the Ethics Committee of Mashhad University of Medical Sciences, an introduction letter from the Faculty of Nursing and Midwifery of the university, and coordinating with the relevant hospital and trainee instructors, the researcher performed the sampling. Thereafter, in order to get acquainted with the students, the researcher presented at the place of the study. An informed written consent was obtained from all the participants and they were asked to honestly and completely fill the demographic form.

The questionnaires were not nameless and

the subjects were assured that their information were confidential. Initially, the students were randomly assigned into two groups of control and intervention (35 and 38 individuals in the control and intervention groups, respectively). Based on their internship program, they presented in the maternity ward in the groups of four and five people.

A complete history was taken from the pregnant women referred to the maternity hospital and they received the initial care. The researcher explained the goals of the study to the subjects and how to complete the questionnaires and responded to their questions. Each student was responsible for three pregnant women. At the end of the first week, the students in the intervention group participated in the empathy training program, which was held in two sessions for two consecutive days for 8 hours (each session was 4 hours).

The educational model used in the training program was according to the approved educational package approved by the Ministry of Health in the field of life skills (student's life skills training) included self-awareness and empathy skills which were matched based on the training received by the researcher in this regard and considering the situation and needs of the students' internship. The subjects included the definition of life skills, self-awareness skills, self-awareness components, features of self aware people, the areas of correct self-assessment, the benefits of self-awareness, definition of empathy skills, difference of empathy and sympathy, the steps of empathy, empathy stages, barriers to empathy, empathy techniques, the effects of empathy in treatment and the reasons for the lack of empathy that were held through a short lecture with questions and answers, discussion and teamwork, and implementation of role playing of preset scenarios for.

The researcher's eligibility for holding the program was confirmed by the relevant faculty members with participating in the program. In the current study, the educational model was used according to the educational package approved by the Ministry of Health in the field of life skills including self-awareness and empathy skills. These skills were matched based on the training received by the researcher in this regard and considering the situation and needs of the

students' internship. One-week post-intervention, the students in both groups were again presented in the groups of 4 to 5 in the maternity ward, got a full history from the pregnant women who referred to this ward, and performed the initial care. Each student completed the JSPPE for three pregnant women.

Data analysis was performed using descriptive statistics (e.g., mean and standard deviation), Chi-squared, Mann-Whitney U, and Wilcoxon tests, as well as paired and independent samples t-tests in SPSS software, version 16. In all the measurements, P-value less than 0.05 was considered statistically significant.

Results

This study was conducted on 73 midwifery students in two groups of control (n=35) and intervention (n=38).

Most of the subjects (93.2%, n=68) aged between 20 and 25 years old. About 56.2% (n=41) and 43.8% (n=32) of the participants were studying in the 5th and 7th semesters of Bachelor of midwifery, respectively.

In addition, the groups were matched in terms of age, educational level, marital status, interest in midwifery, and the mean scores of the communication course, previous semester, and total score ($P>0.05$; Table 2).

At the pre-intervention phase, the mean scores of empathic skills in the intervention and control groups were 88.8 ± 9.0 and 90 ± 10.3 , respectively. According to the results of independent t-test, there was no significant difference between the groups in terms of pre-intervention empathic skills. The post-intervention mean scores of empathic skills were 99.4 ± 4.3 and 95.4 ± 7.3 in the intervention and control groups, respectively. Additionally, Mann-Whitney U test showed that despite the increase in the mean scores of the intervention group, no significant difference was observed between two groups (Table 1).

The pre- and post-intervention total scores of empathic skills of the intervention and control groups were 10.6 ± 8.7 and 5.8 ± 10.5 , respectively. The results of independent samples t-test demonstrated a significant difference between the groups (Table 1).

Table 1. The mean and standard deviation of the pre- and post-intervention scores of the midwifery students' empathic skills

Test result	Control group	Intervention group	Variable
P=0.591*	90±10.3	88.8±8.9	Pre-intervention score
P=0.063**	95.8±7.3	99.4±4.3	Post-intervention score
P=0.037*	5.8±10.5	10.6±8.7	Comparison between the pre- and post-intervention scores
	****	***	Intragroup comparison
	P=0.002	P<0.001	

* Independent samples t-test, ** Mann-Whitney U test, *** Wilcoxon test, **** Paired t-test

Table 2. The distribution of demographic characteristics of the subjects in two groups

Variable	Group			Type and the result of test
	Intervention group	Control group		
Age	20-25	(52.9)36	(47.1)32	**P=0.666
	26-30	(40.0)2	(60.0)3	
Educational level	5	(57.9)22	(54.3)19	*P=0.756
	7	(42.1)16	(45.7)16	
Marital status	Married	(28.9)11	(31.4)11	*P=0.817
	Single	(71.1)27	(68.6)24	
Interest in midwifery	High	(39.5)15	(31.4)11	**P=0.840
	moderate	(50.0)19	(57.1)20	
	low	(10.5)4	(11.4)4	
Score of communication course		16.1±2.5	16.2±2.2	*** P=0.892
Score of previous semester		16.6±1.0	16.7±1.3	**** P=0.595
Total score		16.1±1.0	16.1±1.1	**** P=0.883

*Chi-squared test, ** Chi-squared exact test, *** Mann-Whitney U test, **** Independent samples t-test

The intragroup comparison was performed by applying Wilcoxon, and the results showed that in the intervention group, the post-intervention mean score of empathic skills was significantly higher than pre-intervention phase. Moreover, the results of paired t-test revealed that in the control group, the mean score of empathic skills was significantly high.

Discussion

This study sought to determine the effect of empathy training on empathic skills of midwifery students of Mashhad University of Medical Sciences, Mashhad, Iran. According to the results, there was no significant difference between the groups in terms of pre-intervention empathy scores. Despite the increase in the post-intervention scores of the intervention group, no significant difference was observed between two groups.

Nevertheless, there was a significant difference between the groups regarding the

pre- and post-intervention scores. Given the results of intergroup comparison, the post-intervention empathy scores were significantly higher than the pre-intervention phase in the intervention group. Therefore, it seems that the implementation of the empathy training program increased the level of empathic skills of midwifery students.

In this regard, Managheb et al. in 2013 conducted a study on 20 family physicians and 100 patients (five patients per physician). Consistent with the results of the present study, the results of the mentioned study indicated that the mean scores of patients' perceptions of their physician's empathy significantly increased in the experimental group by holding a 6-hour empathy training workshop (4).

To the best of our knowledge, limited studies were carried out into the effect of empathy training on the patients' perceptions of their physician's sympathy. As a result, in this study, other tools were utilized to assess the effect of

empathy training on the level of healthcare provider's empathy.

Aktas et al. in 2014 performed a study on 15 working midwives and showed that the mean scores empathic communication skills and empathic tendencies by self-assessment (ETS) obtained from two empathic questionnaires significantly increased after 32 hours of empathy training (27).

Kahriman et al. in 2016 conducted a study on 48 nurses and revealed that the empathic skill score (ESS) significantly increased in the experimental group after five 20-hour empathy training sessions. In addition, the post-intervention score of the intervention group was significantly higher than the control group (2).

Laura Cunico et al. in 2012 carried out a study on 103 nursing students using the Balanced Emotional Empathy Scale and demonstrated that the mean scores of the empathy skills in the intervention group significantly increased after a 21-hour empathy training session (26). Additionally, the results of a study conducted by Ozcan et al. in 2012 on 257 medical and nursing students showed that the scores of self-assessment communication and empathy skills and ETS increased after 10 hours of training the communication and empathy skills during five weeks (28). These results were in line with those obtained in the present study.

Moreover, the results of this study indicated that in the control group, the mean scores of empathy skills significantly increased in the post-training phase compared to the pre-training phase. This improvement might be due to several reasons. Firstly, despite the researcher explained to the students that the patient's assessment did not affect the quality of care, the patients were worried about poor scoring, which might cause the students to give insufficient care. Secondly, the student's empathy skills during interaction with the patient might be affected by the study settings; thirdly, the researcher's presence made the students think that they are being judged.

Globally, the empathy is considered as the basis of human relationships. Empathy is a very important component of the relationship between healthcare providers and patients. Empathy with patient is the ability to

understand the conditions, feelings, and the state of patient to perform effective and high-quality care (29).

According to the literature, there were two types of empathy, namely, basic and learned empathy. Basic empathy is a fixed personality trait, and learned or acquired empathy can be enhanced as a skill by practice and experience (3, 25).

Unfortunately, in the educational setting, more emphasis is placed on the theoretical and practical aspects of the lessons in comparison to the communication skills. Accordingly, the patient-centered care will gradually disappear and empathy will be diminished (30).

According to the curriculum of medical sciences in Iran, training empathy to medical students has been taken for granted, and it is only addressed in the form of medical ethics or few hours of communication skills training (basic and advanced skills) (4). Considering the importance and the effects of empathy on health communication, the assignment of empathy training courses is a useful step towards improving the clinician-patient relationship (18). Therefore, the curriculum of medical sciences should contain the practical training of ethical methods, empathy, and student-patient relationships (30).

Because of the limited time of students in their semester, their busy schedule, and the lack of time to track the impact of training for a longer period of time, this follow-up was conducted one-week post-intervention. In addition, the maternal experience of delivery, whether primiparous or multiparous status may affect her understanding of empathy, which was not considered in the current study.

Sometimes the patients think that in the case of refusal to fill out the questionnaires, they will not receive appropriate services. We eliminated this concern with sufficient explanation and assurance that all the information contained in the questionnaires will remain confidential and that their participation in this study is voluntary.

Additionally, the maternity care environment could disturb the student-patient empathic relationship. The presence of the researcher during student-patient interaction could affect the students' performance. Regarding the fact that these conditions were identical in both

groups, it could be considered as controlled.

Conclusion

The two intervention and control groups were homogeneous in all aspects except for implementing the empathy training program to the intervention group. Therefore, the observed difference in the empathic skills of the students could be attributed to the effect of intervention. Regarding the results, the research hypothesis (training of empathy skills improves the empathic skills of midwifery students) has been confirmed.

The results of this study indicated that empathy skills, like other communication skills, can be trained and learned, and training this skill during an educational workshop can enhance the empathic skills of students.

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Conflicts of interest

The authors declare no conflicts of interest.

References

1. Taghizade ZI, Rezaiepour A, Mehran AB, Alimoradi Z. Communication skills application and its' relation to clients' satisfaction. *Journal of Hayat*. 2006; 12(4):47-55 (Persian).
2. Kahrman I, Nural N, Arslan U, Topbas M, Can G, Kasim S. The effect of empathy training on the empathic skills of nurses. *Iranian Red Crescent Medical Journal*. 2016; 18(6):1-10
3. Zeighami R, Rafiei F. Concept analysis of empathy in nursing. *Journal of Qualitative Research in Health Sciences*. 2012; 1(1):27-33 (Persian).
4. Managheb E, Bagheri S. The impact of empathy training workshops on empathic practice of family physicians of Jahrom University of medical sciences. *Iranian Journal of Medical Education*. 2013; 13(2):114-122 (Persian).
5. Unit RH. Empathy in health care providers-validation study of the Polish version of the Jefferson Scale of Empathy. *Advances in Medical Sciences*. 2006; 51:219-225.
6. Williams B, Brown T, McKenna L, Boyle MJ, Palermo C, Nestel D, et al. Empathy levels among health professional students: a cross-sectional study at two universities in Australia. *Advances in Medical Education and Practice*. 2014; 5:107-113.
7. Hojat M, Louis DZ, Maio V, Gonnella JS. Empathy and health care quality. *American Journal of Medical Quality*. 2013; 28(1):6-7
8. Del Canale S, Louis DZ, Maio V, Wang X, Rossi G, Hojat M, et al. The relationship between physician empathy and disease complications: an empirical study of primary care physicians and their diabetic patients in Parma, Italy. *Academic Medicine*. 2012; 87(9):1243-1249.
9. Bonvicini KA, Perlin MJ, Bylund CL, Carroll G, Rouse RA, Goldstein MG. Impact of communication training on physician expression of empathy in patient encounters. *Patient Education and Counseling*. 2009; 75(1):3-10.
10. Stepien KA, Baernstein A. Educating for empathy. *Journal of General Internal Medicine*. 2006; 21(5):524-530.
11. Ogle J, Bushnell JA, Caputi P. Empathy is related to clinical competence in medical care. *Medical Education*. 2013; 47(8):824-831.
12. Esmaeili MR, Abazari H, Mohammadi KH. Comparison of medical students and pediatric residents' practice in medical records at Amirkola children hospital. *Journal of Babol University of Medical Sciences*. 2010; 12(1):106-111 (Persian).
13. Aghabarary M, Mohammadi I, Varvani FA. Barriers to application of communicative skills by nurses in nurse-patient interaction: nurses and patients' perspective. *Iran Journal of Nursing (IJN)*. 2009; 22(61):19-31 (Persian).
14. Lim BT, Moriarty H, Huthwaite M. "Being-in-role": a teaching innovation to enhance empathic communication skills in medical students. *Medical Teacher*. 2011; 33(12): e663-e669.
15. Reynolds WJ, Scott B. Do nurses and other professional helpers normally display much empathy? *Journal of Advanced Nursing*. 2000; 31(1):226-234.
16. Brunero S, Lamont S, Coates M. A review of empathy education in nursing. *Nursing Inquiry*. 2010; 17(1):65-74.
17. Mercer SW, Reynolds WJ. Empathy and quality of care. *British Journal of General Practice*. 2002; 52(Suppl): S9-S12.
18. Khodabakhsh M, Mansuri P. Empathy and review its role in improving patient-doctor relationship. *Iranian Journal of Medical Ethics and History*.

- 2011; 4(3):38-46 (Persian).
19. Bagherian Mahmoodabadi H, Lohrasby F, Setareh M, Lotfi M. Frequency and reasons of midwives malpractices in cases referred to general office of legal medicine of Isfahan, Iran during 2005-2009. *The Iranian Journal of Obstetrics, Gynecology and Infertility*. 2014; 17(99):13-20 (Persian).
 20. Dadgari A, Kasaeian A, Atash SG, Naseri FL, Dadvar L, Kalateh JM. Efficacy of midwifery clinical curriculum in achieving core learning goals: tutors and students' point of view. *Knowledge & Health*. 2009; 4(3):28-33 (Persian).
 21. Nicholls L, Webb C. What makes a good midwife? An integrative review of methodological-diverse research. *Journal of Advanced Nursing*. 2006; 56(4):414-429.
 22. Saeidi S, Reza-Masouleh S, Chehrzad MM, KazemnejadLeily E. Comparing the level of empathy with patients in first and last year nursing students. *Journal of Holistic Nursing and Midwifery*. 2014; 27(1):11-18.
 23. Lundgren I, Berg M. Central concepts in the midwife-woman relationship. *Scandinavian of Journal Caring Sciences*. 2007; 21(2):220-228.
 24. Moloney S, Gair S. Empathy and spiritual care in midwifery practice: contributing to women's enhanced birth experiences. *Women and Birth*. 2015; 28(4):323-328.
 25. Ouzouni C, Nakakis K. An exploratory study of student nurses' empathy. *Health Science Journal*. 2012; 6(3):534-552.
 26. Cunico L, Sartori R, Marognolli O, Meneghini AM. Developing empathy in nursing students: a cohort longitudinal study. *Journal of Clinical Nursing*. 2012; 21(13-14):2016-2025.
 27. Aktas S, Pasinlioglu T, Calik KY. The effect of empathy training given to midwives on mothers' satisfaction with midwives and their birth perception. *International Journal of Nursing and Health Sciences*. 2016; 3(9):110-117.
 28. Ozcan CT, Oflaz F, Bakir B. The effect of a structured empathy courses on the students of a medical and a nursing school. *International Nursing Review*. 2012; 59(4): 532-538.
 29. Ozcan CT, Oflaz F, Sutcu Cicek H. Empathy: the effects of undergraduate nursing education in Turkey. *International Nursing Review*. 2010; 57(4):493-499.
 30. Hashemipour M, Karami MA. Validity and reliability of the Persian version of JSPE-HP Questionnaire (Jefferson Scale of Physician Empathy-Health Professionals Version). *Journal of Kerman University of Medical Sciences*. 2012; 19(2):201-211 (Persian).