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# The impact of a narrative medicine program on obstetrics and gynecology residents' empathy ability

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## Abstract

**Background** Empathy is essential in medical practice, particularly in obstetrics and gynecology. Narrative Medicine, which involves storytelling and reflective writing, has been shown to enhance empathy among healthcare providers. Despite its benefits, there is limited research on the impact of narrative medicine on empathy among obstetrics and gynecology residents.

**Methods** This study is a prospective controlled trial aimed at investigating the impact of a narrative medicine-based curriculum on the empathy levels of obstetrics and gynecology residents. The subjects of this study are obstetrics and gynecology residents undergoing standardized training at Hangzhou First People's Hospital in 2023, which was divided into two groups: one receiving narrative medicine training and the other, traditional training. The Chinese version of the Jefferson Empathy Scale was used to measure empathy levels before and after the intervention. A self-developed questionnaire was distributed to Group A residents at the end of the narrative medicine course to evaluate the curriculum.

**Results** Before the intervention, there was no significant difference in empathy scores between the two groups. However, after the narrative medicine intervention, Group A showed a significant improvement in empathy scores compared to Group B ( $P < 0.0001$ ). Residents in Group A also rated the narrative medicine curriculum highly, with 92% considering it "great" or "excellent"; 87% finding it effective in improving empathy and doctor-patient communication; and 91% feeling that this course promoted their self-reflection in medical practice.

**Conclusions** The integration of narrative medicine into the training of obstetrics and gynecology residents significantly enhanced their empathy levels. Most residents perceive narrative medicine as a valued and effective means of enhancing doctor-patient communication and reflection capability.

**Keywords** Narrative medicine, Residents, Empathy, Medical education

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## Introduction

Empathy, which can be defined as the ability to “listen to the voices of patients, comprehend their perspectives, sympathize with their experiences, and express understanding, respect, and support.” [1], is an important aspect of the physician-patient relationship. Empathy frequently engages in beneficial interactions that lead to improved clinical outcomes and patient satisfaction, which is an essential component of high-quality healthcare [2]. Empathy ability is particularly crucial for obstetricians and gynecologists (OB-GYNs), as OB-GYNs usually face sensitive and private themes such as women’s reproductive health and childbirth. Patients in the intimate and sensitive field of Obstetrics and Gynecology (OB-GYN) often face dual challenges of physical and emotional nature, requiring the empathy capacity of OB-GYNs to better understand their suffering, provide more humanized care, thereby enhancing trust and satisfaction, and improving treatment compliance and efficacy [3]. However, the empathic abilities of healthcare professionals are under constant threat of erosion due to the demanding nature of medical training and the relentless exposure to stressful situations [4]. In China, OB-GYN residents face unique challenges that can impede the development and maintenance of empathy. The high-stress nature of the specialty, characterized by heavy workloads and the need to manage complex patient emotions, can lead to burnout and emotional detachment. Additionally, the emotional toll of delivering sensitive news, such as difficult diagnoses or treatment outcomes, contributes to empathy erosion over time. These factors underscore the importance of empathy in OB-GYN and highlight the need for interventions that can support and enhance residents’ empathic abilities.

Narrative medicine (NM), a field pioneered by Rita Charon, emphasizes the importance of humanistic care in healthcare to foster empathy, promote reflection, and improve patient-physician relationships [5]. It involves the recognition of illness stories, the ability to absorb, interpret, and be moved by them [5]. NM requires physicians to focus on the patients’ real feelings about their illnesses, not just the data or images on medical reports. Through specific training methods such as close reading and reflective writing, narrative medicine enhances the empathic and reflective abilities of healthcare workers [6]. Medical education has increasingly integrated NM into its curriculum to address the decline in student empathy during training. NM is typically integrated into medical education through a combination of reading, reflection, and writing exercises [7]. Students analyze literary works, medical narratives, or visual arts, discussing the human experiences they portray. Reflective writing prompts students to explore their emotional responses to patients, enhancing self-awareness and empathy. NM has

been shown to improve empathy among medical students in several ways [8]. Firstly, it encourages active listening and perspective-taking, skills essential for understanding patients’ experiences. Secondly, by engaging with narratives, students are exposed to the emotional complexities of illness, fostering a more compassionate approach to patient care. Moreover, NM provides a safe space for students to discuss challenging cases, promoting peer support and reducing feelings of isolation. This communal aspect of NM can be particularly beneficial in high-stress specialties, where students may experience emotional distress. An increasing body of research into the effectiveness of integrating NM into clinical education has suggested that NM has indeed enhanced the empathy of medical students. A study conducted in China in 2023 demonstrated that the application of narrative medicine-based education in the training of neurology residents not only enhanced empathy but also improved professional knowledge [9]. Another study in the United States involving 150 internal medicine residents showed that the majority of participants believed the NM curriculum helped to enhance empathy and well-being [10]. The above evidence suggests that NM education plays a positive role in the empathic abilities of residents. However, there is a paucity of studies specifically examining the impact of NM on empathy among OB-GYN residents.

The present study aims to address this research gap by investigating the impact of a NM-based curriculum on the empathy levels of OB-GYN residents. We hypothesize that integrating NM into the clinical training of OB-GYN residents will result in a deeper understanding of their patients’ experiences, leading to enhanced empathy and improved patient care. This study is set against the backdrop of China’s healthcare system, specifically at the Hangzhou First People’s Hospital, providing a unique perspective on how empathy and NM might be perceived and implemented within a non-Western medical context.

## Materials and methods

### Participants

In China, the residency training period is three years. Residents have different specialties for which they spend most of their time rotating within their specializations. The research subjects of this study were 42 residents specializing in obstetrics and gynecology who underwent standardized training at the Hangzhou First People’s Hospital in 2023. We set the NM curricula as an elective course. Residents of all grades voluntarily chose whether or not to take the NM curricula in addition to their traditional training. The study has been approved by the Ethics Committee of Hangzhou First People’s Hospital. Written informed consent was obtained from all participating students. The intervention group was composed of residents who voluntarily opted to participate in the

Narrative Medicine program while the control group was made up of residents who received traditional training. During the process of group allocation, we appropriately controlled for confounding factors to ensure there were no significant differences in age and gender between the two groups. Group A, comprising 22 females and 1 male with an average age of  $24.84 \pm 0.67$  years, received narrative medicine education in addition to their traditional training. Group B, consisting of 18 females and 1 male with an average age of  $24.82 \pm 0.7$  years, received traditional medical education. There was no statistically significant difference in gender and age between the two groups of residents. This experiment was a prospective controlled trial, but not a randomized trial.

### Teaching methods

Group B received traditional teaching methods. Residents rotated through departments such as gynecology, obstetrics, and family planning; participated in the work of inpatient wards, outpatient clinics, and emergency departments; engaged in various teaching curricula like teaching rounds, small group lectures, and case discussions; completed standardized medical record documentation; learned basic specialized skills; and master the professional theoretical knowledge of obstetrics and gynecology. Group B residents mainly cultivate empathy and improve their communication skills through observing their mentors' interactions with patients and through direct contact with patients in clinical practice, gaining real-life experience in doctor-patient communication.

Group A integrated NM-related knowledge into clinical practice additionally, emphasizing the improvement of students' humanistic quality and empathy in the process of engaging in medical activities. The teaching contents of the NM curricula mainly included the following courses: (1) Introduction to the basic concepts and history of NM and its importance in medical education, especially its significance for OB-GYNs. (2) Appreciation of NM-based literature such as novels, poems, and films. (3) Parallel medical record writing training. This is an effective way to practice narrative medicine and improve the narrative ability of medical personnel. Parallel medical records, unlike standardized hospital records, are narratives about doctors and patients written in general rather than technical language and in the first person. The parallel medical record records the patient's life story and the medical staff's attention, listening, and reflection. Parallel medical record is a viable form of reflection suitable for medical practice and medical education in China, and is an important tool for cultivating the narrative ability of medical students. (4) Parallel medical record sharing and discussion (5) Role-playing and simulation scenarios: Design specific doctor-patient communication scenarios and let participants play the roles of doctors,

patients and family members in simulation exercises. This interactive learning helps to improve communication skills and understand the needs and psychological state of patients in different situations. (6) Reporting and sharing learning experiences. The above course consisted of a total of 10 sessions, with each session lasting for 1 hour. The course was completed during regular working hours on weekdays, with Group A residents taking time out from their traditional training to complete the NM course.

### Measures

The Chinese version of the Jefferson Empathy Scale (the Jefferson Scale of Physician Empathy–Student, JSPE-S), which is a tool to quantitatively measure levels of empathy, was used to examine the effect of NM on residents' empathy ability in this study. The Chinese JSPE-S has satisfactory reliability and validity in medical students [11]. Scores are calculated by using a 7-point Likert scale with 10 positive scores and 10 negative scores. Total scores range from 20 to 140, and the higher the score, the greater the level of empathy. These 20 questions ranged across three dimensions. Dimension 1 (Perspective Taking) reflects cognitive empathy. Dimension 2 (Compassionate Care) is the emotional empathy. Dimension 3 (Standing in the Patient's Shoes) makes up a residual dimension [12].

At the end of the session, a questionnaire was applied to investigate the quality assessment and acceptability of the NM curricula for group A residents.

### Data analysis

The empathy score of all residents was measured before and after the course. SPSS 20.0 software was used to conduct the statistical analysis. The descriptive statistics of scores were described by  $X \pm s$ , and independent t-tests were used to explore group differences in responses.  $P < 0.05$  indicates statistical differences between groups. The internal consistency of the custom questionnaire survey scale was analyzed using Cronbach's alpha coefficient calculated through reliability analysis [13]. A Cronbach's alpha coefficient of less than 0.5 indicates poor internal consistency and is unacceptable; 0.5–0.6 is acceptable in preliminary studies; 0.6–0.7 is acceptable in exploratory research; 0.7–0.8 represents good internal consistency; 0.8–0.9 indicates very high internal consistency; and greater than 0.9 suggests that the scale may be too repetitive, and the scale structure should be re-examined.

### Results

#### Comparison of empathy between the two groups of residents

The survey findings present a comparative analysis of the self-reported empathy scores according to JSPE-S

**Table 1** Jefferson Empathy Scale score

Group	Maximum	Minimum	Mean	SD
Pre-curricula group A	126	80	102.8	12.1
Pre-curricula group B	126	87	103.5	10.2
After-curricula group A	139	101	119.4	10.6
After-curricula group B	128	90	104.8	10.2

SD: Standard Deviation

among two cohorts of Obstetrics and Gynecology residents, as detailed in Table 1. Before the NM educational intervention, no significant disparities were observed between group A and group B ( $p>0.05$ ). However, a notable distinction emerged in the post-intervention phase. Residents in group A demonstrated a significant improvement in empathy scores post-course, outperforming group B ( $P<0.0001$ ). In the longitudinal comparison before and after class, the empathy scores of group A residents significantly improved ( $P<0.0001$ ), while there was no significant difference in group B residents. These results are further elucidated in Table 2 and illustrated in Fig. 1.

**Residents’ evaluation of the NM curricula**

A self-developed questionnaire which was designed for this study was distributed to Group A residents at the end of the NM course to evaluate the curricula, please refer to Supplementary file 1 for details about the questionnaire. All Group A residents completed this questionnaire anonymously and 23 questionnaires were returned. The Cronbach’s alpha coefficient for the questionnaire is 0.6442, which indicates a certain level of good internal consistency reliability. In exploratory research, such an alpha value is acceptable. Survey response data is shown in Table 3. A total of 92% of survey respondents ( $N=21/23$ ) rated the session as either “great” or “excellent.” Most residents believed that they had a clear understanding (44%,  $N=10/23$ ) or a deep understanding (26%,  $N=6/23$ ) of NM through the integration of NM education into the standardized obstetrics and gynecology residency training. Regarding the necessity of continuing to provide NM-related courses in the future, only 35% ( $N=8/23$ ) of the residents believed that it was ‘necessary’ or ‘very necessary’; 44% of people ( $N=10/23$ ) held a neutral attitude, neither supporting nor opposing. 57% ( $N=13/23$ ) of the residents thought the NM -related course design is generally reasonable or very reasonable, with rich contents and various teaching methods.

When asked about the efficacy of the session in improving empathy ability, 87% ( $N=20/23$ ) said it was effective or very effective. When asked about the utility of these sessions in enhancing the ability of doctor-patient communication, 87% ( $N=20/23$ ) found it useful. The majority of respondents (91%,  $N=21/23$ ) felt that this course promoted their self-reflection in medical practice. Finally, 48% ( $N=11/23$ ) of the residents expressed a willingness to engage in NM-related sessions in the future voluntarily.

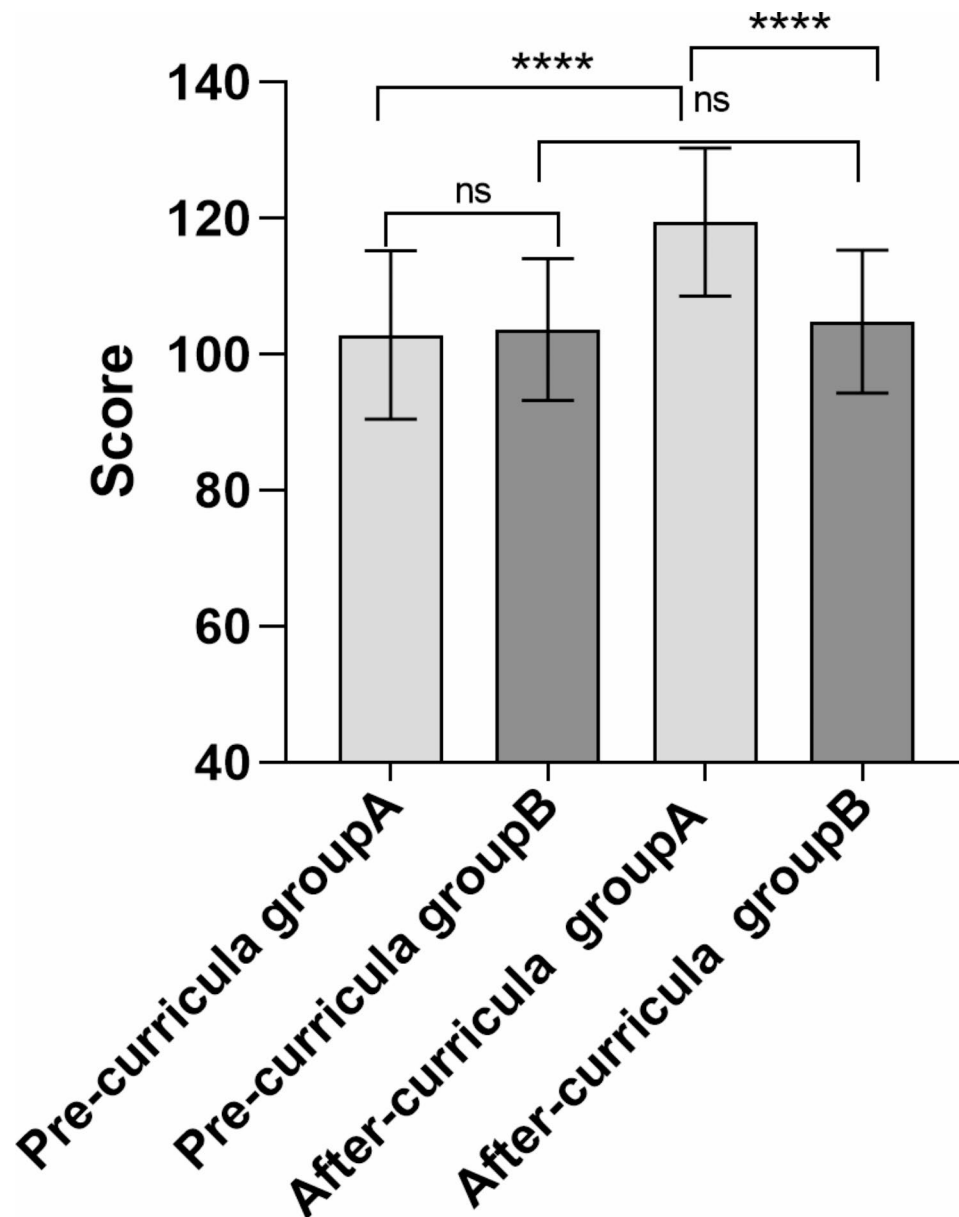
**Discussion**

In China, the three-year standardized residency training program is a mandatory process for medical students to transition into specialized physicians. The traditional standardized residency training model focuses on learning professional knowledge and skills and underestimates the cultivation of medical humanities literacy, which fails to meet the training requirements of the six general competencies (patient care; medical knowledge; practice-based learning and improvement; professionalism; interpersonal skills and communication; and systems-based practice) proposed by Accreditation Council for Graduate Medical Education (ACGME) [14]. Despite the increasing emphasis on humanistic education and the cultivation of professional literacy skills in some domestic residency training bases in China, there is still a dilemma in exploring specific training models.

The clinical practice of OB-GYN involves women’s reproductive organs and is closely related to personal problems such as marriage and childbirth, and often includes sensitive and invasive procedures during diagnosis and treatment [15]. Due to the special characteristics of OB-GYN, it is one of the departments with the highest number of medical disputes in China, which increases the difficulty of residency training. Thus, it is necessary for OB-GYNs to have good humanistic quality and to exhibit empathy for patients’ situations. Empathy ability is a key element of humanistic qualities, for which there is no consensus definition. Most people consider empathy to be a process, involving the ability to understand the patient’s situation, perspective, and feelings, to communicate back that understanding, and to act on that understanding in a helpful and therapeutic way [16]. Empathy is important to enhance the physician–patient relationship by improving trust, diagnostic accuracy, communication, clinical outcomes, and both physician

**Table 2** Comparison of scores between group A and group B

			P
Longitudinal comparison	Pre-curricula group A	After-curricula group A	<0.0001****
	Pre-curricula group B	After-curricula group B	0.7352
Horizontal comparison	Pre-curricula group A	Pre-curricula group B	0.8231
	After-curricula group A	After-curricula group B	<0.0001****



**Fig. 1** Bar chart showing the scores of each group. \*\*\*\*= $p < 0.0001$ , ns = not significant

and patient satisfaction [17–19]. In China, where the OB-GYN residents' workforce is vast and the patients are vulnerable, a decline in empathic abilities may occur during medical training [20]. Thus, interventions are needed to reinforce empathy at the stage of residency training.

The integration of NM into the training of OB-GYN residents has demonstrated a significant enhancement in empathy levels, as evidenced by our study's findings. In this study, an assessment of the empathy scores between the two groups revealed that group A, post-completion of the NM course, exhibited a significantly heightened level of empathy. This outcome aligns with a burgeoning body of literature that underscores the positive impact of NM on empathy within medical education [21, 22]. In

contrast to evidence-based medicine, which focuses on diseases and scientific content, NM concentrates on the ethical and humanistic aspects of medical practice. The narrative skills of "attention, representation, and affiliation" can assist healthcare professionals in being sensitive to patients' illness experience [23], thereby promoting good doctor-patient communication. Based on the curriculum evaluation questionnaire, residents mostly have positive perceptions of this innovative teaching model, believing that it helps improve empathy, enhance doctor-patient communication, and promote self-reflection. However, the survey results regarding the depth of understanding of NM after the course, the necessity of implementing such a course, and whether they would



**Table 3** Survey response (*N* = 23)

Quantitative data						
Survey question	% (N)					Mean
	1	2	3	4	5	
Rating of course (1–5, poor–excellent)	0(0)	4(1)	4(1)	48(11)	44(10)	4.3
Knowledge of NM through this training (1–5, very superficial–very deep)	4(1)	13(3)	13(3)	44(10)	26(6)	3.5
Necessity to conduct this course (1–5, very unnecessary–very necessary)	4(1)	17(4)	44(10)	22(5)	13(3)	3.2
Course design (1–5, very unreasonable–very reasonable)	0(0)	9(2)	34(8)	48(11)	9(2)	3.6
Efficacy of course in improving empathy ability (1–5, very ineffective–very effective)	0(0)	4(1)	9(2)	22(5)	65(15)	4.5
Efficacy of course in enhancing the ability of doctor–patient communication (1–5, very ineffective–very effective)	0(0)	4(1)	9(2)	26(6)	61(14)	4.4
Efficacy of course in promoting self-reflection in medical practice (1–5, very ineffective–very effective)	0(0)	0(0)	9(2)	30(7)	61(14)	4.7
Likelihood of participating in future voluntary NM events (1–5, very unlikely–very likely)	0(0)	22(5)	30(7)	26(6)	22(5)	3.5

continue to participate in NM courses were less satisfactory. The underlying reasons for this lukewarm reception may be attributed to the substantial clinical workload, which leads the trainees to perceive the addition of this course as an exacerbation of their existing burdens. Moreover, within the current training paradigm, there is a pronounced emphasis on the enhancement of theoretical knowledge and technical skills, often overshadowing the significance of cultivating humanistic qualities. This suggests a need to reassess the balance between professional competencies and the development of an empathetic approach to patient health care within medical education. In addition, educators need to explore creative student-centered teaching methods and enrich the content of the curriculum so that students can gain a deeper understanding of the concepts of narrative medicine and its application in clinical settings.

There are still some limitations in this research. Firstly, this study was conducted at a single tertiary hospital and the number of enrolled subjects was small. The responses and experiences of residents in a single training program may not be generalizable to other OB-GYN residency programs. We could consider extending the duration of the study and collaborating with other hospitals to include more residents, thereby strengthening the evidence for our conclusions in further research. Secondly, in this study, the NM course was set up as an elective for OB-GYN residents, making it impossible to achieve randomization and blinding. This voluntary nature may have led to a selection bias, as those who chose to participate in the NM course might have had a higher interest in narrative medicine and reflection skills compared to those who did not. However, during the recruitment of participants, we controlled for confounding factors as much as possible, ensuring that there were no significant differences in gender and age between the two groups of participants. Thirdly, the empathy ability was tested through the Jefferson Empathy Scale. As a self-assessment scale, the Jefferson Empathy Scale relies on

individuals' self-perception and honest reporting, which may be influenced by social expectancy effects, leading to the limited reliability of the results. A combination of other tools and methods, such as peer evaluation, patient feedback, and behavioral observations, may be needed to gain a more comprehensive and in-depth evaluation. Fourthly, this study focused on the short-term changes in the participants' empathy skills immediately after the course, lacking long-term follow-up. Further research is needed to explore the long-term efficacy in residents' empathy following the NM course. Lastly, NM can not only improve students' empathy ability but also enhance their professional knowledge [9] and alleviate occupational burnout [24]. Our research mainly focuses on statistical analysis of empathy ability. The advantages of NM courses have not been fully demonstrated. Further research is recommended to evaluate the role of NM from multiple perspectives.

## Conclusions

In summary, the present study suggests that the combination of NM-based education with standardized clinical training contributes to promoting clinical empathy among OB-GYN residents. OB-GYN residents perceive NM to be a valued and effective means to enhance doctor–patient communication and reflection capability. These skills are integral to medical practice, consistent with core competencies mandated by the ACGME, and difficult to teach [14]. The NM-based education method is a promising addition to the current residency training strategies to improve residents' humanistic literacy. Future research is needed on larger, randomized control groups over longer periods of time to validate this conclusion.

## Abbreviations

NM	Narrative Medicine
OB-GYNs	Obstetricians and Gynecologists
OB-GYN	Obstetrics and Gynecology
ACGME	Accreditation Council for Graduate Medical Education

## Supplementary Information

The online version contains supplementary material available at <https://doi.org/10.1186/s12909-024-06502-y>.

Supplementary Material 1

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## Author contributions

JQ contributed to the study conception and design, drafting of the manuscript, WZ contributed to the acquisition, analysis and interpretation of the data, YH-W contributed to the critical revision of the manuscript for important intellectual content. SX agreed to be responsible for all aspects of the work to ensure the accuracy of the relevant issues. All authors read and approve the final manuscript.

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## Data availability

The datasets used and analysed during the current study are available from the corresponding author on reasonable request.

## Declarations

### Ethics approval and consent to participate

This study was approved by the Ethics Committee of Hangzhou First People's Hospital (approval no. ZN-2023012-01). Participants signed a written informed consent form before taking part in the study, in accordance with the guidelines of the Declaration of Helsinki.

### Consent for publication

Not applicable.

### Competing interests

The authors declare no competing interests.

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