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Innovative Instructional Methodologies to Teach Empathy to Nursing Students: An Integrative Review

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Abstract

Background: Empathy in nursing has been shown to positively impact patient outcomes and support nurses' well-being. However, while this beneficial relationship has been explored in the literature, there remains no established guidelines or optimal instructional methodologies for effectively teaching empathy to nursing students.

Objective: This integrative review aims to examine and synthesize innovative instructional methodologies for teaching empathy to undergraduate nursing students.

Methods: Guided by the Dhollande et al.'s (2021) framework, a comprehensive Boolean search of CINAHL, PubMed, and PsycINFO was conducted between July 2024 and June 2025. A total of 830 articles were screened, with 33 studies meeting eligibility criteria.

Results: Thematic analysis of the included studies yielded four primary domains of instructional methodologies: 1) simulation-based learning, 2) virtual reality experiences, 3) multimodal educational modules, and 4) arts-based interventions. These innovative instructional methodologies positively affected nursing students' short-term empathy development, clinical readiness, and communication skills. However, findings regarding the long-term efficacy and consistency of empathy fostered across diverse student populations were variable.

Conclusions: Empathy education in nursing benefits from multimodal, experiential teaching approaches incorporating emotional reflection and real-world patient perspectives. Sustained empathy development requires reinforcement, structured debriefing, and supportive learning environments. Future research should employ longitudinal designs with validated empathy metrics and examine the translation of empathy gains into clinical behavior.

Keywords: arts-based learning, empathy education, experiential learning, integrative review, nursing education, nursing students, simulation, virtual reality

1. Introduction

1.1 Introduction

Empathy in healthcare is a dynamic process involving the healthcare provider's ability to take the patient's perspective through imaginative, affective, and cognitive processes (Tan et al., 2021). This internal empathy must be authentically expressed through behaviors that show genuine concern and effective communication, including verbal and non-verbal cues. Such interactions foster trust and a sense of connection between the patient and the healthcare provider, forming the foundation of compassionate, person-centered care (Tan et al., 2021)

In healthcare settings, empathy training and higher levels of exhibited empathy by nurses has been consistently linked to improved patient outcomes across various populations and conditions (Dambha-Miller et al., 2019; Hojat et al., 2011; Mahdian et al., 2021; Rees et al., 2014; N. Yang et al., 2018). For example, empathy education enhanced nurses' ability to communicate with and emotionally support parents of preterm infants (Mahdian et al., 2021). In addition, greater levels of nurse empathy have been associated with improved clinical outcomes, including enhanced cellular immunity in lung cancer patients (N. Yang et al., 2018), lower all-cause mortality rates and better metabolic outcomes in patients with type 2 diabetes (Dambha-Miller et al., 2019; Hojat et al., 2011), and greater satisfaction, improved overall health, and reduced pain in patients with musculoskeletal

conditions (Rees et al., 2014). Higher levels of perceived empathy have also been linked to better mental health outcomes for patients during advanced cancer consultations, who reported significantly lower anxiety and emotional distress, and higher satisfaction, regardless of the healthcare provider's self-assessment of their empathy levels (Hoffstädt et al., 2020). Finally, understanding patients' subjective experiences through empathic engagement has even been linked to measurable improvements in healthcare delivery systems, such as reduced 30-day readmission rates and increased patient satisfaction (Thompson et al., 2016).

In addition to improving patient outcomes, empathy plays a key role in promoting caring behaviors among nursing students (Atta et al., 2024). Empathy enhances the professional well-being and performance of nurses by fostering emotional regulation, strengthening interpersonal relationships, enhancing communication satisfaction, promoting resilience, and reducing work-related stress (C. C. Yu et al., 2022; Zhou, 2025). Additionally, hands-on empathy training and ethical reflection have been shown to improve nursing students' professional empathy, moral courage, and confidence (Bas-Sarmiento et al., 2017; Goh et al., 2020; Heggestad et al., 2022). For example, these trainings have enhanced the quality of care in managing aggressive or violent patients in the clinical setting (Goh et al., 2020). Moreover, role-based empathy training has also been effective in boosting nursing students' empathic competencies, with sustained improvements observed up to one month post-intervention (Bas-Sarmiento et al., 2017).

Despite many nursing students' experiences with and awareness of empathy and its importance in clinical care, there are challenges in developing and improving this trait throughout their educational tenure (Goh et al., 2020; Heggestad et al., 2022). One longitudinal research study showed that students often start their nursing programs with a high empathy aptitude (Matshaka, 2023), however, their empathy levels do not remain consistent throughout their education. Another study demonstrated that empathy levels in nursing students remained unchanged despite undergoing empathy training over three years of nursing education (Ferri, Rovesti, Bonetti, et al., 2019). Similarly, a study by Lovan and Wilson, (2012) suggested that clinical exposure alone may not enhance empathy without formal training. Finally, a qualitative study by Su et al., (2021) showed how nursing students gain empathy through emotionally meaningful experiences during clinical practice, including forming emotional bonds with patients, being motivated by role models, and experiencing professional growth when patient acceptance reciprocates compassionate care. This study also showed how, in some cases, nursing students have experienced barriers to their empathy development, such as heavy workloads, distrust, and verbal abuse or devaluation by other healthcare staff.

Although empathy is recognized as important and valuable in nursing education, it is not systematically taught or reinforced in many nursing programs. The existing literature reveals inconsistent outcomes in empathy development among nursing students, with limited evidence on the effectiveness of specific instructional methodologies. Moreover, there is a notable lack of a comprehensive synthesis examining the innovative instructional methodologies geared at fostering empathy in nursing students. This gap underscores the need to identify, evaluate, and inform best practices in teaching empathy through novel instructional techniques.

1.2 Research Aims

This integrative review explores (1) the current state of innovative instructional methodologies for teaching empathy and empathy-related skills to nursing students and (2) which of these methodologies are the most effective tools for teaching empathy to nursing students. For this review, we considered any teaching methodology outside of traditional lectures as innovative instructional methodologies.

2. Method

2.1 Design and Search Strategy

We followed the integrative review framework provided by Dhollande et al., (2021). This framework is well-suited for conducting integrative literature reviews in nursing because it allows for a structured, step-by-step process to conduct the review and is grounded in established literature (Attride-Stirling, 2001; Aveyard & Bradbury-Jones, 2019; Moher et al., 2009; Whittemore & Knafl, 2005). In addition, the Dhollande et al., (2021) framework also incorporates the assessment of qualitative and quantitative research designs, allowing for a more comprehensive synthesis of the literature. As recommended by Dhollande et al. (2021), we used the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) checklist and a PRISMA flow diagram to promote transparency, methodological rigor, and completeness in reporting, thereby enabling readers to critically evaluate the quality and reliability of the review. Finally, the Dhollande et al., (2021) framework supports thematic synthesis, which is a critical part of integrative reviews.

A comprehensive Boolean search was conducted across three electronic databases: CINAHL, PubMed, and

PsycINFO. The search was completed in June 2025, yielding 830 unique articles for initial screening. Boolean operators and keyword combinations were used to refine the search, focusing on terms such as *empathy*, *nursing students*, *training*, *education*, *and teaching* to ensure alignment with the review's objectives.

2.2 Ethical Considerations

Ethical approval was not required for this integrative review.

2.3 Study Selection and Eligibility Criteria

Article screening and selection were conducted by the authors, who are professors in the nursing department with expertise in teaching empathy within nursing education programs. The authors followed the PRISMA guidelines (Moher et al., 2009). Each article was assessed independently for relevance based on predetermined eligibility (inclusion and exclusion) criteria. Articles were eligible for inclusion if they constituted peer-reviewed empirical studies examining empathy education for nursing students, focusing on innovative instructional methodologies beyond traditional lecture-based approaches. Additional inclusion criteria were that the articles were available in a publicly available full text format, written in English, and were current (published < 5 years ago). Articles were excluded if they were not peer-reviewed; if they were meta-analyses or systematic reviews; if they focused solely on compassion or lacked a central emphasis on empathy instruction; or if they involved participants other than nursing students. Of the 830 articles, 374 were excluded based on their titles and abstracts. Of the remaining 456 articles screened, 418 were excluded for not focusing on empathy education; two for not involving nursing students; one for not centering on empathy; and two for not being empirical research studies. Ultimately, 33 articles met all inclusion criteria and were retained for full review and analysis (see Figure 1).

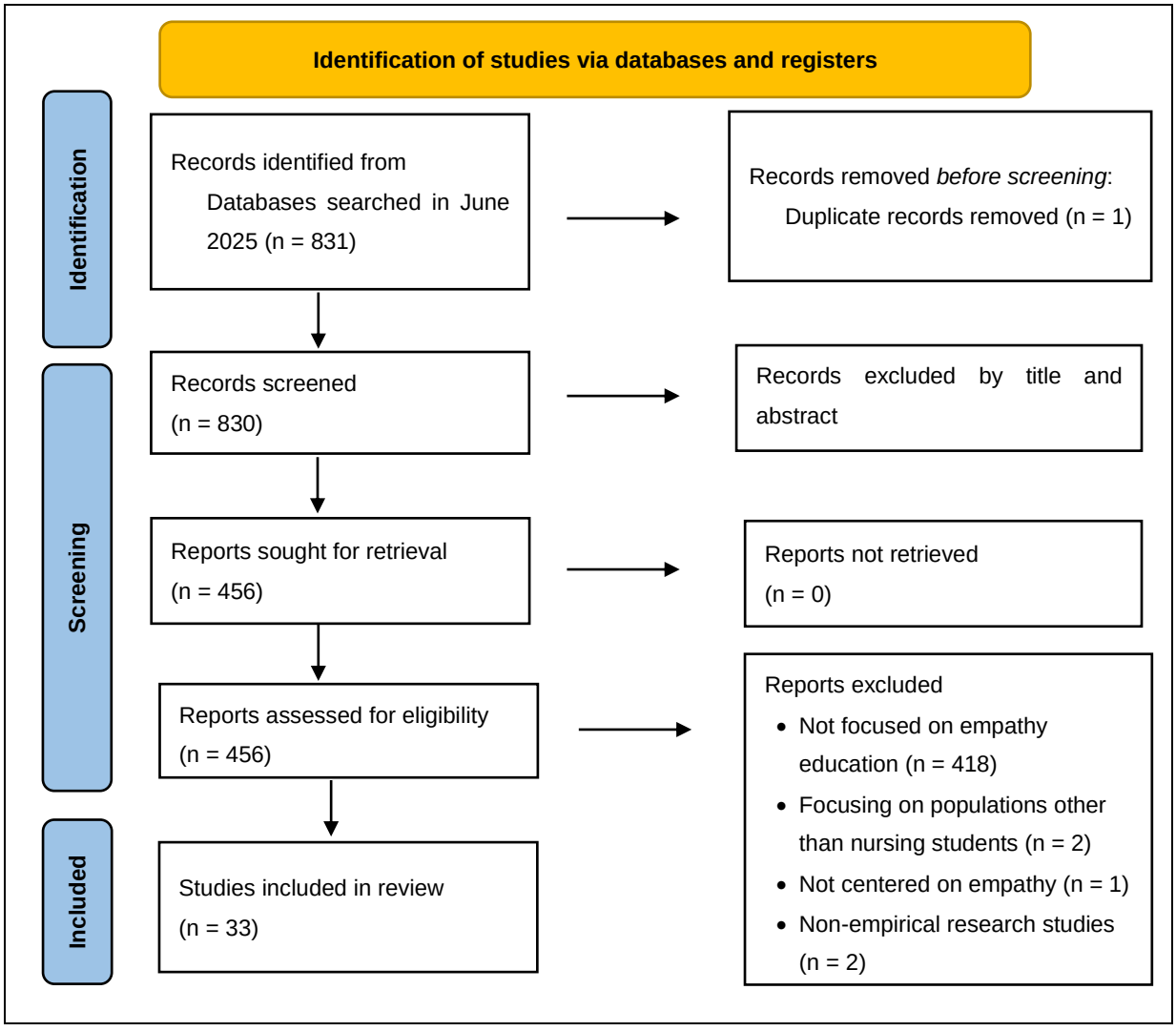

Figure 1. PRISMA flow diagram for innovative instructional methodologies to teach empathy review

2.4 Quality Appraisal

The methodological quality of the included studies was assessed using the Joanna Briggs Institute (JBI) critical appraisal tools (Joanna Briggs Institute, n.d.). The JBI critical appraisal tools are widely applied in conducting systematic reviews to support the rigorous assessment of the methodological quality, relevance, and validity of published research (Melnyk & Fineout-Overholt, 2023; Polit & Beck, 2021). Each article was evaluated independently by both authors (TT and MC) for clarity of research aims, appropriateness of methodology, ethical considerations, data collection rigor, risk of bias, and relevance to the review question. Only articles meeting the threshold for methodological soundness based on the JBI tools were included in the final synthesis.

2.5 Data Extraction and Synthesis

Data extraction was conducted in Microsoft Excel using a structured matrix to capture essential study characteristics, including author(s), year of publication, country of origin, research design, sample size, instructional method, and key findings related to empathy development in nursing students. The included studies were then thematically categorized based on the instructional methodologies employed (see Appendix for the detailed data extraction table).

3. Results

3.1 Thematic Analysis

This review included 33 articles, comprising quantitative, qualitative, and mixed-methods research studies. The sample sizes ranged from 26 to 299 nursing student participants enrolled in undergraduate prelicensure programs, ranging from entry-level to senior-year students. Only one study focused on graduate nursing students. The study designs included randomized controlled trials, quasi-experimental designs, and mixed-methods studies. The studies were conducted in various countries, including the United States, Europe, the Middle East, and East Asia. The risk of bias/limitations of each study was carefully reviewed. Four primary categories emerged from thematic analysis: 1) simulation-based learning, 2) virtual reality experiences, 3) multimodal educational modules, and 4) arts-based interventions (see Table 1).

Table 1. Thematic Analysis Table

Theme 1 Simulation-Based Learning				
Authors	**Nursing Program Level**	**Region**	**Teaching Methodologies**	**Key Findings**
Arrogante et al. (2022)	Undergraduate 2nd year	Spain	High-fidelity simulation	Significant improvement in empathy and attitudes toward older people after high-fidelity simulation
Ayed et al. (2021)	Undergraduate pediatric nursing course	Palestine	High-fidelity simulation	Significant improvement in students' empathy, self-awareness, and patient-centered care
Bas-Sarmiento et al. (2019)	Undergraduate 2nd year	Spain	Simulated clinical interviews and role-playing	Significant improvement in empathy and sustained at follow-up
Fernandez-Gutierrez et al. (2022)	Undergraduate	Spain	Age simulation suit + storytelling + theoretical content	Significant improvement in empathy and attitudes towards older adults
Kimzey et al. (2021)	Undergraduate	USA	Dementia simulation experience	Significant increase in empathy
Li et al. (2019)	Undergraduate 1st year	China	Simulation-based deliberate practice	Improved empathy, communication, and self-efficacy
Patterson et al. (2020)	Undergraduate	USA	Simulation with standardized patients (Alcohol Use Disorder	Significant improvement in the subscales of empathic concern

			focus)	and shared affect
Phillips et al. (2020)	Undergraduate	USA	Interprofessional poverty simulation	Improved empathy and attitudes toward poverty
Sari et al. (2020)	Undergraduate senior year	Turkey	Aged simulation suit	Significant increase in empathy and attitudes towards older adults
Shin et al. (2023)	Undergraduate	South Korea	Simulation with standardized patients and transcultural nursing	Improved cultural competence and empathy
Unal & Ozdemir (2023)	Undergraduate 3rd year	Turkey	Hybrid simulation with standardized patients and burn care scenarios	Improved empathy, knowledge, and skills in burn care
Webster & Carlson (2020)	Undergraduate final year	Sweden	Standardized patient simulation	Improved understanding and application of empathy

Theme 2 Virtual Reality Experiences

Authors	**Nursing Program Level**	**Region**	**Teaching Strategies**	**Key Findings**
Cheung et al. (2024)	Master of Nursing	Hong Kong	Narrative videos, mini-VR games, tutorial with case-based discussion and role-play	Significant increase in empathy and self-efficacy in post-test Reduced empathy with visualization of smoking scenes
Liu et al. (2024)	Undergraduate (Nursing and OT students)	Hong Kong	Immersive virtual reality (IVR) simulation, debriefing, reflective learning, group assignments	Significant improvement in empathy and learning outcomes Strong satisfaction and self-confidence.
Ma et al. (2021)	Undergraduate	USA	Computer role-playing game in VR/non-VR with different character perspectives	Increased empathy Immersion mediated empathy gains.
Peng et al. (2020)	2nd-year Undergraduate	China	Virtual Dementia Tour (VDT), dementia-themed movie	Significant increase in empathy

Theme 3 Multimodal Educational Modules

Authors/Year	**Nursing Program Level**	**Region**	**Teaching Strategies**	**Key Findings**
Çingöl et al. (2021)	4th-year Undergraduate	Turkey	14-week intercultural nursing course on empathic skill and intercultural sensitivity	Significant improvement in cultural sensitivity and self-confidence No significant change in empathy scores.
Ding et al. (2020)	Internship (Children's hospital)	China	Lecture, simulation, and self-reflection module	Significant improvement in empathy, communication, and professional identity.
Gisbert & Rivas (2021)	Undergraduate	Spain	Peer tutoring with role-switching, reflection	Significant improvement in empathy
Ferri et al. (2019b)	1st-year	Italy	Seminar, expert patient sessions,	Significant improvement in

	Undergraduate		debriefing	empathy, especially among male students
Goh et al. (2020)	2nd-year nursing and 3rd-year medical students	Singapore	Experiential learning with video-aided sessions and role-play	Significant increase in empathy and confidence scores.
Huang et al. (2023)	1st-year Undergraduate	Taiwan	Video-recorded role-play and guided reflection	Improved empathy, caring behavior, and competence.
Lobchuk et al. (2023)	3rd and 4th-year Undergraduate	Canada	Web-based empathy portal	Satisfaction with web-based learning of empathy
Varagona et al. (2021)	Undergraduate	USA	Weekly email reminders and pocket-size reference guides	Increased empathic communication; reference guide alone had no additional benefit.
Yang et al. (2020)	4th-year Undergraduate (Interns)	China	Structured empathy training (didactic, video, PBL, TBL, role-play)	Significant gains in empathy domains: perspective taking, compassionate care, standing in patient's shoes.
Theme 4 Arts-Based Learning				
Authors / Year	**Nursing Program Level**	**Region**	**Teaching Strategies**	**Key Findings**
Baker et al., 2019	Undergraduate (Senior year)	USA	Theatre-based monologue writing and performance	Increased empathy and skill development
Basit et al., 2023	2nd-year	Turkey	Drama-supported patient role-play	Significant increase in altruism; short-term increase in empathy
Chang & Mosher, 2023	First-semester undergraduate	USA	Visual Thinking Strategies, art observation, standardized patient encounters	Improved observation, interprofessional collaboration, and empathy
Leyva-Moral et al., 2021	1st-year	Spain	Narrative photography, reflective journaling	High satisfaction; improved reflective thinking and reduced prejudice
Lind et al., 2024	Not specified (nursing students)	USA	Scenario-based simulation with empathy measurement	Higher empathy linked to stronger intention to treat pain
Roberts & Kaur, 2023	Undergraduate	USA	Storytelling, simulation-based learning	Increase in self-perceived empathy; limited change in observed empathy
Xue et al., 2023	4th-year	China	Narrative medicine theory and writing via web-based platform	Significant improvement in empathy, professionalism, and humanistic care ability
Yu et al., 2021	2nd-year	UK	Immersive digital storytelling	Short-term empathy improvement

3.1.1 Theme 1: Simulation-Based Learning

The use of simulation as an instructional methodology to teach nursing students the concept of empathy was examined in 12 studies (see list of studies in Table 1, Theme 1). For all 12 studies, the interventions were

designed to enhance the quality of care delivered to patients. They examined a range of modalities such as the use of high-fidelity simulation, simulation suits, role-playing, standardized patients, and storytelling as instructional techniques integrated into nursing curricula. Across all the studies, simulation as an instructional methodology was shown to increase empathy levels, promote more profound compassion for patients, increase recognition of patient needs, and enhance therapeutic communication skills. In two studies, participating in the simulation helped students develop more positive perceptions of aging and geriatric care (Fernández-Gutiérrez et al., 2022; Sari et al., 2020).

All 12 studies also affirmed that simulation training effectively builds empathy and improves attitudes toward vulnerable populations (Table 1, Theme 1). Two studies also showed that empathy increases were associated with enhanced student readiness for clinical practice and person-centered care (Arrogante et al., 2022; Webster & Carlson, 2020).

Despite these similarities, some inconsistencies were identified across the studies. For instance, one study reported greater gains in high-empathy students than those who began with medium or low baseline empathy, indicating that simulation might benefit students differently based on pre-existing traits (Sari et al., 2020). Also, while using age-related simulation suits increased understanding of the physical constraints experienced by older adults, two studies noted that interaction with real older adults had a more profound impact on attitudinal shifts (Fernández-Gutiérrez et al., 2022; Sari et al., 2020).

3.1.2 Theme 2. Virtual Reality Experiences

Four of the reviewed research studies examined the use of immersive, technology-enhanced interventions, including virtual reality (VR), virtual dementia tours (VDT), and narrative video games to cultivate empathy among nursing and healthcare students (see Table 1, Theme 2 for study list). All four studies discovered that virtual reality-based interventions generally promote empathy in nursing education. Ma et al. (2021) demonstrated that VR-based role-playing games significantly increased empathy, especially when students played from the healthcare provider's perspective. Peng et al. (2020) found that the VDT, paired with a dementia-themed movie, significantly improved students' empathy and understanding toward older adults with dementia. Liu et al. (2024) reported that immersive VR scenarios led to a statistically significant increase in empathy among healthcare students toward older adults with cognitive impairment and strong learning engagement and satisfaction.

Although most VR experiences improved understanding of patient challenges and promoted patient-centered care, Cheung et al. (2024) found that narrative videos and VR mini-games about smokers' resistance to quitting decreased empathy toward smokers, in contrast to findings from Liu et al. (2024) and Peng et al. (2020), who used emotionally supportive or neutral portrayals that fostered empathic responses. As noted by Cheung et al. (2024), their results may have resulted from negative portrayals of smokers. Cheung et al. (2024) also reported that simple VR mini games failed to enhance empathy, suggesting that game design complexity and debriefing are crucial for empathy gains.

3.1.3 Theme 3: Multimodal Educational Modules

Nine of the reviewed studies used multimodal educational modules, which comprised a wide range of instructional modalities, including expert-patient teaching, peer tutoring, video role-play, intercultural education, structured curricula, and digital platforms (see study list in Table 1, Theme 3). Interventions incorporating role-play, patient scenarios, and reflective writing improved communication competence, caring behaviors, and professional identity (Ding et al., 2020; Huang et al., 2023; C. Yang et al., 2020). Even low-cost and resource interventions, such as simple weekly email reminders, were found to improve students' use of empathic communication (Varagona et al., 2021).

Empathy education also improved related outcomes, including communication skills, confidence, and clinical competence (Huang et al., 2023; C. Yang et al., 2020). These studies affirmed that multimodal and interactive formats were more effective than traditional lectures alone in teaching the concept of empathy to nursing students (Goh et al., 2020; Lobchuk et al., 2023).

However, some of the studies found variable outcomes regarding empathy training. In contrast to other studies, Çingöl et al. (2021) found no significant change in participant empathy levels after completing an intercultural nursing course focused on empathic skill and intercultural sensitivity. However, participating in the course maintained existing empathy levels while improving intercultural sensitivity. Lobchuk et al. (2023) discovered that some students found navigating web-based empathy training difficult, highlighting usability issues in digital education platforms. In addition, Varagona et al. (2021) found that not all interventions (e.g., quick-reference

guides) were equally effective, pointing to variability in how empathy-promoting materials are received.

3.1.4 Theme 4: Arts-Based Learning

Eight of the studies used arts-based learning techniques, including storytelling, narrative medicine, drama, immersive digital stories, interprofessional art observation, and expressive writing. These instructional methodologies aimed to move beyond cognitive instruction to foster affective and reflective understanding of patients' lived experiences (see study list in Table 1, Theme 4). Narrative medicine (Xue et al., 2023), immersive digital storytelling (J. Yu et al., 2021), drama-supported role-play (Basit et al., 2023), and monologue performance (Baker et al., 2019) showed positive effects on empathy development. Students in these studies experienced greater emotional and cognitive understanding of patient perspectives. In addition, interprofessional art-based interventions helped develop visual observation skills and promoted empathy by teaching students to recognize subtle emotional cues in standardized patient interactions (Chang & Mosher, 2023). Students in several studies reported improved awareness of social issues and emotional processes, particularly when working with marginalized or vulnerable groups (Baker et al., 2019; Roberts & Kaur, 2023).

Although the immediate post-intervention empathy gains were consistently strong, several studies noted that these effects may fade over time without reinforcement (Basit et al., 2023; J. Yu et al., 2021). For example, empathy gains from drama and immersive story interventions declined by the 3-month follow-up in two studies (Basit et al., 2023; J. Yu et al., 2021). Roberts and Kaur (2023) identified a notable discrepancy between nursing students' self-perceived empathy and the empathy observed by standardized patients. The absence of a significant correlation between these two measures calls into question the reliability of self-reported assessments of empathy (Roberts and Kaur (2023).

4. Discussion

Across the 33 included studies, empathy education in nursing curricula was delivered through diverse modalities, including simulation (Arrogante et al., 2022; Ayed et al., 2021; Bas-Sarmiento et al., 2019; Fernández-Gutiérrez et al., 2022; Kimzey et al., 2021; J. Li et al., 2019; Patterson et al., 2020; Phillips et al., 2020; Sari et al., 2020; Shin et al., 2023; Unal & Ozdemir, 2023; Webster & Carlson, 2020), digital storytelling (J. Yu et al., 2021), role-play (Cheung et al., 2024), intercultural coursework (Çingöl et al., 2021) and expert-patient narratives (Baker et al., 2019; Cheung et al., 2024; Leyva-Moral et al., 2021; Ma et al., 2021; Roberts & Kaur, 2023; Webster & Carlson, 2020; Xue et al., 2023). Thematically, these modality interventions fall under experiential, reflective, and technology-enhanced learning. Despite their differences in delivery, almost all studies improved students' cognitive and affective understanding of patients' lived experiences, particularly those of vulnerable or marginalized populations (Webster & Carlson, 2020; J. Yu et al., 2021). In addition, some studies reported that empathy interventions had immediate post-intervention effects; however, the sustainability of these effects was inconsistent, revealing a complex interplay between short-term efficacy and the need for long-term reinforcement (Çingöl et al., 2021; Ferri, Rovesti, Padula, et al., 2019)

This review identified a few critical gaps in the literature, including the scarcity of long-term follow-up to assess empathy skill retention (Basit et al., 2023; J. Yu et al., 2021), the underrepresentation of male nursing students in empathy research (Ferri, Rovesti, Padula, et al., 2019; J. Yu et al., 2021), and a scarcity of objective or triangulated empathy measures beyond self-report tools (Lobchuk et al., 2023; J. Yu et al., 2021). The first gap, the importance of following up to assess skill retention, is demonstrated by the study by J. Yu et al. (2021). Although they reported that empathy-focused instruction resulted in a statistically significant immediate increase in empathy levels among nursing students, this increase was not maintained at the 8–12 week follow-up. Students had reverted to their baseline scores, highlighting the necessity of incorporating reinforcement strategies or redesigning interventions that promote the long-term retention of empathy skills. Two research studies highlighted the second gap, the underrepresentation of male nursing students, which limited the researcher's ability to explore gender differences in empathy outcomes (Ferri, Rovesti, Padula, et al., 2019; J. Yu et al., 2021). As for the final gap, three studies emphasized the limitations of exclusively utilizing a self-reporting tool to measure empathy in nursing students (Baker et al., 2019; Çingöl et al., 2021; J. Yu et al., 2021). Future research will need to explore more objective assessment methods.

A small but growing body of recent research has begun to explore the cross-cultural and diverse global contexts of empathy training. For example, J. Yu et al. (2021) emphasized using patient storytelling to foster cross-cultural empathy within the UK healthcare setting. Çingöl et al. (2021) examined the development of empathy and intercultural competence in response to Turkey's growing refugee population. Baker et al. (2019) implemented theatre-based monologues drawn from global health narratives to enhance nursing students' empathetic understanding. Likewise, Webster and Carlson (2020) utilized standardized patient simulation to

cultivate empathy and cross-cultural communication in acute care settings. However, only four studies evaluated the impact of empathy interventions across diverse cultural or global contexts. These findings indicate that more studies should examine these aspects of empathy training.

Moreover, while empathy training is widely studied, only three studies (Baker et al., 2019; Webster & Carlson, 2020; J. Yu et al., 2021) explicitly investigated how empathy training translates into clinical behavior among nursing students, although this is the core purpose of empathy training. For instance, Baker et al., (2019) found that empathy training encouraged a shift from task-oriented approaches to relationship-centered care. Similarly, Webster and Carlson (2020) reported improvements in students' ability to form therapeutic relationships and address patients' psychological needs after they received empathy training. J. Yu et al. (2021) further highlighted the role of behavioral empathy in facilitating compassionate and communicative clinical interactions. These findings suggest future research studies should investigate the extent to which empathy training translates into observable clinical behaviors in nursing practice.

4.1 Strengths and Limitations

The body of evidence presented here is strengthened by the inclusion of randomized controlled trials and the use of validated empathy scales, such as the Jefferson Scale of Empathy (REF). However, several limitations persist. Many of the included studies rely on small sample sizes and convenience sampling (Donnelly et al., 2019; Ferri, Rovesti, Padula, et al., 2019) and self-reported empathy measures, which may introduce response bias and limit the reliability of findings (Arrogante et al., 2022; Basit et al., 2023; Çingöl et al., 2021; Donnelly et al., 2019; Ferri, Rovesti, Padula, et al., 2019; Lobchuk et al., 2023; C. Yang et al., 2020; J. Yu et al., 2021). Additionally, as an integrative review synthesizing diverse methodologies—including quantitative, qualitative, and mixed-methods designs—this review is inherently limited by methodological heterogeneity, complicating direct comparisons across studies. The absence of standardized appraisal criteria for varied research designs, combined with potential publication and language bias, may further constrain the generalizability and comprehensiveness of the findings. Finally, due to the interpretive nature of thematic synthesis, there remains a risk of author bias and overgeneralization, and no causal inferences can be drawn from the evidence reviewed.

4.2 Implications

For education and practice, findings from this integrative review support incorporating empathy training into nursing curricula using multimodal, experiential instructional methodologies that, most importantly, are reinforced over time. When utilizing VR as an educational tool, it is essential for educators to thoughtfully select patient scenarios that effectively convey the challenges experienced by patients. For example, Cheung et al. (2024) found that the negative portrayal of individuals who smoke within VR games led to a reduction in nursing students' empathy levels and failed to effectively convey the challenges patients face in attempting smoking cessation, ultimately undermining the training's purpose.

The policy implications of these findings include advocating for mandatory empathy education as part of accreditation standards and encouraging clinical partnerships that offer students real-time exposure to patient perspectives. Empathy education alone may also not be sufficient as nursing students transition into the profession. In fact, workplace culture, clinical experience, and situational stressors have been found to affect the development of empathy (C. C. Yu et al., 2022). Therefore, institutions should strive to create a supportive work environment where nurses can maintain meaningful interactions with patients, which in turn can mitigate the emotional strain of caregiving, foster the sustained development of empathy, and enhance nurses' professional engagement and job satisfaction (C. C. Yu et al., 2022).

4.3 Recommendations for Future Research

Future research about empathy development should include more inclusive study designs to specifically address the underrepresentation of males, consistent use of validated measurement tools and comparison groups, data triangulation to avoid bias, and longitudinal study designs that assess the enduring impact of empathy training in nursing education. Future research should also aim to identify specific interventions that effectively teach empathy and explore scalable models that are culturally adaptive and sustainable across educational settings (Çingöl et al., 2021; Webster & Carlson, 2020).

In summary, these findings affirm the pivotal role of empathy education and its positive ripple effects across clinical, psychological, and physiological dimensions of patient care. These studies also confirm that empathy enhances the quality of patient care and fortifies nurses' and nursing students' emotional and professional resilience (Goh et al., 2020; C. C. Yu et al., 2022; Zhou, 2025). Nursing students need consistent role modeling, structured reflection, and supportive environments to nurture and sustain empathetic behaviors throughout their

training (Su et al., 2021).

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Appendix. Detailed Extraction Table

Theme 1	**Simulation-Based Learning**						
Authors	**Country**	**Sample Size**	**Nursing Program Level**	**Purpose**	**Research Design**	**Key Findings**	**Teaching Strategies**
Arrogante et al. (2022)	Spain	80	Undergraduate, 2nd year	To evaluate effects of high-fidelity simulation on empathy and attitudes toward older people.	Quasi-experimental, single-group pre-post	Significant improvement in empathy and attitudes toward older people after high-fidelity simulation	High-fidelity simulation focusing on geriatric syndromes
Ayed et al. (2021)	Palestine	83	Undergraduate, pediatric nursing course	To evaluate the effect of high-fidelity simulation on self-awareness, empathy, and patient-centered care.	Pretest-posttest	High-fidelity simulation significantly improved students' empathy, self-awareness, and patient-centered care	High-fidelity simulation with structured scenarios and debriefing
Bas-Sarmiento et al. (2019)	Spain	116	Undergraduate, 2nd year	To assess multimodal simulation on empathy and attitude toward older adults.	Randomised controlled trial	Empathy significantly improved and sustained at follow-up	Simulated clinical interviews and role-playing
Fernandez-Gutierrez et al. (2022)	Spain	70	Undergraduate	To assess multimodal simulation on empathy and attitude toward older adults.	Crossover randomised controlled trial	Multimodal intervention significantly improved empathy and attitudes; order of simulation flow mattered	Age simulation suit + storytelling + theoretical content
Kimzey et al. (2021)	USA	65	Undergraduate	To assess impact of dementia simulation on knowledge and empathy.	Mixed-method	Significant increase in empathy post dementia simulation	Dementia simulation experience
Li et al. (2019)	China	132	Undergraduate, 1st year	Evaluate effects of simulation-based deliberate practice on empathy and self-efficacy.	Randomized controlled trial	Improved empathy, communication, and self-efficacy	Simulation-based deliberate practice
Patterson et al. (2020)	USA	56	Undergraduate	To evaluate simulation on empathy toward	Mixed-methods	Significant improvement in empathy	Simulation with standardized patients (Alcohol

				patients with alcohol use disorder.		subscales: empathic concern and shared affect	Use Disorder focus)
Phillips et al. (2020)	USA	31	Undergraduate	To assess effect of interprofessional simulation on empathy and poverty attitudes.	Pre-post design	Improved empathy and attitudes toward poverty	Interprofessional poverty simulation
Sari et al. (2020)	Turkey	30	Undergraduate, senior year	To evaluate effect of aged simulation suit on attitudes and empathy.	Mixed-methods	Significant increase in empathy and attitudes towards older adults	Aged simulation suit
Shin et al. (2023)	South Korea	53	Undergraduate	Evaluate a transcultural simulation program with Emirati patient scenario.	Quasi-experimental, non-randomized control group	Improved cultural competence and empathy using simulation with Emirati patient cases	Simulation with standardized patients and transcultural nursing
Unal & Ozdemir (2023)	Turkey	56	Undergraduate, 3rd year	Examine hybrid simulated burn care training's impact on empathy, skills, and knowledge.	Randomized controlled trial	Improved empathy, knowledge, and skills in burn care with hybrid simulation	Hybrid simulation with standardized patients and burn care scenarios
Webster & Carlson (2020)	Sweden	100	Undergraduate, final year	To evaluate the impact of standardised patient simulation on development of phenomenological empathy and sense of coherence.	Descriptive evaluation study	Standardized patient simulation improved understanding and application of empathy and sense of coherence	Standardized patient simulation, phenomenological empathy and sense of coherence training
Theme 2	**Virtual Reality Experiences**						
Authors	**Country**	**Sample Size**	**Nursing Program Level**	**Purpose**	**Research Design**	**Key Findings**	**Teaching Strategies**
Cheung, Y.T.D. et al. (2024)	Hong Kong	26	Master of Nursing	Evaluate effects of narrative videos and mini-VR games on empathy and self-efficacy in smoking cessation training.	Randomized Controlled Trial	Significant increase in empathy and self-efficacy in post-test Reduced empathy with visualization of smoking scenes	Narrative videos, mini-VR games, tutorial with case-based discussion and role-play
Liu, J.Y.W. et al. (2024)	Hong Kong	344	Undergraduate (Nursing and OT students)	Evaluate IVR-assisted experiential	Multiple-methods (survey, focus groups, assignment	Significant improvement in empathy and	Immersive virtual reality (IVR) simulation,

				learning on empathy toward older adults with cognitive impairment.	analysis)	learning outcomes; strong satisfaction and self-confidence.	debriefing, reflective learning, group assignments
Ma, Z. et al. (2021)	USA	69	Undergraduate	Investigate feasibility of computer role-playing game (CRPG) on empathy with focus on immersiveness and perspective.	2x2 Experimental Design	VR and healthcare provider perspective increased empathy; immersion mediated empathy gains.	Computer role-playing game in VR/non-VR with different character perspectives
Peng, X. et al. (2020)	China	45	2nd-year Undergraduate	Evaluate impact of Virtual Dementia Tour (VDT) on empathy levels.	Quasi-experimental (Pre-Post)	Significant increase in empathy; students found VDT insightful and impactful for future care.	Virtual Dementia Tour (VDT), dementia-themed movie
Theme 3	**Multi-Modal Educational Modules**						
Authors/Year	**Country**	**Sample Size**	**Nursing Program Level**	**Purpose**	**Research Design**	**Key Findings**	**Teaching Strategies**
Çingöl et al. (2021)	Turkey	113	4th-year Undergraduate	To determine the effect of an intercultural nursing course on empathic skill and intercultural sensitivity.	Pretest-posttest with control group	Significant improvement in intercultural communication confidence; no significant change in empathy scores.	14-week intercultural nursing course on empathic skill and intercultural sensitivity
Ding et al. (2020)	China	250	Internship (Children's hospital)	To evaluate effectiveness of Knowledge, Simulation, and Sharing training on empathy skills.	Quasi-experimental, controlled pre-post	Significant improvement in empathy, communication, and professional identity.	Knowledge, simulation, and sharing module (Lecture, simulation, and self-reflection)
Gisbert & Rivas (2021)	Spain	76	Undergraduate	Assess peer tutoring's effectiveness on developing empathy.	Mixed-methods quasi-experimental	Significant improvement in empathy in intervention group.	Peer tutoring with role-switching, reflection
Ferri et al. (2019)	Italy	144	1st-year Undergraduate	Evaluate effect of expert-patient teaching on empathy development.	Randomized Controlled Trial	Significant improvement in empathy, especially among male students.	Seminar, expert patient sessions, debriefing

Goh et al. (2020)	Singapore	299	2nd-year Nursing and 3rd-year Medical	Evaluate impact of ECARE on empathy and confidence in managing violent patients.	Pre-post, same group quasi-experimental	Significant increase in empathy and confidence scores.	Experiential learning with video-aided sessions and role-play
Huang et al. (2023)	Taiwan	72	1st-year Undergraduate	Examine effects of video role-play and reflection on empathy and competence.	Two-group pretest-posttest	Improved empathy, caring behavior, and competence.	Video-recorded role-play and guided reflection
Lobchuk et al. (2023)	Canada	8	3rd and 4th-year Undergraduate	Test usability of a web-based empathy training portal.	Mixed methods usability testing	Portal considered usable; tagging interface needs refinement. Satisfaction with web-based learning of empathy	Web-based empathy portal with perspective-taking and tagging
Varagona et al. (2021)	USA	67	Undergraduate	Compare effectiveness of email reminders and quick reference guides on empathy.	Randomized Controlled Trial	Email reminders increased empathic communication; QRG alone had no additional benefit.	Weekly email reminders and pocket-size reference guides
Yang et al. (2020)	China	118	4th-year Undergraduate (Interns)	Assess effect of structured empathy education program on empathy competency.	Quasi-experimental (2-group)	Significant gains in empathy domains: perspective taking, compassionate care, standing in patient's shoes.	Structured empathy training (didactic, video, PBL, TBL, role-play)
Theme 4	**Arts-Based Learning**						
Authors / Year	**Country**	**Sample Size**	**Nursing Program Level**	**Purpose**	**Research Design**	**Key Findings**	**Teaching Strategies**
Baker et al., 2019	USA	26	Undergraduate (Senior year)	Develop empathy, qualitative research, writing and presentation skills through monologue creation and performance	Descriptive / Educational innovation	80%+ reported increased empathy and skill development	Theatre-based monologue writing and performance
Basit et al., 2023	Turkey	52	2nd-year	Assess impact of drama-supported patient role-play on empathy and altruism	Randomized controlled trial	Significant increase in altruism; short-term increase in	Drama-supported patient role-play

						empathy	
Chang & Mosher, 2023	USA	192	1st-semester undergraduate	Develop observation and empathy skills using art and simulation	Educational intervention (Art Rounds)	Improved observation, interprofessional collaboration, and empathy	Visual Thinking Strategies, art observation, standardized patient encounters
Leyva-Moral et al., 2021	Spain	17	1st-year	Assess satisfaction with narrative photography to develop empathy toward people with HIV	Mixed-method design	High satisfaction; improved reflective thinking and reduced prejudice	Narrative photography, reflective journaling
Lind et al., 2024	USA	156	Not specified (students in training)	Explore empathy's role in pain perception and treatment intention	Scenario-based experimental design	Higher empathy linked to stronger intention to treat pain	Scenario-based simulation with empathy measurement
Roberts & Kaur, 2023	USA	71	Undergraduate	Evaluate storytelling and empathy training in simulation	Quasi-experimental	Increase in self-perceived empathy; limited change in observed empathy	Storytelling, simulation-based learning
Xue et al., 2023	China	85	4th-year	Evaluate narrative medicine in developing professionalism, empathy, humanistic care	Randomized controlled trial	Significant improvement in empathy, professionalism, and humanistic care ability	Narrative medicine theory and writing via web-based platform
Yu et al., 2021	UK	238	Second-year	Evaluate immersive digital story intervention’s impact on empathy	Randomized controlled trial	Short-term empathy improvement in intervention group	Immersive digital storytelling, QR code 'story walk'