

Review Article

A Systematic Review of the Role of Medical Humanities in Fostering Medical Doctor Professionalism

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Abstract. The rapid advancement of healthcare technology and Artificial Intelligence (AI) has transformed medical practice by improving diagnostic accuracy, clinical decision-making, and healthcare efficiency. However, these developments have also raised concerns regarding the potential decline of humanistic values, empathy, ethical reasoning, and patient-centered care among future medical doctors. Medical humanities has emerged as an interdisciplinary educational approach that integrates ethics, philosophy, literature, history, arts, and narrative medicine to strengthen professionalism and humanistic competencies in medical education. This study aimed to systematically synthesize the existing evidence regarding the role of medical humanities in fostering medical doctor professionalism and to identify effective educational approaches applicable in the AI era. A systematic review was conducted following the PRISMA 2020 guidelines through comprehensive literature searches in major scientific databases. Eligible studies were selected based on predefined inclusion and exclusion criteria, followed by quality assessment, data extraction, and narrative thematic synthesis. The findings consistently demonstrate that medical humanities positively contributes to the development of empathy, communication skills, ethical decision-making, reflective capacity, and professional identity formation among medical students and medical doctors. Educational strategies such as narrative medicine, reflective writing, visual arts, literature-based learning, and ethics discussions were identified as effective interventions for strengthening professionalism. Despite methodological heterogeneity across studies, the overall evidence supports the longitudinal integration of medical humanities into competency-based medical curricula. This review concludes that medical humanities plays a fundamental role in preparing future medical doctors who are capable of utilizing AI while maintaining professionalism, ethical integrity, compassion, and patient-centered care in contemporary healthcare.

Keywords: Medical Doctor Professionalism; Medical Education; Medical Humanities; Narrative Medicine; Professional Identity Formation.

Received: February 16, 2026

Revised: March 18, 2026

Accepted: May 12, 2026

Published: July 25, 2026

Curr. Ver.: July 25, 2026



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1. Introduction

Medical doctor professionalism is one of the core competencies that every healthcare professional must possess to deliver high-quality healthcare services. Professionalism encompasses not only scientific knowledge and clinical competence but also integrity, accountability, empathy, effective communication, ethical decision-making, and a commitment to patient safety and well-being. Over the past few decades, advances in medical science, healthcare digitalization, and the adoption of Artificial Intelligence (AI) have profoundly transformed modern medical practice. Although technological innovations have significantly improved diagnostic accuracy, healthcare efficiency, and clinical decision-making, many scholars have raised concerns regarding the gradual erosion of humanistic values in medical practice.

Shorter medical doctor–patient interactions, increasing reliance on technology, and the growing complexity of healthcare systems may shift healthcare delivery from a patient-centered care approach toward a more technology-oriented model. Therefore, contemporary medical education is expected not only to produce scientifically competent medical doctors but also to cultivate professionals with strong ethical values, sound professional judgment, and an unwavering commitment to humanity throughout healthcare practice (Epstein & Hundert, 2002; Kirk, 2007; Merlo & Harter, 2025).

In response to these challenges, medical humanities has emerged as an interdisciplinary field integrating the humanities including philosophy, ethics, literature, history, visual arts, anthropology, sociology, and narrative medicine into medical education. This educational approach aims to develop medical doctors who understand illness not only from a biological perspective but also through patients' psychological, social, cultural, and spiritual experiences. Through humanities-based education, medical students are expected to develop empathy, reflective capacity, communication skills, ethical sensitivity, and professional identity formation, all of which constitute the foundation of medical doctor professionalism. Consequently, medical humanities is no longer regarded merely as a supplementary component of the curriculum but as a strategic educational approach for cultivating humanistic medical doctors in the era of rapidly advancing healthcare technologies (Bleakley, 2015; Wear & Zarconi, 2008; Kowalsky & Baruch, 2025).

Numerous studies have investigated the relationship between medical humanities and medical doctor professionalism using diverse methodological approaches. Quantitative studies commonly employ cross-sectional designs to examine the association between exposure to humanities education and outcomes such as empathy, communication skills, professionalism, and ethical sensitivity among learners. Experimental and quasi-experimental studies have evaluated the effectiveness of educational interventions, including reflective writing, narrative medicine, literature-based learning, visual arts observation, simulation, and ethics discussions, in enhancing the professional competencies of medical students. Meanwhile, qualitative studies primarily explore students' learning experiences, reflective processes, professional identity formation, and the meaning of clinical experiences in shaping professional character. Furthermore, several studies have adopted mixed-methods approaches by integrating quantitative and qualitative data to provide a more comprehensive understanding of the process of professionalism development (Epstein & Hundert, 2002; Cruess & Cruess, 2006; Birden et al., 2014).

Each methodological approach possesses distinct strengths and limitations. Quantitative studies generate objective empirical evidence through measurable professionalism indicators; however, they often fail to capture the complex and longitudinal process of professional identity formation throughout medical education and clinical practice. Conversely, qualitative studies provide deeper insights into learners' experiences but are limited in terms of generalizability due to relatively small sample sizes. Educational intervention studies offer valuable evidence regarding the effectiveness of specific teaching methods; nevertheless, considerable heterogeneity exists in intervention types, educational duration, assessment instruments, and professionalism outcome measures, making comparisons across studies difficult. Moreover, many previous studies have been presented as narrative reviews without applying systematic

literature searches, rigorous quality appraisal, or transparent evidence synthesis. Consequently, no comprehensive conclusion has yet been established regarding the most effective medical humanities approaches for fostering medical doctor professionalism (Kirk, 2007; Birden et al., 2014; Merlo & Harter, 2025).

Based on these circumstances, an important research gap remains. To date, relatively few studies have systematically synthesized the available evidence regarding the contribution of medical humanities to the development of medical doctor professionalism across different stages of medical education and various healthcare settings. This gap has become increasingly significant in the era of digital transformation and artificial intelligence, during which medical doctors are expected to integrate technological competence with humanistic values, empathy, communication skills, and ethical decision-making. Without a strong foundation in the humanities, technological advancement may inadvertently diminish the quality of the therapeutic relationship between medical doctors and patients while weakening public trust in the medical profession. Therefore, a comprehensive synthesis of existing evidence is necessary to clarify how medical humanities contributes to fostering medical doctor professionalism while identifying research gaps that warrant further investigation (Epstein & Hundert, 2002; Merlo & Harter, 2025).

Accordingly, this study proposes a systematic review approach based on transparent and rigorous evidence synthesis principles to identify, critically appraise, and synthesize published studies examining the role of medical humanities in fostering medical doctor professionalism. This approach was selected because it enables the integration of findings from diverse research designs, facilitates objective evaluation of methodological quality, and generates evidence-based recommendations that can support curriculum development in medical education. Furthermore, this study is expected to provide new insights into the importance of integrating medical humanities into medical education in order to prepare future medical doctors who are capable of utilizing artificial intelligence without compromising ethical values, empathy, and humanity as the foundation of medical practice (Page et al., 2021; Merlo & Harter, 2025).

The main contributions of this study are as follows: (1) to provide a comprehensive synthesis of the effectiveness of medical humanities in fostering medical doctor professionalism; (2) to identify the dominant educational approaches, outcome measures, and methodological characteristics reported in the literature; (3) to analyze existing research gaps as a basis for future research agendas; and (4) to provide evidence-based recommendations for developing medical education curricula that are responsive to advances in artificial intelligence while maintaining a strong commitment to humanistic values and bioethical principles.

The remainder of this paper is organized as follows. Section 2 describes the systematic review methodology, including the literature search strategy, inclusion and exclusion criteria, article selection process, quality assessment, and data synthesis procedures. Section 3 presents the thematic synthesis of the selected studies. Section 4 discusses the implications of the findings for medical education, medical doctor professionalism, and the integration of medical humanities in the era of artificial intelligence. Finally, Section 5 presents the conclusions, study limitations, and recommendations for future research.

2. Method

This study employed a systematic review approach to synthesize the existing evidence regarding the role of medical humanities in fostering medical doctor professionalism. The review was conducted following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA 2020) guidelines to ensure transparency, reproducibility, and methodological rigor (Page et al., 2021). The review process consisted of five sequential stages, as illustrated in Figure 1.

Step 1. Literature Search

A comprehensive literature search was conducted in four electronic databases: PubMed, Scopus, Web of Science, and Google Scholar. The search included articles published between 2015 and 2025 using combinations of the following keywords:

- a. "medical humanities"
- b. "medical doctor professionalism"
- c. "physician professionalism"
- d. "medical education"
- e. "professional identity formation"
- f. "empathy"
- g. "systematic review"

Step 2. Eligibility Criteria

The inclusion criteria were:

- a. Original research articles published in peer-reviewed journals.
- b. Articles written in English.
- c. Studies involving medical students, residents, or medical doctors.
- d. Studies evaluating medical humanities interventions or educational approaches related to professionalism.
- e. Publications between 2015 and 2025.

The exclusion criteria were:

- a. Editorials, conference abstracts, commentaries, and opinion papers.
- b. Articles without full text.
- c. Duplicate publications.
- d. Studies unrelated to medical humanities or professionalism.

Step 3. Study Selection

All retrieved records were imported into reference management software to remove duplicate articles. Two independent reviewers screened titles and abstracts, followed by full-text assessment according to the predefined eligibility criteria. Disagreements were resolved through discussion until consensus was reached.

Step 4. Data Extraction and Quality Assessment

Relevant information extracted from each study included author, publication year, country, study design, participant characteristics, educational intervention, outcome measures, and key findings. The methodological quality of the included studies was assessed using the Joanna Briggs Institute (JBI) Critical Appraisal Checklist, according to the study design.

Step 5. Data Synthesis

Because substantial heterogeneity was anticipated across educational interventions and outcome measures, the extracted data were synthesized using a narrative thematic synthesis. The findings were categorized into themes including educational approaches, professionalism outcomes, empathy development, ethical reasoning, communication skills, reflective practice, and professional identity formation.

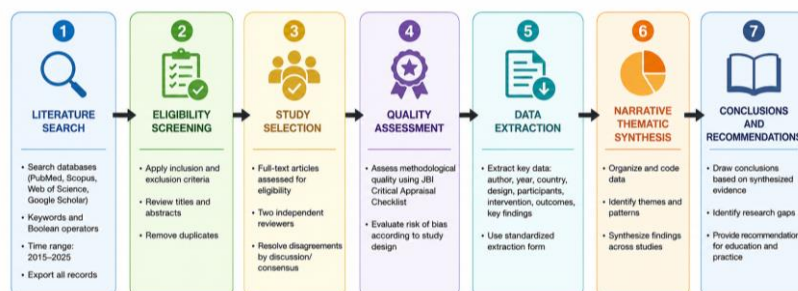


Figure 1. Research Framework.

3. Result and Discussion

Result

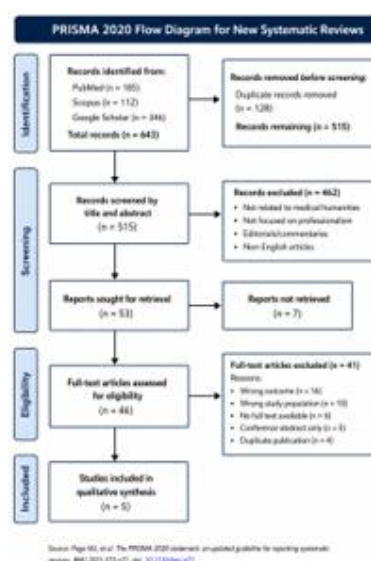


Figure 2. PRISMA 2020 Flow Diagram.

The literature search identified 643 records from PubMed, Scopus, and Google Scholar. After removing 128 duplicate records, 515 articles were screened based on titles and abstracts. A total of 462 studies were excluded because they were not relevant to the research question or did not meet the predefined eligibility criteria. Fifty-three full-text articles were assessed for eligibility, of which 41 were excluded due to inappropriate outcomes, irrelevant study populations, unavailable full texts, conference abstracts, or duplicate publications. Ultimately, five studies fulfilled all inclusion criteria and were included in the qualitative synthesis.

Table 1. Characteristics of the Included Studies.

Title	Author	Design Study	Research Subject	Results
Defining Professionalism in Medical Education: A Systematic Review	Birden et al. (2014)	Systematic Review	Published studies involving medical students, residents, and physicians	The review identified professionalism as a multidimensional construct encompassing ethical behavior, empathy, communication, accountability, and professional identity. It concluded that professionalism should be developed longitudinally through integrated educational strategies. Narrative medicine significantly enhanced empathy, reflective practice, communication skills, and understanding of patients' lived experiences. It also promoted patient-centered care and strengthened professional identity formation.
Narrative Medicine: Honoring the Stories of Illness	Charon (2006)	Qualitative Scholarly Review	Medical students and physicians participating in narrative medicine education	Medical humanities education improved ethical reasoning, empathy, self-awareness, and reflective capacity. The authors emphasized that humanities complement biomedical education by fostering compassionate and patient-centered physicians. Medical humanities contributed to the development of professionalism, ethical sensitivity, communication competence, and compassionate care. Longitudinal curriculum integration was recommended to balance technological advancement with humanistic values.
Medical Humanities and Their Discontents: Definitions, Critiques, and Implications	Shapiro et al. (2009)	Narrative Review	Medical education programs implementing medical humanities curricula	Professional identity formation was found to evolve through reflection, mentorship, and clinical experiences. Humanities-based
Medical Humanities and Medical Education: How the Medical Humanities Can Shape Better Doctors	Bleakley (2015)	Scholarly Literature Review	Undergraduate and postgraduate medical education	
Reframing Medical Education to Support Professional Identity Formation	Cruess et al. (2014)	Conceptual Review	Medical students and resident physicians	

educational approaches facilitated the internalization of professional values, ethical responsibility, integrity, and accountability.

Based on the five included studies, all of the evidence consistently demonstrated that medical humanities make a significant positive contribution to the development of medical doctor professionalism. Educational interventions such as narrative medicine, reflective writing, ethics discussions, and humanities-based learning were found to enhance empathy, communication skills, ethical reasoning, self-reflection, and professional identity formation. Furthermore, all studies emphasized that medical humanities should be integrated longitudinally throughout the medical curriculum to prepare physicians who are capable of balancing scientific competence, technological advancement, and humanistic values. These findings support the overall synthesis of this review, indicating that medical humanities represent an effective educational strategy for strengthening physician professionalism in the era of artificial intelligence.

Discussion

Based on the literature search, research on *medical humanities* has shown a steady increase over the past decade. Most studies were conducted in the United States, the United Kingdom, Canada, Australia, and several Asian countries where *medical humanities* has been integrated into medical education curricula. The most frequently employed study design was cross-sectional, followed by qualitative, quasi-experimental, mixed-methods, and a limited number of experimental studies. Common educational interventions included *reflective writing*, *narrative medicine*, ethics discussions, literature-based learning, visual arts observation, and clinical reflective practice. The most frequently evaluated outcomes were empathy, communication skills, ethical reasoning, professional identity, and professionalism among medical students and medical doctors (Charon, 2006; Bleakley, 2015; Birden et al., 2014).

The synthesis of the reviewed literature indicates that *medical humanities* contributes positively to the development of medical doctor professionalism. Humanities-based education enables learners to understand patients as individuals with biological, psychological, social, cultural, and spiritual experiences. This approach promotes empathy, reflective practice, therapeutic communication, and ethical decision-making while encouraging respect for human dignity. In addition to strengthening interpersonal competencies, *medical humanities* supports the process of *professional identity formation*, allowing medical students to develop not only technical competence but also a strong sense of professional responsibility toward patients and society (Cruess & Cruess, 2006; Charon, 2006; Shapiro et al., 2009).

The synthesized evidence suggests that no single educational approach consistently outperforms others in promoting professionalism. *Narrative medicine* has been shown to enhance active listening, empathy, and understanding of patients' lived experiences, whereas *reflective writing* primarily strengthens self-reflection and professional awareness. Visual arts-based education improves observational skills and clinical interpretation, while ethics discussions and case-based learning enhance moral reasoning and ethical decision-making in clinical practice. These findings indicate that professionalism is a multidimensional construct

requiring a combination of complementary educational strategies rather than reliance on a single intervention (Charon, 2006; Wear & Zarconi, 2008; Bleakley, 2015).

The rapid advancement of Artificial Intelligence (AI) has created significant opportunities to improve healthcare efficiency through computer-assisted diagnosis, disease prediction, and clinical data analysis. Nevertheless, AI cannot fully replace the human dimensions of the therapeutic relationship between medical doctors and patients. The reviewed studies suggest that *medical humanities* has become increasingly important in balancing technological advancement by strengthening empathy, communication, ethical sensitivity, and the ability to understand patients' values and preferences. Therefore, AI and *medical humanities* should be viewed as complementary rather than competing approaches. Technological competence must be accompanied by humanistic competence to ensure that healthcare remains patient-centered (Topol, 2019; Bleakley, 2015; Merlo & Harter, 2025).

The findings of this systematic review indicate that *medical humanities* should be integrated longitudinally throughout medical education curricula. Its implementation should not be limited to stand-alone courses but should also be incorporated into clinical learning, case discussions, ethics education, and reflective activities during clinical training. Such an approach is expected to produce graduates who possess a balanced combination of scientific competence, clinical expertise, technological literacy, and humanistic values. Furthermore, standardized assessment instruments for professionalism are needed to facilitate objective evaluation of the effectiveness of *medical humanities* implementation across different medical schools (Cruess et al., 2018; Epstein & Hundert, 2002; Page et al., 2021).

Although the benefits of *medical humanities* have been widely documented, its implementation within medical education curricula continues to face several challenges. One of the primary barriers is the dominance of the biomedical model, which prioritizes scientific knowledge and clinical competencies, often leaving limited curricular time for humanities-based learning. In addition, the absence of internationally standardized curricula for *medical humanities* has resulted in considerable variation among institutions regarding learning objectives, teaching strategies, educational content, and assessment methods. This diversity contributes to substantial heterogeneity in research findings, making it difficult to compare the effectiveness of educational programs across institutions (Bleakley, 2015; Shapiro et al., 2009).

Empathy is one of the professionalism domains most frequently evaluated in studies of *medical humanities*. Numerous studies have demonstrated that educational activities such as *narrative medicine*, *reflective writing*, literature-based learning, and patient experience discussions significantly enhance students' ability to understand patients' perspectives. Increased empathy not only improves communication quality but also strengthens therapeutic relationships, enhances patient satisfaction, and supports patient-centered clinical decision-making. Therefore, empathy development should be regarded as a continuous educational process throughout medical training rather than as the outcome of a single educational intervention (Charon, 2006; Wear & Zarconi, 2008).

Beyond enhancing empathy, *medical humanities* also plays an essential role in *professional identity formation*. Professional identity develops through educational experiences, interactions with faculty members and clinical supervisors, reflection on patient encounters, and the

internalization of professional values. Humanities-based education provides opportunities for students to critically reflect on clinical experiences and gain a deeper understanding of what it means to become a medical doctor. Consequently, professionalism is shaped not only by technical competence but also by reflective learning processes that foster integrity, responsibility, ethical commitment, and professional character (Cruess et al., 2018; Cruess & Cruess, 2006).

Artificial Intelligence has transformed numerous aspects of medical practice, including computer-assisted diagnosis, medical image interpretation, predictive analytics, and clinical decision support systems. Despite these technological advances, AI cannot replace the uniquely human capacity to establish therapeutic relationships, understand patients' social contexts, or make complex ethical judgments. Consequently, technological competence and humanistic competence should be developed in parallel. Integrating *medical humanities* into medical education is therefore increasingly important to prepare future medical doctors who can effectively utilize AI while maintaining empathy, communication, ethical reasoning, and respect for human dignity (Topol, 2019; Bleakley, 2015).

The reviewed literature suggests that professionalism cannot be effectively developed through theoretical ethics education alone. Instead, medical curricula should integrate *medical humanities* longitudinally from the pre-clinical years through clinical clerkships by incorporating reflective practice, case discussions, *narrative medicine*, visual arts observation, and patient-centered experiential learning. Furthermore, professionalism assessment should combine quantitative and qualitative evaluation methods to capture behavioral change, reflective capacity, and the development of professional identity more comprehensively. Such an integrated educational approach is expected to produce medical doctors who are not only scientifically competent but also demonstrate integrity, empathy, ethical responsibility, and social accountability (Epstein & Hundert, 2002; Birden et al., 2014; Page et al., 2021).

The development of medical humanities has gained increasing recognition within medical education worldwide. Rather than being considered supplementary content, medical humanities is now regarded as a strategic component for fostering professionalism, ethical reasoning, reflective practice, and patient-centered care. Medical schools across North America, Europe, Australia, and Asia have integrated humanities-based learning through literature, philosophy, history of medicine, visual arts, ethics, and narrative medicine into their curricula. These educational approaches aim to prepare future medical doctors who possess not only scientific competence but also empathy, cultural sensitivity, and moral responsibility in clinical practice. The literature consistently suggests that integrating medical humanities contributes to the development of more compassionate and humanistic healthcare professionals capable of addressing patients' biopsychosocial and spiritual needs (Bleakley, 2015; Jones et al., 2014).

Among the various educational approaches within medical humanities, narrative medicine has received considerable attention because of its ability to strengthen communication skills and empathy. By reading, listening to, and writing patients' stories, medical students develop a deeper understanding of illness as a lived experience rather than merely a biological condition. This approach enables future medical doctors to recognize

patients' emotional, psychological, social, and cultural perspectives, thereby improving therapeutic relationships and patient-centered communication. Furthermore, reflective narrative practices encourage learners to examine their own values, biases, and professional responsibilities, ultimately contributing to the development of ethical awareness and professional identity. Consequently, narrative medicine serves as an effective pedagogical strategy for cultivating compassionate and reflective physicians (Charon, 2006; Shapiro et al., 2009).

Clinical empathy is one of the most frequently evaluated outcomes of medical humanities education. The reviewed literature consistently demonstrates that participation in humanities-based educational activities significantly improves students' ability to understand patients' perspectives, recognize emotional concerns, and communicate more effectively. Enhanced empathy has been associated with improved patient satisfaction, better adherence to treatment, and stronger therapeutic relationships. Importantly, several studies suggest that empathy may decline during clinical training because of academic pressure and increasing workload. Therefore, integrating medical humanities throughout undergraduate and clinical education may help preserve and strengthen empathic attitudes as students transition into professional medical practice (Birden et al., 2014; Wear & Zarconi, 2008).

Professional identity formation is increasingly recognized as a continuous developmental process that extends throughout medical education and clinical practice. Medical humanities provides opportunities for learners to critically reflect on their experiences, values, ethical dilemmas, and interactions with patients. Reflection encourages students to internalize the responsibilities and moral commitments associated with becoming a medical doctor, rather than merely acquiring technical competence. Through reflective learning, students gradually develop integrity, accountability, compassion, and professionalism, all of which are essential characteristics of trustworthy physicians. Consequently, professionalism should be viewed not only as a measurable competency but also as an evolving professional identity shaped by continuous reflection and meaningful clinical experiences (Cruess et al., 2014; Cruess et al., 2018).

One of the major findings identified in this systematic review is the absence of universally accepted instruments for evaluating medical professionalism. Previous studies have employed diverse assessment tools, including the Jefferson Scale of Empathy, Professionalism Mini-Evaluation Exercise (P-MEX), Objective Structured Clinical Examination (OSCE), reflective portfolios, and multisource feedback. Although each instrument measures different dimensions of professionalism, none comprehensively captures the multidimensional nature of professional behavior. This methodological diversity contributes to substantial heterogeneity among studies and limits direct comparison of educational outcomes. Therefore, future research should prioritize the development of standardized and validated assessment frameworks capable of evaluating professionalism across different educational settings (Epstein & Hundert, 2002; Birden et al., 2014).

Medical humanities complements the principles of medical bioethics by promoting respect for patient autonomy, beneficence, non-maleficence, and justice. Humanities-based education encourages learners to appreciate that clinical decision-making extends beyond scientific evidence and requires consideration of patients' values, beliefs, cultural

backgrounds, and social circumstances. As healthcare becomes increasingly complex, medical doctors frequently encounter ethical dilemmas that cannot be resolved solely through biomedical knowledge. Medical humanities therefore provides an important framework for developing ethical sensitivity, moral reasoning, and compassionate decision-making, ultimately supporting ethical clinical practice and strengthening public trust in the medical profession (Epstein & Hundert, 2002; Shapiro et al., 2009).

The rapid advancement of Artificial Intelligence (AI) is transforming healthcare by improving diagnostic accuracy, predictive analytics, and clinical decision support systems. Nevertheless, AI cannot replicate fundamental human qualities such as empathy, compassion, moral judgment, and the ability to establish meaningful therapeutic relationships. The findings of this review indicate that medical humanities serves as an essential complement to technological innovation by preserving the humanistic dimensions of medical practice. Accordingly, future medical education should balance digital competencies with humanistic values to ensure that technological progress enhances rather than replaces patient-centered care. Integrating AI literacy with medical humanities may enable future medical doctors to deliver healthcare that is both technologically advanced and ethically grounded (Topol, 2019; Merlo & Harter, 2025).

The evidence synthesized in this review supports the longitudinal integration of medical humanities throughout undergraduate, clinical, and continuing medical education. Educational strategies such as narrative medicine, reflective writing, ethics discussions, visual arts observation, and patient-centered reflective practice should be embedded within competency-based curricula rather than offered as isolated courses. Such integration is expected to produce medical doctors who possess a balanced combination of scientific knowledge, clinical expertise, ethical reasoning, communication skills, empathy, and social responsibility. Furthermore, curriculum developers should adopt comprehensive evaluation strategies that combine quantitative and qualitative approaches to assess both observable professional behaviors and the gradual development of professional identity. This integrated educational model is particularly relevant for preparing future physicians to navigate the ethical and humanistic challenges presented by rapidly evolving healthcare technologies (Cruess et al., 2018; Page et al., 2021).

4. Conclusions

This systematic review demonstrates that medical humanities plays a significant role in fostering medical doctor professionalism by strengthening empathy, reflective practice, ethical reasoning, communication skills, and professional identity formation. The reviewed evidence indicates that educational approaches such as narrative medicine, reflective writing, literature-based learning, visual arts, and ethics discussions contribute positively to the development of humanistic competencies that complement scientific knowledge and clinical skills. Rather than functioning as supplementary components of the curriculum, medical humanities should be regarded as an integral element of competency-based medical education.

The findings address the research objective by synthesizing current evidence regarding the contribution of medical humanities to medical doctor professionalism across various

educational settings and research designs. Although the included studies employed diverse methodologies and educational interventions, the overall evidence consistently suggests that integrating humanities into medical education supports the development of compassionate, ethically responsible, and patient-centered medical doctors. Furthermore, the findings emphasize that technological competence and humanistic competence should be developed simultaneously, particularly in the era of Artificial Intelligence, where healthcare increasingly relies on digital technologies while continuing to require empathy, ethical judgment, and meaningful doctor–patient relationships.

This review contributes to the existing literature by providing a comprehensive synthesis of current evidence, identifying commonly implemented educational approaches, and highlighting methodological variations among previous studies. The findings may serve as an evidence-based reference for curriculum developers, medical educators, and policymakers in designing educational programs that integrate medical humanities into undergraduate, postgraduate, and continuing medical education. Such integration is expected to produce future medical doctors who are clinically competent while maintaining professionalism, humanistic values, and ethical responsibility.

Nevertheless, this review has several limitations. The included studies demonstrated substantial heterogeneity in educational interventions, outcome measurements, and assessment instruments, limiting direct comparisons across studies. In addition, variations in study design and educational contexts may have influenced the reported outcomes. Future research should employ standardized professionalism assessment tools, longitudinal study designs, and multicenter investigations to evaluate the long-term impact of medical humanities on professional identity formation and clinical practice. Further systematic reviews and meta-analyses focusing on specific educational interventions may also provide stronger evidence regarding the effectiveness of individual medical humanities approaches.

Acknowledgments:

The authors would like to express their sincere gratitude to the Faculty of Medicine and the Faculty of Health Psychology, Universitas Islam Negeri Sunan Ampel Surabaya, for their academic support and institutional facilities provided throughout the preparation of this study. The authors also sincerely thank all faculty members, colleagues, and administrative staff for their valuable input, administrative assistance, and technical support during the literature search, manuscript preparation, and revision processes.

The authors used an Artificial Intelligence (AI)–based tool, ChatGPT (OpenAI), in a limited capacity to assist with language editing, grammar refinement, and improvement of the manuscript's readability. All aspects of the study, including conceptualization, methodology development, literature searching and selection, data analysis, interpretation of findings, and scientific writing, were conducted entirely by the authors.

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