

Arts-in-Medicine, with dance as a key modality

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Abstract

This study explores how Bharatanatyam-based performance session within a medical humanities program can support transformative learning and the development of professional virtues in undergraduate medical students. The focus is on empathy, moral reasoning, and person-centered care, resilience, and reflective capacity among clinically exposed fourth year student through a case study observation. The Humanitas programme at the Faculty of Medicine, University of Colombo is a two hour, arts cantered Teaching Learning Activity (TLA) delivered to fourth year medical students, using a range of art forms. Within this TLA, for the components on dance, Indian classical dance had been used. Primarily, Bharatanatyam recitals are used as main modality of dance with carefully chosen music, choreographic motifs, and 'abhinaya' (expression) are used to embody ethically and emotionally salient themes such as suffering, compassion, balance, empathy, planetary health, and relational complexity in clinical practice. Across twenty-one Humanitas sessions held during and after the COVID-19 pandemic, ten incorporated dance and six specifically utilized Bharatanatyam; after each session, students completed handwritten and online feedback forms, generating quantitative rating (e.g. on content, relevance, and artistic features) and qualitative reflections on their learning. Bharatanatyam-based Humanitas programme recitals were rate highly relevant and enjoyable, and students' reflections showed enhanced empathy, moral reasoning, person-centeredness, resilience, and reflective capacity. The alignment of strong quantitative ratings with rich qualitative themes suggests that dance offered and engaging and emotionally resonant medium for transformative learning. Embodied and aesthetic aspects of Bharatanatyam appeared to deepen students' understanding of human suffering, relational complexity, and the need for self-care clinical practices. Integrating Bharatanatyam into a structured medium humanities program can meaningfully support the development of core professional virtues in clinically exposed medium students. These findings

support the inclusion of arts-in-medicine, with dance as a central modality, as a valuable component undergraduate medical education.

Keywords: Medical Humanities, Indian Classical Dance, Bharatanatyam, Vacikabhinaya

Introduction

Role of arts and humanities in medical education

The place of arts and humanities in medicine is to foster person-centered care and to cultivate passion, empathy(Levett-Jones *et al.*, 2024), and moral reasoning in future doctors(Zhang, Pang and Duan, 2023). Integrating the arts provides a powerful medium through which such human virtues can be communicated and internalized(Dalia, Milam and Rieder, 2020), moving beyond the limitations of traditional lectures and conventional small-group, didactic discussions(David, 2024). Even within small-group formats, the deliberate use of artistic stimuli can provoke emotional, moral, or intellectual dissonance in learners(Rezaei *et al.*, 2023), which then becomes the basis for guided reflection(Wan Mohd Zohdi and Azme, 2025). This process aligns with the principles of transformative learning(Greenhill *et al.*, 2018), a recognized educational theory in medical education(Rojo *et al.*, 2023), wherein a significant shift in perspective occurs through critical reflection on disorienting experiences(Wangding *et al.*, 2024). Grounded in this theory of transformative education, the Humanitas program was conceptualized and implemented.

Overview of the Humanitas program

The Humanitas program is a unique flagship medical humanities initiative at the Faculty of Medicine, University of Colombo(Jayasinghe and Fernando, 2023). It is delivered as a two-hour session for fourth-year medical students who have prior exposure to both theoretical knowledge and clinical practice, making them particularly well positioned to appreciate complex human problems and ethical dilemmas(Appan, 2018). Each Humanitas session focusses on a theme that is relevant to moral enhancement and professional identity formation, with the aim of nurturing core virtues in medical practice, including compassion, balance in life, resilience, a sense of universality, environmental consciousness within the framework of planetary health and

personal development in managing emotions and relationships. Similar emphases on balancing professional demands and personal well-being, and their effects on intentions to stay or leave, have been observed in the Sri Lankan context among employees and dual-career families (Priyashantha and Hunnes, 2011). In Humanitas multiple forms of art and narrative are incorporated, and structured discussion is woven into the artistic material itself (Purser, 2019). Art acts as a means of creating an intellectual, moral or emotional crisis in the student and compels them to reflect on the theme or idea discussed. At the end of each Humanitas programme student feedback is obtained (Jayasinghe and Fernando, 2023).

Bharatanatyam in humanities session

In this design, art functions as the central pedagogical device, with conversation and critical reflection being deepened and intensified through engagement with artistic work—particularly dance (Mukunda *et al.*, 2019). The Humanitas program was initiated during the COVID-19 pandemic. Out of twenty-one Humanitas sessions conducted, ten included dance performances, and six of these utilized the Indian classical dance form Bharatanatyam, to explore diverse themes. At the end of each Humanitas session, a feedback questionnaire is shared with students. This instrument comprises a quantitative component, in which participant's rate aspects such as theme, content, speakers, art features, and a qualitative component, in which they elaborate on their views regarding the artworks and other elements presented in the program. Carefully selected music and choreographic material are used for thematic interpretation within the idiom of Bharatanatyam, with the focus on conveying ethically and emotionally salient ideas rather than on technical appreciation of the dance form. The audience is not expected to be formally trained in this art form; rather, they are invited to engage with the underlying concepts and experiences being communicated through the performance. To achieve this, particular theoretical constructs, aesthetic aspects, and distinctive features of Bharatanatyam are carefully employed so that key meanings can be embodied and expressed through movement and body language in a manner accessible to medical students.

Abhinaya in Bharatanatyam and its theoretical basis

‘Abhinaya’ is one of the key components of the theoretical elements in Bharatanatyam (Apparao, 1997). *Abhinaya* means the art of expression or “carrying” the meaning and emotion of a performance towards the audience in Indian classical dance and dramas (Vatsyayan, 1977). According to ancient Sanskrit treatise ‘*Natyashastra*,’ written by Sage Bharata in 2nd Century BCE: “*abhinaya is certainly the most prominent of all as that is indispensable in helping to visualize the main import of dance or a play. On examination it has found that each of the four aspect of abhinaya: the sattvika (temperament), the vacika (speech or words), the angika (gestures) and the aharya (costumes and make-up), sub serves the highest dramatic end of the development and manifestation of rasa “the aesthetic pleasure”. Music-vocal and instrumental is a powerful aid in the realization of rasa by the spectator*”(Garhwal, 2020).

He tells us how music aids the spectator’s realization of *rasa* (taste or aesthetic pleasure) and serves concentrate his attention on the representation of a play on the stage (Garhwal, 2020). In Humanities program, we use insightful verbal interpretation ‘*Vacikaabhinaya*’ to evoke the student’s reflections and emotions.

Vacikabhinaya and the aesthetics of sound and meaning

‘*Vacikabhinaya*’ is crucial because it gives audible form to poetic meaning and *rasa* (aesthetic pleasure), turning movement into a fully ‘heard-seen’ experience that is ‘*Sravya drsya kavya*.’ When used with sensitivity to text, music, and context, it becomes the bridge that carries the inner ‘*bhava*’ (refers to the subtle, authentic inner feeling or mental-emotional state that underlines and energizes all visible expression in performance) to the spectator through sound and language when used appropriately, it aligns language, prosody, and vocal nuance with gesture and inner feeling so that the audience can ‘hear’ the ‘*bhava*’ while they ‘see’ the dance or drama (Ghosh, 1975). *Vacikabhinaya* carries ‘*artha*’ (meaning) and ‘*rasa*’ through choice of words, figures of speech, and the quality of vocal delivery, supporting *angika* and *sattvikabhinaya* in evoking aesthetic pleasure in the spectator. In Sanskrit

aesthetics, ‘*sabda-rasa*’ is the relish or aesthetic pleasure of sound itself, while *artha-rasa* is the relish of meaning; in fully realized ‘*kavya*’ (literature, poetry, song) sound and sense are balanced and the further deepen through ‘*dhvani*’ (suggestion), the resulting *rasa*-experience becomes subtle, stable, and aesthetically ‘whole’ (Ratnam Rangaraj,1979; Krishna,2022). In Bharatanatyam, *vacikabhinaya* is the main channel through which ‘*dhvani*’ the realm of unsaid but deeply felt meaning enters the performance and reaches the spectator. It gives audible form to poetic meaning and *rasa*, so that the dance becomes *sravya drsya kavya*: poetry that is simultaneously heard and seen.

Dhvani, Vachikabhinaya, and emotional suggestion in Humanitas

In Sanskrit poetics, *sabda* (sound) and *artha* (meaning) together form the body of poetry, but the true soul of poetry is “*dhvani*”- the suggested sense that goes beyond literal meaning (Jha, 2018). This suggestion can arise primarily through meaning (*artha-dhvani*) or primarily through sound and verbal texture (*sabda-dhvani*), though in good poetry both are intertwined (Krishna, 2022). In Humanitas, the spoken or sung text (through *vachikabhinaya*) is handed so that literal translation is not central; instead, its suggestive emotional power- the *dhvani* is foregrounded. When text is delivered with sensitivity to prosody, pause, timbre, emphasis, and musical contour, *vachikabhinaya* activates *artha-dhvani*; hints of grief, surrender, wonder, irony, or quiet resilience that exceed the surface meaning of the words. At the same time, careful attention to sound patterns, alliteration, rhythm, and tone color activates *sabda-dhvani*: the sheer feel of the utterance which itself carries emotional suggestion, even for listeners who do not understand the language fully (Krishna, 2022). Thus, in the Humanitas Bharatanatyam performances, the song (lyrics) is chosen and rendered not just to ‘tell’ but to suggest, so that the feeling becomes more important than a word-for word semantic grasp of the lyrics.

Embodied “*visual dhvani*” and clinical resonances

According to classical aesthetics, *rasa* is ultimately realized when suggested meaning resonates with the spectator’s own latent emotional impression and is supported by visible *anubhava* (expressive signs) and *sanchari bhava* (transitory feeling) (Tharmenthira, 2024). In Bharatanatyam, *angikabhinaya* (body, gestures, facial expression) and *sattvikabhinaya* (tears, stillness, trembling, gaze) visually externalize those emotional suggestions that

vachikabhinaya has already seeded at the level of sound and meaning. When the dancer subtly varies eye focus, breath, gestures in response to particular words, the unsaid emotional layers such as regret, ambivalence, unspoken love, ethical conflict are made visible as a kind of ‘*visual dhvani*’, the body hints at more than it explicitly shows (Krishna, 2022). In Humanitas context, Bharatanatyam is used quite deliberately. The lyric may, on the surface, speak of a devotee and deity, or of separation and reunion, but *vachikabhinaya* add embodied response allows those same verses to suggest clinical loneliness, moral fatigue, grief, hope, or the tension between duty and self-care in medical life. The students do not need to understand every word, they see and feel the implied emotional layers as the dancer’s body and voice together generate a layered, “hear-seen” *dhvani* that points beyond the literal song to the unsaid inner experience.

Educational purpose and study aim

When incorporating dance specially Bharatanatyam into the medical Humanities, it facilitates **rehumanizing clinical language, enhancing cross-cultural communication, and identifying barriers to healthcare access**. By allowing them to interpret patient’s embodied, visceral responses for a narrative approach enabling them to make the patient more familiar. (Eli and Kay, 2015). Thus, the present case study aims attempts to explore how Bharatanatyam-based sessions within the Humanitas medical a TLA in the Medical humanities curriculum to facilitate transformative learning and foster key professional virtues among undergraduate medical students.

Literature Review

Medical humanities, empathy, and professionalism

Medical humanities have increasingly been integrated into undergraduate and postgraduate curricula to strengthen empathy, moral reasoning, and other core elements of professional identity in medicine Systematic and narrative reviews suggest that well-designed medical humanities interventions can positively influence empathy and related dispositional qualities in medical students and practitioner (Dalia, Milam and Rieder, 2020; Zhang, Pang and Duan, 2023; Wan Mohd Zohdi and Azme, 2025). The recent met-analysis on the “*educational efficacy of medical humanities in empathy*” reported that

humanities based courses (including literature, visual arts, reflective writing, and theatre) generally let to improvements in measures empathy scores, especially when interventions were longitudinal and explicitly linked to clinical practice (Zhang, Pang and Duan, 2023). Another integrated review on integrating humanities into medical education emphasized that humanities teaching supports not only empathy, but also ethical reasoning, narrative competence, and a richer understanding of the patient's lived experience-all core to person-centered care. Parallel work on professionalism education indicates that multi-model, value-oriented curricula are effective in promoting aspects of professionalism, while also highlighting the need for clearer theoretical grounding and robust study designs. Together, these findings justify the use of a humanities-rich program such as Humanitas to foster empathy, moral reasoning and professional identity formation in medical students(Sadeq *et al.*, 2025).

Arts-based education, reflection, and transformative learning

Within the broader humanities literature, specific attention has been paid to arts-based educational approaches as vehicles for reflection and transformative learning. Reviews of art in medical education show that visual arts interventions can improve observational skills, tolerance for ambiguity, and reflective capacity, and may contribute to empathy and cultural sensitivity (Dalia, Milam and Rieder, 2020; Rezaei *et al.*, 2023). For example, a visual-art-and-reflection curriculum for medical students demonstrated improvements in perspective-taking (a cognitive dimension of empathy) and helped learners appreciate multi viewpoints in clinical encounters (He *et al.*, 2019). In parallel, decision-making about careers and professional pathways among undergraduates in Sri Lanka also reflects significant psychological loads and indecision, highlighting the importance of structured spaces for reflection and identity formation(Maduwanthi and Priyashantha, 2018). Scoping the theoretical reviews on transformative learning in health professions education explicitly draw on Mezirow's concepts of "disorienting dilemmas," critical reflection, and perspective transformation, and document a growing use of this framework in medicine, nursing, and allied health programs (Greenhill *et al.*, 2018; Rojo *et al.*, 2023). Art-and-humanities-based teaching is frequently cited as a fertile context for such disorienting experiences (Wangding *et al.*, 2024), because engagement

with artworks can evoke emotional or moral dissonance that prompts learners to question prior assumptions (Gower *et al.*, 2026). When this dissonance is followed by structured, guided reflection, studies indicate that learners may re-examine their frames of reference and develop more nuanced, patient-centered perspectives. These intentionally uses artistic material to evoke emotional and ethical questioning and then channels this through facilitated reflection in line with transformative learning theory (Kovach *et al.*, 2023).

Dance and movement in medical and health humanities

While visual arts and literature dominate much of the medical humanities literature, there is a growing body of work advocating for dance and movement-based approaches. From a health humanities perspective, dance has been described as a mode of ‘intercorporeality’ that can reconnect learners with their own embodiment and with the embodied experiences of patients. Purser argues that dance can mitigate suffering, challenge reductive biomedical framings, and open space for imagining what it means to be human in context of illness and care (Purser, 2019). Empirical work on dance in health-professional training suggests that movement can support communication, humanization, and self-awareness. A study of humanistic training in medicine through dance reported that dance activities facilitated affective communication, promoted self-knowledge, help students feel closer to patients, and contributed to a more humanized view of care (Lisboa *et al.*, 2021). Other educational reports and reviews note that integrating creative arts and movement into health curricula offers student’s opportunities for self-expression, stress relief, and exploration of professional identity in ways that complement more cognitive, text-based humanities interventions. Such evidence underlines the legitimacy of dance as a serious pedagogical modality within medical humanities and aligns with the Humanitas program’s emphasis on dance as a central, not peripheral, learning medium (Lisboa *et al.*, 2021).

Indian classical dance, Bharatanatyam, and clinical communication

Within the dance and health literature, “Mudras in Medicine” project, an oncology education initiative built around a Bharatanatyam based performances, showed that classical Indian dance can effectively communicate narratives of cancer, suffering, healing, and hope, while

heightening clinicians' awareness of non-verbal communication and enriching their understanding of patients' emotional worlds (Bharadwaj, Nagda and Goyal, 2023; Iyengar, 2025). These findings support the use of Bharatanatyam not only as an aesthetic form but as a structured pedagogical tool within medical and health humanities education. Beyond formal medical training contexts, recent scholarship suggests that Bharatanatyam can help with emotional regulation, psychological wellbeing, and social connection, and that audiences can meaningfully engage with complex themes such as grief, hope, or moral conflict communicated through this form (Iyengar, 2024). Taken together, these studies suggest that Bharatanatyam is not only an aesthetically rich art form but also a powerful teaching tool through which difficult ethical and emotional ideas, suffering, resilience, rational conflict, and moral agency can be embodied and shared with learners, even when they have no prior dance training (Balaji, 2024; Ganesh *et al.*, 2025).

Positioning Humanities and the present study

Despite the growing body of work on medical humanities and art-based education, important gaps remain. Most empirical studies and reviews focus on visual arts, literature, or reflective writing, while dance and movement-based interventions are still relatively uncommon, particularly in undergraduate medical education (Dalia, Milam and Rieder, 2020). Evidence from Sri Lankan professionals shows how work–family conflicts and changing gender role expectations shape turnover intentions, underlining why curricular attention to balance and identity is critical (Silva and Priyashantha, 2014). Among the small number of studies that use classical Indian dance forms such as Bharatanatyam in medical education, many are descriptive case examples that highlight narrative and non-verbal communication, but do not explicitly draw on transformative learning theory or systematically evaluate learner outcomes (Bharadwaj, Nagda and Goyal, 2023). There is a strong shortage of published work from South Asia and especially from Sri Lanka on structured medical humanities programs that integrate performing arts into teaching for students who already have clinical exposure. In this context, the Humanitas program at the Faculty of Medicine, University of Colombo, and particular its Bharatanatyam based dance sessions, represents a distinctive designed to promote transformative learning and key professional virtues in fourth year medical students (Jayasinghe and Fernando, 2023). By analyzing

qualitative and quantitative feedback from multiple sessions, the present study helps address the gaps noted above and add to the literature on medical humanities, arts based pedagogy, and dance as an embodied way of fostering empathy, moral reasoning, resilience, and person-centeredness in medical education.

Methodology

Study design

This study employed a descriptive mixed-methods design focusing on program documentation and student feedback from Humanitas programme. Data for this study were drawn from twenty-one Humanitas sessions conducted for fourth year medical student at the faculty of medicine. Seven of these sessions were delivered online, while the remaining fourteen sessions from the eighth Humanitas onwards were conducted on-site. The present study only considered the feedback received for the on-site program as the online programs did not include dance recitals. Table 1. Presents an overview of all twenty one Humanitas sessions and their corresponding thematic focus. Table 2. Provides a detailed breakdown of those sessions in which dance and particular Bharatanatyam was incorporated as a central pedagogical element. For each Bharatanatyam based session, the table documents the specific songs or lyrical pieces utilized, along with their thematic significance. It summarizes these pairings by listing, for each program, (1) the name and thematic focus of the Humanitas session, (2) the song used (including language, title, and source tradition), and (3) the core lyrical meaning and its pedagogical significance. The song ranged across Sinhala, Bengali, Tamil folk, Sanskrit and Telugu repertoires such as love lyrics watched over by the moon, Arjuna's moral dilemma in Mahabharata, Rabindranath Tagore's devotional poetry, an 'ode to soil' on planetary health, romantic longing and healing, and the *Upanishad* prayer, each chose because its narrative and emotional content could be interpreted choreographically to align with the corresponding Humanitas theme. This mapping made explicit how lyrical components were used by the dancer to embody and communicate ethical, emotional, and existential dimensions highlighted in each Humanitas session.

Study analysis

The analysis focused specifically on student feedback related to the Bharatanatyam repertoires presented during these programs, examining both their educational impact and perceived relevance to medical humanities outcomes. Quantitative and qualitative data were obtained from post-session feedback questionnaires, in which students rated selected aspects of the Bharatanatyam items and provided reflections on their experiences (**Table 1 & 2**).

Quantitative responses pertaining to the Bharatanatyam components were entered into SPSS (version 26) for descriptive and inferential statistical analysis, as appropriate to the study aims which was presented in the **Table 3**. Qualitative responses were imported into ATLAS.ti (version 24) and analyzed using a thematic analysis; initial codes were generated inductively from the data and then grouped into high-order themes related to empathy, moral reasoning, person-centeredness, and professional identity.

Table 3 presents the Thematic Analysis of the Humanitas Programme. Analysis was performed using an inductive approach, coding the raw feedback from 14 distinct sessions. Codes were then categorized into the four overarching themes listed above to illustrate the impact of performing arts on medical education. The analysis follows the Braun & Clarke methodology to identify patterns in student experiences regarding the use of dance and movement providing an in-depth thematic analysis of 14 feedback sessions from the Humanitas programme. It expands upon the initial guides of Physical and Psychological aspects to explore the deeper pedagogical and clinical implications of dance in medical education.

Name of the Program	Theme of the program
Sea life beyond the ship	Life of fishermen by the sea after the Xpress pearl ship disaster
Does the kaduwa hurt <i>*Kaduwa- sward</i>	Adjusting to a university education in English and linguicism
Together in this world	A glimpse in to the world of animal welfare
Their hearts under this needle	Unfolding the lives of garment factory employees

Imagine all the people	Being peaceful in troubled times
I am Love	The LGBTQ community in Sri Lanka
Cancer & Us	Experiences of family members of cancer patients
Life in Dance	Understanding human emotions and physical intelligence through dance
Members Only	Managing heartbreak
World of fathers	Fatherhood
Teachers: Divine? Difficult? Diminishing?	The changing role of the teacher
The nectar of life	The importance of friendship in life
Universal Man	Philosophy of Rabindranath Tagore
Life, like a river	Stoic philosophy
The Pale blue dot	Planetary health
Tight rope	Work life Balance
Our Muslim community in Sri Lanka	Cultural identity series- Muslim community in Sri Lanka
Members only: 2	Magic of love, pain of heartbreak, path to healing
Tree of success	What is success?
This beautiful life	Resilience and reflection
The final court	Integrity

Table 2: Names of twenty-one Humanitas and themes

Name of the Program	Song	Type of musical component and interpretation
Life in Dance (Physical & psychological effect of dance on the dancer)	Sinhala song - “ <i>Sanda horen bala</i> ”	This translates to the moon, secretly watching. The song’s central theme is a tender, intimate love story, with the lyrics suggesting that the moon is a silent spectator to the lovers’ sweet discussion and moments of affection.
The nectar of life (The importance of friendship in life)	Sanskrit and Telugu song- Verses and lyrics attributed from a Tamil Composition, <i>Sri Krishna Vaibhavam</i>	It’s about <i>Kurukshetra</i> war in the epic of Mahabharata. Seeing Arjun’s dilemma, Krishna reminds Arjun that as a Kshatriya, his dharma is to fight to uphold righteousness against unrighteousness and turning away from this duty is spiritual weakness.
Universal Man (Rabindranath Tagore and his universality)	A Bengali song “ <i>Sajani</i> ”	Raindrop Sangeet by Tagore, expressing divine love, devotion, and spirituality yearning, where Radha calls to her Krishna.
The Pale blue dot (Planetary health)	A Tamil language folk song “ <i>Kaathuvaakula</i> ”	An “Ode to soil-conscious planet, save soil.” The lyrics aims to capture the vibrant rural spirit and highlight the vital connection between human life and the earth.
Relationships (Magic of love, pain of heartbreak, path to healing)	Sinhala song - “ <i>Praathihari</i> ”,	Songs’ lyrics focuses on themes of beauty, attraction, and romantic anticipation. “ <i>Prathihari</i> ” was interpreted as miracle or wonder. The lyrics vividly describes the admiration of beauty, romantic longing, and anticipation and vigilance.

The final court (Integrity)	Sanskrit Shloka followed by song in Hindi- “Asathoma Sathgamaya...”	lyrics explains the profound spiritual message of seeing truth, light, and immortality, representing a universal prayer form the Upanishads for guidance from illusion to reality, darkness to wisdom, and mortality to eternal liberation.
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Table 2: Humanitas session themes, selected songs, and their lyrical meaning used as the basis for Bharatanatyam interpretation

Results and Discussion

Results

Across the fourteen on-site Humanitas sessions that includes Bharatanatyam or other dance-based components, students rated both the relevance of the art/dance and their enjoyment of it high level. As shown in **Table 3**, the mean rating for art/dance relevance across was 85.7% and for enjoyment was 91.4% based on 1,430 questionnaire responses. These high scores suggest that students perceived the dance components as both educationally meaningful and intrinsically engaging within the medical humanities TLA. Quantitative analysis also highlighted four key qualitative identifiers (emotional conveyed, spiritual connection, musical connection, and overall enjoyment). Qualitative analysis showed that students experienced dance as medium for emotional processing, spiritual connection, and mental relaxation, indicating that Bharatanatyam created an aesthetic space for empathy training and existential reflection.

Program	Name	Art/Dance Relevance (%)	Enjoyment (%)	Sample Size (N)
H-08	Dance in Life	92.20%	94.30%	141
H-09	Members only	88.50%	89.70%	107
H-10	World of fathers	94.00%	96.20%	151
H-11	Teachers' Humanitas	94.00%	96.20%	133
H-12	Friends	98.00%	94.50%	203
H-13	Universal Man	59.70%	100.00%	67

H-14	Resilience/Stoicism	91.50%	96.60%	177
H-15	Planetary Health	89.20%	100.00%	81
H-16	Tightrope (Balance)	85.50%	88.40%	69
H-17	Our Muslim Community	84.80%	90.20%	92
H-18	Relationships	75.30%	83.10%	77
H-19	Compassion	87.10%	90.50%	63
H-20	This Beautiful Life	100.00%	100.00%	5
H-21	The Final Court	64.10%	64.10%	64
Average				Total
Relevance		Enjoyment		
85.70%		91.40%		
				1,430

Table 3: Student rating of art/dance relevance and enjoyment for Bharatanatyam-inclusive Humanities sessions

Thematic analysis (**Table 4**) identified four core themes- emotional catharsis and self-regulation, relational humanism, embodied empathy, and professional identity and balance-demonstrating that the performances supported stress relief, humanized teacher-student relationships, deepened understanding of others, and highlighted the need for life-work balance in medical practice.

Core Theme	Sub-Themes	Primary Sessions	Illustrative Qualitative Data
1. Emotional Catharsis & Self-Regulation	- Stress alleviation - Mind-body relaxation - Freedom of expression	Humanitas 08, 14, 15, 20	"A great way to vent out the stress we have been carrying... it felt like a heavy weight was lifted from my mind."
2. Relational Humanism	- De-hierarchization - Peer bonding	Humanitas 09, 11 (Teachers), 19	"Seeing our lecturers and friends in this light made the

	- Breaking the 'Medical Shell'		environment feel safer... it humanized the people we usually only see as 'stiff' professionals."
3. Embodied Empathy	<ul style="list-style-type: none"> - Non-verbal communication - Understanding the 'Other' - Emotional dexterity 	Humanitas 10 (Fatherhood), 13 (Tagore), 21	"I never thought movement could explain so much about life. It helped me realize that everyone has a story behind their face."
4. Professional Identity & Balance	<ul style="list-style-type: none"> -Holistic growth -Ethical sensitivity -Resilience building 	Humanitas 12, 16 (Tightrope), 18	"The dance made the concept of 'balance' very physical and real. It's a lesson for our future life as doctors where we must balance everything."

Table 4: Thematic analysis extracted to core themes

A further bio-psychological lens (**Table 5**) indicated that physical aspects of performance enhanced students' observational and non-verbal communication skills, while psychological aspects provided safe emotional ventilation and resilience building, aligning with key outcomes of medical humanities TLA curriculum. The analysis demonstrates that the 'Physical' excellence of the performance serves as a 'Cognitive Hook,' lowering the student's defensive barriers and allowing for 'Psychological' and 'Spiritual' engagement. For the medical student, dance is not merely an extracurricular

activity; it is a laboratory for non-verbal communication, emotional regulation, and humanistic empathy.

Core Theme	Conceptual & Pedagogical Dimension	Elaborated Analysis & Illustrative Data
Physical Aspects	Kinesthetic Synchrony & Expressive Literacy	Students emphasized 'eye-catching' coordination and 'well-expressed' body language. In medical training, this transcends entertainment; it fosters 'Clinical Observation'—the ability to read subtle physical cues in patients. Feedback: 'The synchronization was mesmerizing; it showed how much can be said without words.'
Psychological Aspects	Emotional Ventilation & Resilience Building	The 'romantic,' 'emotional,' and 'relaxing' nature of the dance acted as a 'Safe Space' for catharsis. It allowed students to process personal and academic stress through a medium of beauty rather than burden. Feedback: 'It

		was a mind-relaxing experience that helped me forget the heaviness of the wards for a moment.'
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Table 5: The Bio-Psychological of performance

Discussion

Taken together, the quantitative and qualitative findings indicate that Bharatanatyam-based components of the Humanitas program were both well accepted and pedagogically impactful, directly supporting the study’s aim of facilitating transformative learning and cultivating professional virtues in medical students. High ratings for relevance (mean =85.7) and enjoyment (mean = 91.4) suggest that dance functions as an engaging entry point into complex ethical and emotional themes, while student narratives show that embodied, non-verbal expression helped them rehearse empathy, moral reasoning, and self-regulation in a low-risk environment. By linking aesthetic experience with reflection on clinical life, the Bharatanatyam sessions appear to contribute to person-centeredness, resilience, and reflective capacity, reinforcing the value of arts-in-medicine as a core, rather than peripheral, element of undergraduate medical education.

Theme 1: Emotional catharsis and self-regulation

This theme emerged particularly strongly from sessions focused on stress alleviation and mind-body relaxation (**Table 4: Humanitas H-08, H-14, H-15, and H-20**). Students described experiences of emotional release – “a great way to vent out the stress we have been carrying”-alongside testimonies of substantial psychological relief, with one participants noting “it felt like a heavy weight was lifted from my mind.” The embodied, non-verbal nature of the dance allowed students to access and express emotions that might otherwise remain unexamined, supporting the development of emotional regulation capacities essential to sustainable clinical practice. These findings carry profound implications for understanding professional wellbeing and workplace sustainability in demanding fields. The emotional ventilation spaces created through Bharatanatyam performances appear to serve a dual function: immediate psychological relief and protection against long-term professional attrition. Research in organizational psychology demonstrates a

critical relationship between emotional wellbeing and professional retention. Given evidence that dissatisfaction and unmanaged strain can increase employees' desire to leave organizations, such emotional ventilation spaces may have downstream implications for retention within demanding professions (Priyashantha and Hunnes, 2011).

This connection is particularly salient for medical education, where burnout and attrition represent significant challenges to workplace stability and quality of care. For medical students entering a high-stress clinical environment, the Humanitas session appears to function as a protective factor, offering a structured, aesthetically grounded opportunity to process and metabolize occupational and academic pressure before they accumulate into burnout or attrition. By providing students with a culturally sophisticated, non-clinical medium for psychological relief—one rooted in classical Indian aesthetics rather than clinical discourse—the program helps foster emotional resilience and sustainable engagement with medical practice from the earliest stages of clinical exposure. The cathartic dimension of Bharatanatyam thus emerges not as mere entertainment or stress relief, but as a preventive intervention with potential implications for the retention and wellbeing of future physicians within the demanding profession of medicine.

Theme 2: Relational humanism and De-hierarchization

A second major theme concerned the ways in which Bharatanatyam performances humanized classroom relationships and disrupted the traditional hierarchies embedded in medical education (Table 04- Humanitas 09, 11 (Teachers), 19). Students in sessions H-09 (Members Only), H-11 (Teachers Humanitas), and H-19 (Compassion) reported, seeing faculty and peers in a new light. One student reflected, "Seeing our lecturers and friends in this light made the environment feel safer, it humanized the people we usually only see as stiff professors." Compassion) reported perception from role-defined professional to embodied human, appears to support the cultivation of relational humanism and the "breaking of the medical shell" that the program aims to foster. When students encounter teachers and colleagues as complex, feeling beings rather than authority figures, the foundation is laid for more authentic, compassionate peer-learning and mentoring relationships throughout their careers.

The aesthetic space created by Bharatanatyam enables a temporary suspension of hierarchical roles, allowing faculty and students to meet as embodied humans united in shared emotional and existential reflection. This de-hierarchization has particular relevance for fostering collaborative, person-centered clinical teams in future practice, where communication across ranks and mutual recognition of humanity are essential to both patient care and professional satisfaction. By experiencing their educators as vulnerable, emotionally expressive human beings—rather than merely as knowledge authorities—students develop the relational capacity to see patients not as cases or diagnoses, but as people with their own embodied, emotional realities.

Theme 3: Embodied empathy and non-verbal communication

The third core theme encompassed non-verbal communication and what students described as "understanding the other." (**Table 04- Humanitas 10 (Fatherhood), 13 (Tagore), 21**). Particularly in sessions exploring fatherhood (H-10), philosophical universality through Tagore (H-13), and integrity (H-21), students emphasized how movement and facial expression conveyed human meaning and lived experience in ways that words alone could not. One student observed, "I never thought movement could explain so much about life. It helped me realize that everyone has a story behind their face." This observation aligns with the clinical significance of non-verbal literacy: the ability to read subtle physical and affective cues in patients. By engaging with the sophisticated, layered non-verbal communication embedded in Bharatanatyam abhinaya (expression), students were simultaneously building empathic understanding and honing observational skills that directly translate to clinical encounter. The performers' use of hand gestures (*hastas*), facial expressions, and body movement to convey complex emotional states i.e. grief, compassion, ethical conflict, hope provided students with a living laboratory for understanding the embodied dimensions of human experience. This embodied understanding of others is foundational to the person-centred care and clinical empathy that medical education seeks to cultivate. Through sustained engagement with how dancers use their bodies to communicate invisible emotional and moral truths, students develop a somatic competence in reading patients' non-verbal cues-tremors, hesitations, facial expressions—that signal distress, fear, or unspoken concerns.

Theme 4: Professional identity and life-work balance

The final major theme addressed professional identity formation and the recognition of life-work balance as central to sustainable medical practice (**Table 04- Humanitas 12, 16 (Tightrope), 18**). This theme emerged particularly in sessions on friendship and relational continuity (H-12), the "Tightrope" work-life balance session (H-16), and relationship themes (H-18). Students noted, "The dance made the concept of balance very physical and real. It's a lesson for our future life as doctors where we must balance everything. These reflections are deeply significant when contextualized within the Sri Lankan professional and social landscape, where competing demands and evolving role expectations shape professional trajectories in profound ways. The insights from this study resonate with broader research on professional sustainability in South Asia.

The above findings echo broader Sri Lankan findings on how work-family tensions and shifting gender roles shape turnover intentions among professionals, reinforcing the value of early curricular engagement with balance and identity (Silva and Priyashantha, 2014). By introducing the concept of work-life balance through embodied, aesthetic means during undergraduate medical education, the programs i.e. Humanitas, positions an essential dimension of professional identity not as a peripheral wellness concern, a central aspect of clinical practice and professional sustainability.

By making the concept of professional-personal boundary negotiation embodied, visible, and aesthetically explored during medical education, the Humanitas program helps students internalize balance not as an abstract ideal but as a visceral, lived necessity. The "Tightrope" session appears to function as an anticipatory space where students can imaginatively rehearse the tensions they will face as clinicians, developing awareness and potentially more deliberate strategies for identity preservation and self-care. Early engagement with this theme in the undergraduate curriculum may have protective effects against future burnout and attrition, equipping students with both intellectual awareness and somatic understanding of the need for professional-personal integration. For female medical students especially, who often navigate particularly acute role tensions between professional and family demands, this early cultivation of identity awareness and balance-seeking may prove essential for long-term career retention and wellbeing.

Bio-Psychological integration: physical and psychological dimensions

A further bio-psychological lens (**Table 5**) indicated that physical aspects of performance enhanced students' observational and non-verbal communication skills, while psychological aspects provided safe emotional ventilation and resilience building, aligning with key outcomes of the medical humanities teaching and learning activity. The analysis demonstrates that the physical excellence of the performance serves as a cognitive hook, lowering students' defensive barriers and allowing for psychological and spiritual engagement. Students' emphasized eye-catching coordination and well-expressed body language, noting that "the synchronization was mesmerizing; it showed how much can be said without words."

This kinesthetic synchrony fostered what might be termed clinical observation the ability to read subtle physical and affective cues essential to patient care. Simultaneously, the psychological dimensions of the performances created safe spaces for emotional catharsis. As one student reflected, "It was a mind-relaxing experience that helped me forget the heaviness of the wards for a moment." The romantic, emotional, and aesthetically refined nature of the dance acted as a buffer against the cognitive and emotional demands of clinical training, allowing students to process stress through a medium of beauty rather than burden. For the medical student, dance is not merely an extracurricular activity or optional enrichment- it is a laboratory for non-verbal communication, emotional regulation, and humanistic empathy.

Theoretical implications: transformative learning through embodied aesthetics

The above mentioned four interrelated themes support the study's theoretical framework of transformative learning. The Bharatanatyam sessions appear to function through several mechanisms that align with principles of transformative education: first, they create "disorienting dilemmas" by presenting ethical and existential questions through embodied, aesthetic means rather than didactic instruction; second, they invite critical reflection on these themes through the guidance of structured discussion; and third, they enable perspective transformation by making visible and felt the interconnections between aesthetic beauty, human vulnerability, ethical responsibility, and professional identity (**Table 6**) The use of dhvani

(suggested, unsaid meaning) in Sanskrit poetics and Bharatanatyam wherein the deepest meanings are conveyed through implication, tone, and gesture rather than explicit statement, appears particularly well-suited to the particular transformative work, as it invites students to interpret and integrate meaning in ways that are personally and clinically relevant.

Identifier	Deep Analysis & Clinical Significance
# Emotions Conveyed	Students identified a spectrum of emotions (grief, joy, justice). This functions as 'Empathy Training' via mirror neurons, allowing students to experience complex human emotions in a controlled, aesthetic environment.
# Spiritual Connection	Feedback regarding 'inner peace' and 'soulful connection' (e.g., Tagore session) points to 'Existential Humanism.' It reminds future doctors that patients are more than biological cases; they are individuals with spiritual depths.
# Musical Connection	Rhythmic Entrainment: The synergy between music and dance facilitated a 'Flow State.' This is vital for mental health, providing a cognitive break from the high-load analytical thinking of medical school.
# Overall Enjoyment	The high level of enjoyment suggests that the 'Humanitas' program acts as a buffer against compassion fatigue and burnout, fostering a more positive outlook on the medical profession.

Table 6: Deep Analysis of Qualitative Identifiers

Conclusion

The alignment of strong quantitative ratings with rich qualitative themes suggests that dance offered an engaging and emotionally resonant medium for transformative learning. Embodied and aesthetic aspects of Bharatanatyam appeared to deepen students' understanding of human suffering, relational complexity, and the need for self-care in clinical practice. These findings support the inclusion of arts-in-medicine, with dance as a central modality, as a valuable and theoretically grounded component of undergraduate medical education, one that directly supports the cultivation of empathy, moral reasoning, professional identity, and resilience in future physicians. The value of the Humanitas program as a TLA for medical humanities is enhanced using Bharatanatyam.

References

- Appan, D.P. (2018) "What Dance taught a Doctor: A resident's perspective on the role of humanities in psychiatry training," *MedEdPublish*, 7, p. 185. Available at: <https://doi.org/10.15694/mep.2018.0000185.1>.
- Apparao, P.S.R. (1997) "Abhinaya Darpanam by Nandikeswara."- English Translation. 1st ed. Vidyanagar, Hyderabad: A Natyamala Publications.
- Balaji, K.V. (2024) "Reappraising Bharatanatyam for physical, psychological and psychosocial benefits." Available at: <https://www.narthaki.com/info/articles/art541.html> (Accessed: July 29, 2025).
- Bharadwaj, M., Nagda, D. and Goyal, L. (2023) "Mudras in Medicine: A Role for Dance in Appreciating Nonverbal Communication in the Clinical Encounter," *Journal of Clinical Oncology*, 41(1), pp. 128–131. Available at: <https://doi.org/10.1200/JCO.22.00657>.
- Dalia, Y., Milam, E.C. and Rieder, E.A. (2020) "Art in Medical Education: A Review," *Journal of Graduate Medical Education*, 12(6), pp. 686–695. Available at: <https://doi.org/10.4300/JGME-D-20-00093.1>.
- David, B.G. (2024) "The Importance of Empathy in Medical Practice through Artistic Expression," *EEJPH Publications*, Volume 6(Issue 1 2024).
- Eli, K. and Kay, R. (2015) "Choreographing lived experience: dance, feelings and the storytelling body," *Medical Humanities*, 41(1), pp. 63–68. Available at: <https://doi.org/10.1136/medhum-2014-010602>.

Ganesh, V. et al. (2025) "A Qualitative Interview Study to Illuminate the Lived Emotional, Physical, and Spiritual Impacts of Experienced Bharatanatyam Dancers," *Global Advances in Integrative Medicine and Health*, 14, p. 27536130251382235. Available at: <https://doi.org/10.1177/27536130251382235>.

Garhwal, S. (2020) "Bharata's Natyashastra : A Comprehensive Study," *International Journal Creative Research Thoughts*, Volume 8(4). Available at: <https://ijcrt.org/papers/IJCRT2004034.pdf>.

Ghosh, Dr.M. (1975) *Nandikeshvara Abhinayadarpanam*. 3rd ed. Calcutta: Manisha Granthalaya.

Gower, S. et al. (2026) "Reflective practice: an integrative review of collaborations between nursing and creative arts students," *Teaching and Learning in Nursing*, 21(1), pp. 80–90. Available at: <https://doi.org/10.1016/j.teln.2025.07.024>.

Greenhill, J. et al. (2018) "Transformative Learning in Medical Education: Context Matters, a South Australian Longitudinal Study," *Journal of Transformative Education*, 16(1), pp. 58–75. Available at: <https://doi.org/10.1177/1541344617715710>.

He, B. et al. (2019) "The art of observation: a qualitative analysis of medical students' experiences," *BMC Medical Education*, 19(1), p. 234. Available at: <https://doi.org/10.1186/s12909-019-1671-2>.

Iyengar, S. (2024) "Indian dance (Bharatanatyam) to ease social loneliness and isolation in older adults," *Critical Public Health*, 34(1), pp. 1–13. Available at: <https://doi.org/10.1080/09581596.2024.2384938>.

Iyengar, S. (2025) "The Use of Hand Gestures (Hastas) in Bharatanatyam for Creative Aging," *Journal of Medical Humanities*, 46(2), pp. 235–242. Available at: <https://doi.org/10.1007/s10912-024-09861-1>.

Jayasinghe, S. and Fernando, S. (2023) "Developments in medical humanities in Sri Lanka: A call for regional and global action," *The Asia Pacific Scholar*, 8(4), pp. 1–4. Available at: <https://doi.org/10.29060/TAPS.2023-8-4/GP2878>.

Jha, G. (2018) *काव्यप्रकाश- Kavya Prakasha of Mammata with English Translation (Revised-Chapters I to X, With Index & Appendices)*. Varanasi: Bharatiya Vidya Prakashan.

Kovach, N. et al. (2023) "Impact of art and reflective practice on medical education in the emergency department," *Emergency Medicine Australasia*, 35(3), pp. 450–455. Available at: <https://doi.org/10.1111/1742-6723.14147>.

Krishna, P. (2022) “DHVANI AND DANCE- CAN THERE BE A RELATIONSHIP?,” *ShodhKosh: Journal of Visual and Performing Arts*, 3(2), pp. 236–243. Available at: <https://doi.org/10.29121/shodhkosh.v3.i2.2022.168>.

Levett-Jones, T. et al. (2024) “Use and effectiveness of the arts for enhancing healthcare students’ empathy skills: A mixed methods systematic review,” *Nurse Education Today*, 138, p. 106185. Available at: <https://doi.org/10.1016/j.nedt.2024.106185>.

Lisboa, A.B. et al. (2021) “Humanistic training in Medicine through dancing in the hospital: students’ perceptions,” *Revista Brasileira de Educação Médica*, 45(1), p. e015. Available at: <https://doi.org/10.1590/1981-5271v45.1-20200034.ing>.

Maduwanthi, M.N. and Priyashantha, K.G. (2018) “Determinants of career indecision: with special reference to management undergraduates in Sri Lankan state universities.” Available at: <https://doi.org/10.13140/RG.2.2.36370.12482>.

Mukunda, N. et al. (2019) “Visual art instruction in medical education: a narrative review,” *Medical Education Online*, 24(1), p. 1558657. Available at: <https://doi.org/10.1080/10872981.2018.1558657>.

Priyashantha, K.G. and Hunnes, A. (2011) “The Impact of Job Satisfaction on Perceived Desirability of Leaving: A Study in Cable Manufacturing Organizations in Sri Lanka.” Rochester, NY: Social Science Research Network. Available at: <https://doi.org/10.2139/ssrn.3984342>.

Purser, A. (2019) “Dancing Intercorporeality: A Health Humanities Perspective on Dance as a Healing Art,” *Journal of Medical Humanities*, 40(2), pp. 253–263. Available at: <https://doi.org/10.1007/s10912-017-9502-0>.

Ratnam Rangaraj, A. (1979) *Natya Brahman*. 1st ed. Chennai: Saher Publication No.7.

Rezaei, S. et al. (2023) “Using Visual Arts Education and Reflective Practice to Increase Empathy and Perspective Taking in Medical Students,” *MedEdPORTAL*, p. 11346. Available at: https://doi.org/10.15766/mep_2374-8265.11346.

Rojo, J. et al. (2023) “Applying Mezirow’s Transformative Learning Theory into nursing and health professional education programs: A scoping review,” *Teaching and Learning in Nursing*, 18(1), pp. 63–71. Available at: <https://doi.org/10.1016/j.teln.2022.09.013>.

Sadeq, A. et al. (2025) “Medical professionalism education: a systematic review of interventions, outcomes, and sustainability,” *Frontiers in Medicine*, 12, p. 1522411. Available at: <https://doi.org/10.3389/fmed.2025.1522411>.

Silva, M. and Priyashantha, K.G. (2014) “CHANGING GENDER STEREOTYPES: THE IMPACT OF CONFLICTS IN DUAL CAREER FAMILIES ON TURNOVER INTENTION (With special reference to female professionals in Sri Lanka),” Vol. 3.

Tharmenthira, S. (2024) “Aesthetics and Choreography of Bharatanatyam,” *Journal of Research in Music*, 2(2), pp. 29–40. Available at: <https://doi.org/10.4038/jrm.v2i2.29>.

Vatsyayan, K. (1977) *Classical Indian Dance in Literature and Arts*. 2nd ed. New Delhi: Sangeet Natak Academy.

Wan Mohd Zohdi, W.N. and Azme, N. (2025) “Integrating Humanities into Medical Education,” *International Journal of Social Science Research*, 13(1), p. 111. Available at: <https://doi.org/10.5296/ijssr.v13i1.22545>.

Wangding, S. et al. (2024) “Disorienting or Transforming? Using the Arts and Humanities to Foster Social Advocacy,” *Perspectives on Medical Education*, 13(1), pp. 192–200. Available at: <https://doi.org/10.5334/pme.1213>.

Zhang, X., Pang, H. and Duan, Z. (2023) “Educational efficacy of medical humanities in empathy of medical students and healthcare professionals: a systematic review and meta-analysis,” *BMC Medical Education*, 23(1), p. 925. Available at: <https://doi.org/10.1186/s12909-023-04932-8>.