

The Impact of Art in Medicine Training and Its Effectiveness on Professionalism and Interpersonal Skills: A Prospective Study

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Introduction: Internal Medicine residents in The United States of America (USA) need to demonstrate competency in the Accreditation Council for Graduate Medical Education (ACGME) core areas to meet training requirements. Two of these core competencies are professionalism and interpersonal/communication skills. Medical humanities can positively influence trainee development by cultivating these skills. There is limited literature on the use of art-based programs to enhance communication and professionalism skills among residents aside from the original FRAME workshop. We have designed a six-part series called “Using Art for Professionalism and Communication Skills in Medical Education” (UAPCMEd) that implements visual arts training strategies to teach residents these core skills as part of their training program in Internal Medicine. The aim of this study is to assess whether such a program can effectively enhance these core competencies.

Methods: A prospective study was conducted in a single academic institution, involving six-monthly, one-hour virtual visual art focused group discussion sessions during the academic year 2022–2023. The program was co-designed and run by a physician leader and an educator at the Philadelphia Museum of Art. After each session, survey data collected from Internal Medicine residents were analyzed using a mixed-methods approach.

Results: Thirty-two Internal Medicine residents volunteered to participate. 100%, 97%, and 95% of respondents were able to consider new points of view, felt that the program gave them time and tools for reflection, and agreed that the workshop provided a pause and respite from medical care, respectively. Furthermore, 81% responded that it helped them communicate more effectively, and 74% stated that it helped them reconnect with their role as medical providers.

Conclusion: Forming well-rounded physicians who can reflect on their biases, empathize, and communicate effectively is the key to dealing with modern medical challenges. The UAPCMEd workshop positively influenced residents’ professionalism and interpersonal communication skills.

Keywords: medical humanities, communication, interpersonal skills, resident physicians, core competencies

Introduction

Internal Medicine residency training in The United States of America (USA) requires meeting six core competencies as determined by the Accreditation Council for Graduate Medical Education (ACGME): patient care, medical knowledge, practice-based learning and improvement, systems-based practice, professionalism, and interpersonal/communication skills.¹ The ACGME core competency of professionalism involves compassion, integrity, and respect for others and their autonomy, accountability, sensitivity, and responsiveness to a diverse patient population. The core competency of interpersonal and communication skills comprises effective communication with patients, families, the public, and other healthcare professionals while a team member, leader, or consultant. Moreover, communication refers to what doctors say, while interpersonal skills refer to the emotional connotation of how, when, and to whom it is said.²

The medical humanities holistically engage the worlds of art, humanities, and social sciences in medical education.³ Visual thinking strategies are a well-known method of teaching critical thinking and communication skills by interpreting and describing museum art pieces. Its implementation during medical and nursing education has significantly increased interpersonal and communication skills.⁴ The medical humanities create opportunities for self-reflection, empathetic observation, and communication, all essential to the practice of medicine.^{5,6} For example, a literature review showed that arts-based interventions in undergraduate medical education potentiated observation skills and, thus, diagnostic skills.^{7,8} Despite the integration of medical humanities during medical students training, there is lack of knowledge regarding art-based programs tailored to enhance communication and professionalism in residency training.

It is during residency that habits that contribute to professional behaviors are formed and where communication is most crucial. Challenges such as limited time during post-graduate training have been cited as limitations to implementing programs related to the medical humanities. However, these much-needed practices of self-reflection and self-knowledge are critical components for forming a professional identity. For instance, a systematic review and meta-synthesis dedicated to maximizing the power of the arts in medical education concluded that it promoted creative thinking and the ability to discover new meanings, which could be crucial for enhanced medical practice, especially during group learning activities.⁹ A strong professional identity composed of frequent self-reflection, enhancement of empathy, and desire to communicate effectively with others can be cultivated with the help of a medical humanities curriculum.¹⁰

The “Using Art for Professionalism and Communication Skills in Medical Education” (UAPCMEEd) workshop is a virtual curriculum that addresses the ACGME core competencies of professionalism and interpersonal communication. Our study aims to analyze the impact of this workshop on the ACGME core competencies of professionalism and interpersonal communication from the perspective of the residents attending the workshop through the administration of detailed questionnaires to understand their perceptions. The uniqueness of this project relies on the fact that it is the first time -to our knowledge- that a virtual art workshop is conducted during residency training to aid in the development of two core competencies required for graduation. Much effort and time are allocated to the intellectual growth and development of “hard skills”. In contrast, professionalism and communication are often not formally taught despite having equal relevance to ACGME core competencies. We aspire to transmit the importance of allotting dedicated time and space while training medical residents to practice medicine competently in a changing society.

Methods

Setting and Participants

Participation was offered to all one hundred and six residents of the Internal Medicine Program at Jefferson Einstein Hospital in the USA of which thirty-two volunteered to participate. Inclusion criteria of this study population involved attending sessions during their protected educational conference hours throughout the 2022–2023 academic year and answering a virtual questionnaire after each session. All residents were provided with information regarding the study and requirements of participation, including time commitment, commitment to complete surveys towards the research study and were informed of their responses being anonymized.

Study Design

This is primarily a descriptive/qualitative study. A convergent parallel mixed-methods approach was used, where quantitative and qualitative data was collected simultaneously via virtual questionnaires and analyzed and described separately.

Interventions

Visual thinking strategies are a well-known method of teaching critical thinking and communication skills by interpreting and describing art pieces. Keeping this in mind, a six-part series described in the manuscript, that implemented visual arts training strategies was co-designed and hosted by a physician leader and an educator at the Philadelphia Museum of Art. The series comprised six one-hour sessions on a video communication platform conducted once a month. Each session focused on selected artwork in the museum’s collection that prompted discussion.

Specifically, the first three sessions concentrated on the groundwork for careful observation and addressed objectives 1–3, aligning with the core competency of interpersonal/communication skills, as seen in [Table 1](#). The first session, called “Elaboration Game”, aimed to improve careful observation (objective 1) by prompting participants to elaborate on sections of an artwork that were projected separately from the rest, successively building on each other’s observations to develop a complete description of the piece. This exercise also strengthened students’ ability to practice careful evidence-based reasoning by making sustained observations before jumping into judgement. Subsequently was the “Perception Test” that aimed to recognize the difference between seeing and interpreting (objective 2) by showing a piece of art for only thirty seconds, followed by a discussion about analyzing the details observed. The challenge was not only to describe an image in detail but also to organize descriptions logically. The third session, “Describe and Draw Game”, intended to improve communication of what is observed (objective 3) by pairing participants and having one describe a piece of art for the partner to draw based only on the description given before the roles were reversed.

The last three sessions continued to elaborate on careful observation and verbal communication. These sessions addressed objectives 4–6, which align with the core competency of professionalism, also found in [Table 1](#). The fourth session consisted of the “Ten Times Two Exercise”, in which participants looked at artworks for thirty seconds and then tried to develop ten words or phrases related to their observation before discussing them with others—the discussion aimed to reduce intrinsic bias and improve cultural sensitivity (objective 4). The “Step Inside Exercise” facilitated the reflection on professional identity formation (objective 5) by addressing three questions exploring the perspective of a person or object featured in the selected artwork. The sixth and final session was the “Personal Responses Tour”, in which participants picked a piece of artwork and explained its connection to a particular challenge in their clinical practice, aiming to enhance self-reflection as it relates to the practice of medicine (objective 6). For example, one of the artworks used was “The Life Line” by Winslow Homer from 1884 ([Figure 1](#)) and one of the prompts was “Find an artwork that speaks to a clerkship experience you have had with death and dying. Reflect on that experience as it relates to your chosen artwork”.

Survey Design

A survey was designed to measure the ACGME core competencies of professionalism, characterized by sensitivity and responsiveness to a diverse patient population together with compassion, integrity and respect for others, and communication/interpersonal skills, which is the ability to communicate effectively with patients and health professionals as represented in [Table 2](#). Three researchers evaluated face validity by assessing the survey for layout, readability and clarity.

Analysis of the Outcomes

Upon completion of the series and collection of all survey responses, the results were reported in a descriptive manner and in terms of percentages of participants who answered either “yes” or “no” to the questions.

Table 1 Project Objectives Aligned With ACGME Core Competency Aimed to Measure

Objectives	ACGME Core Competencies
1. Improve careful observation	Interpersonal/communication skills
2. Recognize the difference between seeing and interpreting	Interpersonal/communication skills
3. Improve communication of what is observed	Interpersonal/communication skills
4. Reduce intrinsic bias and improve cultural sensitivity	Professionalism
5. Reflect on professional identity formation	Professionalism
6. Enhance self-reflection as it relates to the practice of medicine	Professionalism

Abbreviation: ACGME, Accreditation Council for Graduate Medical Education.

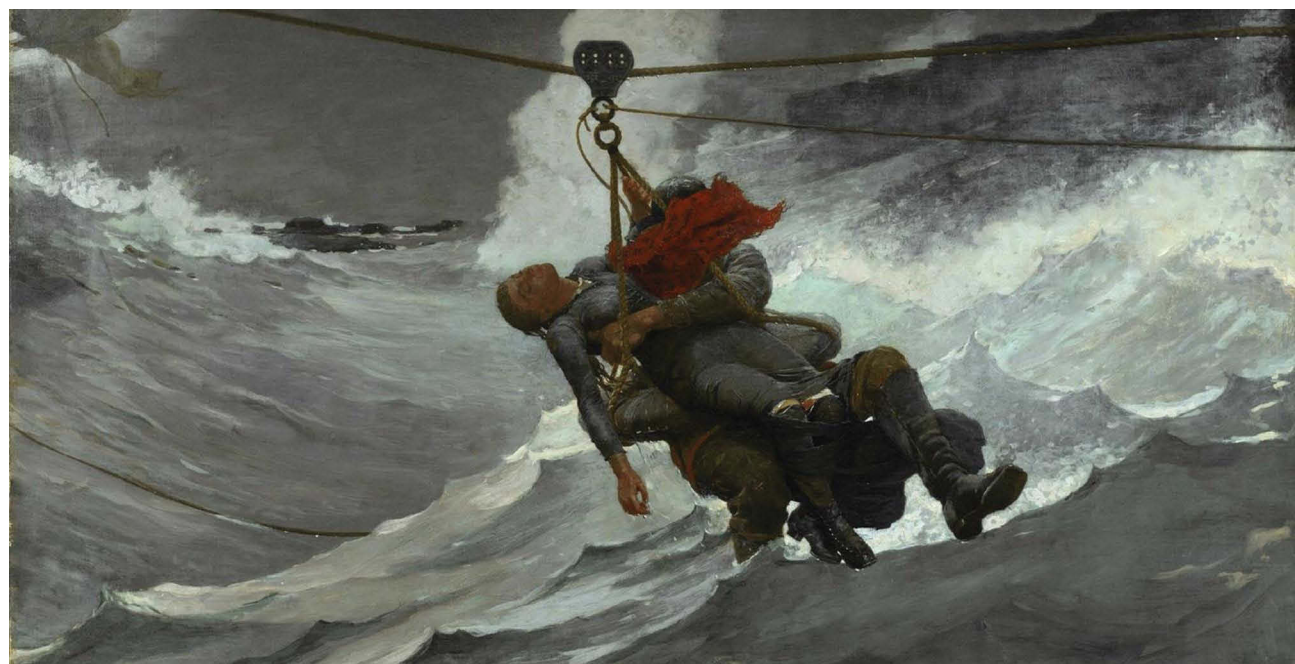


Figure 1 Winslow Homer, *The Life Line*, 1884, oil on canvas, 28 5/8 × 44 3/4 inches. Philadelphia Museum of Art: The George W. Elkins Collection, E1924-4-15. <https://philamuseum.org/collection/object/102970>.

IRB Review

The Office of Human Research at Thomas Jefferson University determined that the project was exempt from IRB review. Workshop participation was voluntary and confidential.

Results

Population Characteristics

Participation was offered to one hundred and six Internal Medicine residents, of which thirty-two (30%) volunteered to participate (12 females, 20 males; 15 postgraduate year 1, eight postgraduate year 2, and nine postgraduate year 3).

Survey Responses

Seven virtual surveys were sent throughout the workshop: one immediately after each of the six sessions and a final survey at the end of the workshop for an overall cumulative opinion from sessions attended. An average of ten volunteers participated in each workshop session (31% of total volunteers), consistent with residents' average participation in

Table 2 Survey Questions Aligned With ACGME Core Competency Characteristics Aimed to Measure

Survey Questions	ACGME Core Compecharacteristics
1. I was able to consider new points of view	Sensitivity and responsiveness to a diverse patient population
2. The program gave me time and tools for reflection	Compassion, integrity and respect for others
3. Helped me to communicate more effectively	Communicate effectively with patients and health professionals
4. Provided a pause and respite from medical care	Compassion, integrity and respect for others
5. Helped me reconnect with my role as a medical provider	Compassion, integrity and respect for others
6. Additional comments	

Abbreviation: ACGME, Accreditation Council for Graduate Medical Education.

Table 3 Percentage of “Yes” Responses to the Five Questions at Each Session’s End. Includes Ninety-One (n=91) Responses From Thirty-Two Internal Medicine Residents

Survey Questions	Percentage (%) of “yes” Survey Responses
I was able to consider new points of view	100
The program gave me time and tools for reflection	97
Helped me to communicate more effectively	81
Provided a pause and respite from medical care	95
Helped me reconnect with my role as a medical provider	74

general noon conferences. Ninety-one surveys (n=91) were completed throughout the seven surveys. Therefore, some participants responded multiple times, as expected after the six individual sessions and at the end of the series. It must be noted that the surveys corresponding to the individual sessions were sent to the thirty-two participating volunteers regardless of their attendance at that specific session. Nevertheless, there was a 100% response rate for the final survey. Positive results were observed on all survey questions as seen in Table 3. Out of ninety-one total survey responses, 100% of respondents were able to consider new points of view, 97% felt that the program gave them time and tools for reflection, 81% responded that it helped them to communicate more effectively, 95% answered that the workshop provided a pause and respite from medical care and 74% agreed that it helped them reconnect with their role as medical providers as represented in Figure 2a-2e.

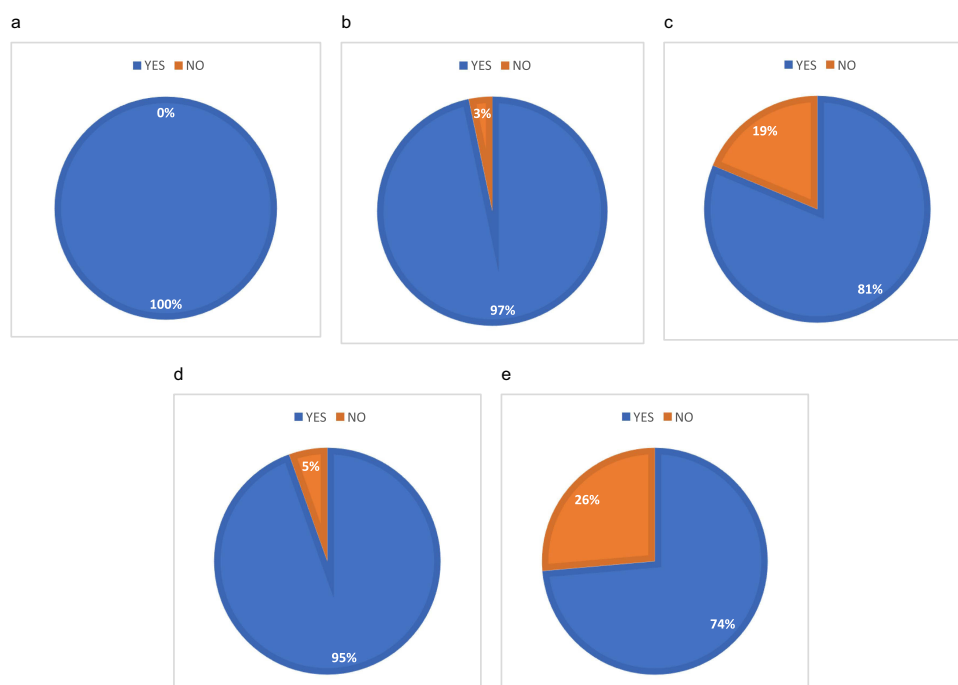


Figure 2 (a) Percentage (%) of “yes”/“no” answers per question “I was able to consider new points of view” (b) Percentage (%) of “yes”/“no” answers per question “The program gave me time and tools for reflection” (c) Percentage (%) of “yes”/“no” answers per question “Helped me to communicate more effectively” (d) Percentage (%) of “yes”/“no” answers per question “Provided a pause and respite from medical care” (e) Percentage (%) of “yes”/“no” answers per question “Helped me reconnect with my role as a medical provider”.

Discussion

Medical Humanities as Complement Learning

The UAPCMedEd workshop resulted in a novel introductory program of a technique that included training in the medical humanities to specifically address two core competencies required to graduate from internal medicine residency training in the USA. Majority of participants provided positive responses to survey results that was designed to understand their perceived improvements in certain aspects of professionalism and communication skills. Despite limited data and lack of a control group, the results were unquestionably positive, and participants received the workshop well. We hope that this will favor the continuation of future programs and more robust studies. Education and training in the field of the medical humanities stimulate the capacity of self-reflection, introspection, and observational skills, contributing to the development of early career physicians' professional identity.^{11–17} It provides them with a non-judgmental space for interaction, communication, and exchanging ideas, facilitating empathy and cultural sensitivity. With the daily practice of these so-called “soft skills”, we hope to influence residents to seeing their patients holistically and addressing their medical care beyond their biological pathologies to consider other aspects of diseases, such as social determinants of health.

In-person visits to art museums and galleries as part of educational programs in health science/medical training have been described in the literature and have been shown to promote individual reflection, understanding of the psychosocial context of patients, and empathy development.^{18–25} The integration of a virtual workshop into an existing residency curriculum should be highlighted as a novel experience. Due to the recent SARS-CoV-2 pandemic, the workshop was implemented virtually, allowing residents to participate remotely.

Despite the encouraging results, it should be noted that the different past experiences and degree of maturity in professionalism and communication amongst the residents are vastly variable, and many other factors contribute to the building up of these core competencies. Nonetheless, these diverse backgrounds also promote an even more enriching exchange of ideas during these workshops that appear promising for continuation.

Limitations

Some limitations of the study include a small cohort and the restriction to only one residency program. It is important to extend the UAPCMedEd workshop to more residents in different specialties and institutions to compare the influence of these factors and thus reduce inferential statistics. The residency program studied represents a particularly diverse group of physicians regarding nationalities, ages, religions, professional backgrounds, and medical training. These factors enrich the results but may differ from an average Internal Medicine resident. In terms of the innate nature of a residency program, some residents noted their workshop was interrupted either by urgent patient matters or their inability to attend while working on the night shifts, on the units, or during vacation. Additional limitations include that the survey was not pilot tested, the lack of assessment of intra-rater and inter-rater reliability of the survey, absence of using a Likert scale and the absence of a control group. We also acknowledge the potential for sustainability of effects and to attend the workshops over time as well as confounding factors involved in the analysis and interpretation of results. We present the UAPCMedEd project as a complementary tool to assist residents in developing and improving skills required by the ACGME and representing the core values of prosperous physicians.

Future Steps

The encouraging response to the UAPCMedEd curriculum should prompt more objective research into the humanities' role in positively improving residency training for trainees and patients.

Conclusion

The Internal Medicine residents received the UAPCMedEd workshop as a valuable experience. While the majority of responses suggested a perceived positive impact of the intervention, in order to fully understand the potential long-term impact of such a program on professionalism and communication skills, further studies with larger sample size, validated forms of assessing these skills and longer follow-up are needed.

Abbreviations

ACGME, Accreditation Council for Graduate Medical Education; UAPCMEd, Using Art for Professionalism and Communication Skills in Medical Education; USA, United States of America.

Acknowledgments

The authors are grateful to the Internal Medicine Residency Program at Jefferson Einstein Hospital for funding and to Adam Rizzo from the Philadelphia Museum of Art for co-hosting. No other external funding programs were involved.

Disclosure

The authors report no conflicts of interest.

References

1. Accreditation Council for Graduate Medical Education, Aagaard E, Bradley C. et al. Internal medicine milestones.; 2020. Available from: https://www.acgme.org/globalassets/pdfs/milestones/internalmedicine_milestones.pdf. Accessed February 21, 2025.
2. Dyche L. Interpersonal skill in medicine: the essential partner of verbal communication. *J Gen Intern Med.* 2007;22(7):1035–1039. doi:10.1007/s11606-007-0153-0
3. Hooker C. The medical humanities - a brief introduction. *Aust Fam Physician.* 2008;37(5):369–370.
4. Klugman CM, Peel J, Beckmann-Mendez D. Art Rounds: teaching interprofessional students visual thinking strategies at one school. *Acad Med.* 2011;86(10):1266–1271. doi:10.1097/ACM.0b013e31822c1427
5. Batistatou A, Doulis EA, Tiniakos D, Anogiannaki A, Charalabopoulos K. The introduction of medical humanities in the undergraduate curriculum of Greek medical schools: challenge and necessity. *Hippokratia.* 2010;14(4):241–243.
6. Kumagai AK, Wear D. “Making strange”: a role for the humanities in medical education. *Acad Med.* 2014;89(7):973–977. doi:10.1097/ACM.0000000000000269
7. Perry M, Maffulli N, Willson S, Morrissey D. The effectiveness of arts-based interventions in medical education: a literature review. *Med Educ.* 2011;45(2):141–148. doi:10.1111/j.1365-2923.2010.03848.x
8. Shapiro J, Rucker L, Beck J. Training the clinical eye and mind: using the arts to develop medical students’ observational and pattern recognition skills. *Med Educ.* 2006;40(3):263–268. doi:10.1111/j.1365-2929.2006.02389.x
9. Haidet P, Jarecke J, Adams NE, et al. A guiding framework to maximise the power of the arts in medical education: a systematic review and metasynthesis. *Hippokratia.* 2016;50(3):320–331. doi:10.1111/medu.12925
10. Hojat M, Axelrod D, Spandorfer J, Mangione S. Enhancing and sustaining empathy in medical students. *Med Teach.* 2013;35(12):996–1001. doi:10.3109/0142159X.2013.802300
11. Orr AR, Moghbeli N, Swain A, et al. The Fostering Resilience through Art in Medical Education (FRAME) workshop: a partnership with the Philadelphia Museum of Art. *Adv Med Educ Pract.* 2019;10:361–369. doi:10.2147/AMEP.S194575
12. Housen A. Art viewing and aesthetic development: designing for the viewer. visual understanding in education. VTS. 2007. Available from: <https://vtshome.org/wp-content/uploads/2016/08/2Housen-Art-Viewing-.pdf>. Accessed Jan 30th, 2024.
13. Elder NC, Tobias B, Lucero-Criswell A, Goldenhar L. The art of observation: impact of a family medicine and art museum partnership on student education. *Fam Med.* 2006;38(6):393–398.
14. Jasani SK, Saks NS. Utilizing visual art to enhance the clinical observation skills of medical students. *Med Teach.* 2013;35(7):e1327–e1331. doi:10.3109/0142159X.2013.770131
15. Naghshineh S, Hafler JP, Miller AR, et al. Formal art observation training improves medical students’ visual diagnostic skills. *J Gen Intern Med.* 2008;23(7):991–997. doi:10.1007/s11606-008-0667-0
16. Schaff PB, Isken S, Tager RM. From contemporary art to core clinical skills: observation, interpretation, and meaning-making in a complex environment. *Acad Med.* 2011;86(10):1272–1276. doi:10.1097/ACM.0b013e31822c161d
17. Katz JT, Khoshbin S. Can visual arts training improve physician performance? *Trans Am Clin Climatol Assoc.* 2014;125:331–342.
18. Gaufberg E, Williams R. Reflection in a museum setting: the personal responses tour. *J Grad Med Educ.* 2011;3(4):546–549. doi:10.4300/JGME-D-11-00036.1
19. Zazulak J, Halgren C, Tan M, Grierson LE. The impact of an arts-based programme on the affective and cognitive components of empathic development. *Med Humanit.* 2015;41(1):69–74. doi:10.1136/medhum-2014-010584
20. Reilly JM, Ring J, Duke L. Visual thinking strategies: a new role for art in medical education. *Fam Med.* 2005;37(4):250–252.
21. Bardes CL, Gillers D, Herman AE. Learning to look: developing clinical observational skills at an art museum. *Med Educ.* 2001;35(12):1157–1161. doi:10.1046/j.1365-2923.2001.01088.x
22. Shapiro J, Morrison E, Boker J. Teaching empathy to first year medical students: evaluation of an elective literature and medicine course. *Educ Health.* 2004;17(1):73–84. doi:10.1080/13576280310001656196
23. Sands SA, Stanley P, Charon R. Pediatric narrative oncology: interprofessional training to promote empathy, build teams, and prevent burnout. *J Support Oncol.* 2008;6(7):307–312.
24. Bentwich ME, Gilbey P. More than visual literacy: art and the enhancement of tolerance for ambiguity and empathy [published correction appears in. *BMC Med Educ.* 2017;17(1):200. doi:10.1186/s12909-017-1028-7
25. Gowda D, Dubroff R, Willieme A, Swan-Sein A, Capello C. Art as sanctuary: a four-year mixed-methods evaluation of a visual art course addressing uncertainty through reflection. *Acad Med.* 2018;93(11S):S8–S13. doi:10.1097/ACM.0000000000002379

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