Accepted Manuscript

Combating Obstacles to Empathy: A Replicable Small Group Discussion Series for Medical Students

Francesca P. Kingery, M.S., Alexander Bajorek, M.D. M.A., Amber Zimmer Deptola, M.D. Karen Hughes Miller, Ph.D., Craig Ziegler Ph.D., Pradip D. Patel M.D.

DOI: 10.15404/msrj/03.2016.0001

Reference: MSRJ

To appear in: *Medical Student Research Journal*

Received Date: 14 February 2015

Revised Date: N/A

Accepted Date: 8 January 2016

Please cite this article as: Kingery et al. Combating Obstacles to Empathy: A Replicable Small Group Discussion Series for Medical Students *Medical Student Research Journal* (2016). doi: 10.15404/msrj/03.2016.0001

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain

ACCEPTED MANUSCRIPT

Combating Obstacles to Empathy: A Replicable Small Group Discussion Series for Medical Students

Authors: Francesca P. Kingery, M.S.[1*], Alexander Bajorek, M.D. M.A.[2], Amber Zimmer Deptola, M.D.[3] Karen Hughes Miller, Ph.D.[4], Craig Ziegler Ph.D.[5], Pradip D. Patel M.D.[6]

Institutional Affiliations:

[1]School of Medicine, University of Louisville, Louisville, KY, USA. [2]Department of Physical Medicine and Rehabilitation, Harvard Medical School, Boston MA, USA. [3]Washington University School of Medicine, St. Louis, MO, USA. [4]Graduate Medical Education, University of Louisville School of Medicine, Louisville, KY, USA. [5]Office of Medical Education, University of Louisville School of Medicine, Louisville, KY, USA. [6]Department of Pediatrics, University of Louisville School of Medicine, Louisville, KY, USA.

Contact information for corresponding author(s):

Francesca P. Kingery, Fourth Year Medical Student, Dual Degree MD/MA Program, 500 South Preston St. Instructional Bldg, room 312, University of Louisville School of Medicine Louisville, KY 40202. Email: fdprib01@louisville.edu, Phone: 502-931-8766, Fax: 502-629-7065 (fax)

Short title: Small Group Discussion Series for Medical Students

Key Phrases: Medical Humanities, Bioethics, Curriculum, Student-led, Empathy, Medical Education, Pre-Clinical

Disclaimers: none

Word Count: 2695

Table and Figure Count: 4

Source of Support: Arnold P. Gold Foundation

Conflict of Interest Statement: The authors declare that the Arnold P. Gold Foundation funded this project.

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

ABSTRACT

The expression of humanism in patient encounters is a core component of the medical profession and evolving national medical student curriculum. Growing evidence suggests that empathetic care improves patient outcomes and diagnostic accuracy while decreasing physician stress and rates of litigation. Unfortunately, multiple recent studies using different scales and survey tools have consistently shown empathy to decrease during the third and fourth years of medical school. We developed a replicable, case-based, student and expert-driven, small-group discussion series designed to address this decline. Over two years, the series included four separate discussions over controversial topics seldom addressed by formal courses (Chronic Pain Management vs. Prescription Drug Abuse, Balancing Business and Medicine, and Domestic Violence). We utilized pre- and post-session surveys to qualitatively and quantitatively evaluate the program. Our results demonstrated significant improvement in participants' comfort with the subject matter and desire to approach faculty and peers regarding humanistic patient care. Future and more frequent interactions, combined with optimization of the format could further uncover the utility of this program. Ultimately, we believe our discussion series could be replicated on other medical campuses.

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

Introduction

A variety of recent studies using different scales and survey tools have consistently shown empathy to decrease during the third and fourth year of medical school.[1-5] Various explanations have been proposed for this decline, including long work-hours and sleep deprivation, dependence on technology, and decreased bedside interaction.[1,6]

Dating back to Hippocrates, humanism has been considered a component of leadership and professionalism in medicine.[7-10] Patient outcomes, quality of life, and diagnostic accuracy are very likely improved by empathetic and humane care.[1,11-13] Empathy allows the physician to gain the perspective of the patient. Moreover, it improves the quality of data taken in the patient history, which can improve diagnostic ability and decrease miscommunication. Patients themselves desire “humaneness” as the highest rated preference in a physician. This trait fosters good communication, partnership, and makes it more likely that a patient’s autonomy will be protected.[14] Empathetic physicians can improve the trust, health literacy, and compliance of their patients.[13,15] Moreover, objective health outcomes and quality of life are improved across a variety of diagnoses.[12] From the standpoint of the physician, those deemed as humanistic doctors have described their careers as more satisfying, less stressed, and having lower rates of litigation.[16,17]

With professional development and patient outcomes in the forefront, both international and US medical schools have focused on incorporating ethics, humanism, and moral reasoning into the medical curriculum. There is growing evidence that clinical empathy as a medical skill can be taught via the medical humanities.[18] The Association of American Medical Colleges (AAMC), the Accreditation Council for Graduate Medical Education (ACGME), and the American Board of Internal Medicine (ABIM), among others, state the study of ethics and its

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

relation to humanistic physician behavior must be included in the curriculum.[19-21] Perhaps most evident for the need for humanistic physicians is a new feature of the Electronic Residency Application Service (ERAS). Medical students applying for residency for the 2016 match will now have a chance to indicate their membership in the Gold Humanism Honor Society (GHHS). According to Lynn White M.D., the director of GHHS, "The addition of the GHHS checkbox sends a strong message that humanistic, caring physicians are both desired and needed in medical training programs."[23]

This national trend, however, has encountered many obstacles. Factors interfering with expressions of humanism range from but are not excluded to: sporadic care, shortage of time, interruptions, litigation and defensive care, and occupational burnout.[15] A gap between theory and practice may also develop when constructing curriculum aimed to promote ethics and humanistic medicine. Often there are assumptions that the humanism and medicine content are unequal in quality, practicality, and a need for further proof of efficacy.[25] Moreover, funding itself is lacking, with fifty-two percent of surveyed medical schools reporting no funding for curricular development in ethics.[22]

Another basic and fundamental issue is the lack of comprehensive and critical analysis of medical education in ethics and humanities. There are some efforts to combat this. A recent national workshop, The Project to Rebalance and Integrate Medical Education (PRIME), developed broad recommendations stemming from expert panel discussions during this workshop.[26] Three recommended themes emerged from this gathering: to focus on cultivating professional conduct, the need for academic support, and the importance of clear and realistic goals.

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

In an effort to face the obstacles of cultivating ethics and medical humanities education, the University of Louisville School of Medicine (ULSOM) has provided several solutions oriented to medical students' needs. Programs such as the Gold Humanism Honor Society (instated at ULSOM in 2009), a Master's degree (dual MD/MA) offered in Bioethics and Medical Humanities, and a specific committee, HEART: Humanism in Medicine, are helping to address these problems and better fulfill the themes that ACGME and PRIME delineate.[5,7]

HEART is an acronym for Humanistic, Empathetic, Altruistic, Relationship-centered Team. The HEART committee consists of a group of faculty, students, and administrators at the ULSOM committed to creating opportunities for the medical school community to value quality patient care through empathetic, compassionate relationships. Near peer (peer-assisted) learning has been shown to be an effective adjunct to traditional teaching, especially where questions are discussed in a group setting.[27] With this in mind, one of the projects through HEART, entitled "HEART-to-Heart (HtH)," was created, led and implemented by medical students. HtH began as an initiative to bring students and faculty together to discuss topics in ethics and humanism in medicine. These topics, while relevant to physicians, were underrepresented in the formal curriculum. Since its initiation, HtH has held four formal, small-group discussions. The outline consisted of: introduction of a topic, an expert panel presentation, and small-group interactive discussion over cases and relevant issues. The program aimed to provide interactive experiences and partly address the previous barriers in humanistic teaching. We hypothesized that participating in HtH would increase the student's knowledge of the topic matter, improve their ability to confront situations related to the discussion topic, and provide them with more confidence in teaching others about the need for a humanistic approach in such situations as those presented.

ACCEPTED MANUSCRIPT

Methods

This discussion series was designed to provide students and faculty with a structured and novel educational experience related to humanistic and ethical considerations in medicine seldom covered by the formal curriculum. The program consisted of four, 1-hour discussion sessions: 1. Chronic Pain Management vs. Prescription Drug Abuse: Can we find the balance?; 2. Making a Business out of Medicine: Balancing the Hippocratic Oath with Practicality; 3. Health Practitioners Role in Identifying and Reporting Domestic Violence; and 4. Health Practitioners Role in Identifying and Reporting Child Abuse. First through fourth year students were recruited via an email invitation to attend each session. Additionally, posters were hung around campus to promote the event. Attendance was optional. Each session was designed to maximize medical student attendance by providing a realistic length (1 hour during weekday lunch) and location (close proximity to lecture halls). Each had a similar outline (Table 1). The pre- and post-session surveys were intended to assess: (a) do attendees believe humanism and ethics are a sufficient portion of their formal education, (b) do attendees feel HtH sessions are effective, satisfying and useful, (c) do attendees feel comfortable discussing difficult patient situations with faculty, (d) do such sessions give the perception that the attendees are better prepared to care for patients.

SPSS (SPSS, 2012) version 21.0 was used to analyze the quantitative data. Percentages, means, or standard deviations are reported for all analyses. The pre-post Likert-scale data was analyzed using the Wilcoxon Signed Rank test. All *p*-values were two-tailed. Statistical significance was set by convention at $p<0.05$. Qualitative data was analyzed using a variation of Glaser and Strauss grounded theory, using independent reviewers to identify comment categories, code replies, and synthesize summaries based on reviewer consensus.[28]

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

This study was approved by the Institutional Review Board at the University of Louisville School of Medicine.

Results

Quantitative Data:

One hundred and thirty four students completed the surveys (86 first-years, 38 second-years, 6 third-years and 4 fourth-years). The comparison of students overall pre and post scores on the 5 humanism Likert-scale questions show a significant increase on all items except for one. Students pre-to-post scores increased on their agreement that “participating in group conversation about humanism and ethical dilemmas is an effective way to prepare for difficult patient situations” (pre, mean = 4.40; post = 4.56, P = 0.001); their comfort in “approaching faculty and attendees with concerns about a patient's care” (pre, mean = 3.99; post = 4.29, P <0.001); the belief that “their school’s residency/department’s curriculum encourages humanism in medicine” (pre, mean = 4.10; post = 4.23, P <0.001); and the “feeling of being adequately prepared to care for patients with a more humanistic approach” (pre, mean = 3.45; post = 4.10, P = 0.001). The item addressing if “students see a connection between understanding humanism in medicine and improving clinical practice” showed no statistical increase in scores, however, 96% of students initially agreed with this statement, hence, scores had limited ability to improve (see Table 2).

For students who had attended a previous HtH session within this series, pre and post scores were also compared to see if reinforcement of the humanism content would continue to increase scores. Scores increased on two out of four items (One item, “I felt adequately prepared to care for patients with a more humanistic approach”, was only used during the first session, and

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

therefore could not be analyzed.). Scores significantly increased in this subsample for the items "I think participating in group conversations about humanism and ethical dilemmas is an effective way to prepare for difficult patient situations" (p=0.003), and the item "I felt comfortable approaching faculty and attendings with concerns about a patient's care (p = 0.001). The items "I can see the direct connection between understanding humanism in medicine and improving clinical practice", and "my school's residency/department's curriculum encourages humanism in medicine" did not achieve significant increase, however, these initial scores were relatively high (see Table 3).

Overall, students thought the HtH session was a valuable use of their time, mean = 8.86, SD = 1.07, and enjoyed the experience, mean = 9.03, SD = 1.03, based on a 10-point rating scale where 10 indicates the most positive rating. The pre and post Cronbach alpha scores on the 5-item instrument for this sample were 0.45 and 0.87, respectively. The increase in this reliability coefficient from unacceptable to good indicates that the instructional session may improve student's understanding of the concept of humanism as it relates to medicine.

Qualitative Data:

Participants were asked to describe two goals they wanted to achieve by attending an HtH session. Pre survey data demonstrated six common goals outlined (see Table 4). A majority of the students wished to gain more competency on the topic discussed (37%, 76/207), as well as learn practical application of the material (27%, 55/207). When asked to respond "yes, somewhat, or no" to if the session achieved their goals, post survey results show that a majority of participants' goals were achieved after having attended the session. Specifically, 88% responded "yes", and 12% responded "somewhat". No participants responded "no".

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

Participants were also asked how the HtH sessions could be improved (see Table 4). A majority of the responses cited “time” as an area of improvement. Most participants wished that there was more time for the group, case-based discussions, while others stated a need for more time to hear from the expert speakers. Twenty-four percent of participants stated that the “structure” of the sessions could be enhanced, some citing that having the opportunity to prepare for the sessions ahead as an option. Lastly, some participants cited no need for improvement (22%, 14/207).

Discussion

Our hypothesis that these sessions would be efficacious was based from others’ experience and supportive literature. They suggest educational efforts to teach humanism in the curriculum can decrease the natural decline of empathy in the later years of medical school.[5,10,24,29,30]

Importantly, the more active the student is in the process, the more they take away. HtH differentiates itself from other lecture series by including small-group discussions over case studies and challenging topics. In place of passive absorption, students interactively reflect on the material. Recently, residency programs have adopted similar small-group reflections with positive feedback on their impact on resident well-being and sense of community with peers.[31] Their work further strengthens rationale for using the small-group format.

Drawing further on the finding that role models have significant influence on attitudes and behaviors, HtH provides several expert speakers in each discussion.[29] These are physicians or health care workers in the field related to the subject matter, which provide their narrative. We also have actual patients provide their perspective and strengthen practical lessons for students.

ACCEPTED MANUSCRIPT

Finally, due to nature of clinical student's work schedules, most of the students attending are in 1st or 2nd year. This ensures that we can emphasize the importance of humanism and ethics and impact attitudes before they have a probabilistic chance to decline.[5]

After participating in an HtH session, participants' scores regarding positive thoughts about group discussions, approaching faculty and peers about patient care, and curriculum encouraging caring for patients with a more humanistic approach significantly improved. These findings support the idea that participating in the program is an effective approach for teaching medical ethics and humanities curricula.

For students who had previously attended an HtH session, an interesting finding emerged. This subgroup acknowledged that they "agree/strongly agree" with feeling more comfortable approaching faculty and attending with concerns about patient care by demonstrating higher pre and post test scores for this question item (pre 70%, post 89%). Pre and post scores for this same question item showed that for participants who had not previously attended HtH, the scores for "agree/strongly agree" improved from 52% (pre) to 76% (post). This finding shows that participating in the HtH program may have made a long-term impact in this subgroup.

Qualitative data demonstrated that a majority of students achieved their desired goals by participating in HtH. The goals were categorized and quantitated to determine common themes important to students. These themes showed participant's interests ranged from gaining competency in the subject matter to learning practical applications and improving communication skills. Suggestions for improvement in the sessions mainly focused on time limitations. Most participants wished for more time to hear from experts or more time for group case based discussion. Other than time, the structure of the program was cited as an area for improvement. Specifically, students suggested that the cases used in the discussion groups be

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

sent out before the HtH session and that the speakers utilize the cases to provide more practical feedback. Additionally, over forty percent of participants suggested more time for discussion and expert presentation on the subjects. Previous studies have determined that in order to significantly increase moral reasoning skills in students they must engage in small-group discussion for at least 20 hours.[33] This lends support to increasing the frequency of HtH sessions to several times a semester. Another student suggestion was choosing the best time logistically to encourage the most participants. Lunch hour was found to be optimal, however as indicated it was limited to a one hour period, flanked by the commute time to and from class. This inherently put a rush and compression on the activities. Many participants suggested at least an hour and a half for proper discussion and development of idea exchange. Future discussion would need to find a time that fit these competing influences. Finally, it may be beneficial to widen the umbrella and incorporate more clinical students and residents as an effort to engage participants at this level in re-evaluating a humanistic perspective after gaining clinical experience.
General limitations of this study were that the program took place at only one institution over two academic years; and the survey instrument, although devolved with expert advice to establish face validity, had not been piloted.

Conclusions

There are future improvements and obstacles to acknowledge to advance the efficacy of this discussion series. There can be a subjective character to evaluating (defining and operationalizing) baseline and end-point qualities like compassion and professionalism.[32] The qualitative theory and participant survey structure were carefully selected to best approach this barrier. While the results from our study are encouraging we recognize that our conclusions are

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

based on a small amount of exposure time. The data from the four sessions has served as a productive initial study to demonstrate that students value and benefit from the HtH program. We hope to use this data to expand the HtH program to more frequent sessions with protected time for adequate discussion.

Patients and their physicians benefit from empathetic medicine. If this trait declines naturally during medical education, gaps in curriculum should be supplemented with effective efforts to combat that tendency. HtH uses case-based, expert driven, small group discussions led by medical students that interactively stimulate and improve upon understanding humanistic-centered patient care. It establishes clear goals and helps teach professional conduct, thus aligning with the national PRIME recommendations. It tackles the controversial; it faces the informal curriculum head on. The format is engaging, flexible to students' schedules, and creative. Most importantly, our preliminary data helps to substantiate these claims. We believe our discussion series could be translated and improved in medical campuses across the country.

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

References

1. Chen D, Lew R, Hershman W, Orlander J. A cross-sectional measurement of medical student empathy. *Journal of General Internal Medicine*. October 2007;22(10):1434-8. http://dx.doi.org/10.1007/s11606-007-0298-x.

2. Hojat M, Vergare MJ, Maxwell K, et al. The devil is in the third year: A longitudinal study of erosion of empathy in medical school. *Academic Medicine*. September 2009;84:1182–1191.

3. Mangione S, Kane GC, Caruso JW, Gonella JS, Nasca TJ, Hojat M. Assessment of empathy in different years of internal medicine training. *Medical Teacher*. July 2002;24:370–3.

4. Newton BW, Barber L, Clardy J, et al. Is there hardening of the heart during medical school? *Academic Medicine*. March 2008;83:244–249. http://dx.doi.org/10.1097/ACM.0b013e3181637837.

5. Rosenthal S, Howard B, Schlussel YR, et al. Humanism at heart: preserving empathy in third-year medical students. *Academic Medicine*. March 2011;86(3):350-8. http://dx.doi.org/10.1097/ACM.0b013e318209897f.

6. Rosen IM, Gimotty PA, Shea JA, Bellini LM. Evolution of sleep quantity, sleep deprivation, mood disturbances, empathy, and burnout among interns. *Academic Medicine*. January 2006; 81(1):82-5.

7. Gold A, Gold S. Humanism in medicine from the perspective of the Arnold Gold Foundation: challenges to maintaining the care in health care. *Journal of Child Neurology*. June 2006;21(6): 546-9.

8. Mueller PS. Incorporating professionalism into medical education: the Mayo Clinic

ACCEPTED MANUSCRIPT

experience. *Keio Journal of Medicine*. September 2009;58(3):133-43.

9. Shiau S, Chen CH. Reflection and critical thinking of humanistic care in medical education. *Kaohsiung Journal of Medical Science*. July 2008;24(7):367-72. http://dx.doi.org/10.1016/S1607-551X(08)70134-7.

10. Swick HM. Viewpoint: professionalism and humanism beyond the academic health center. *Academic Medicine*. November 2007;82(11):1022-8.

11. Bikker AP, Mercer SW, Rielly D. A pilot prospective study on the consultation and relational empathy, patient enablement, and health changes over 12 months in patients going to the Glasgow Homoeopathic Hospital. *J Altern Complement Med*. August 2005;11(4):591-600.

12. Di Blasi Z, Harkness E, Ernst E, Georgiou A, Kleijnen J. Influence of context effects on health outcomes: a systematic review. *The Lancet*. March 2001;357(9258):757-762.

13. Kim SS, Kaplowitz S, Johnston MV. The effects of physician empathy on patient satisfaction and compliance. *Eval Health Prof.* September 2004;27(3):237-51.

14. Wensing M, Jung HP, Mainz J, Olesen F, Grol R. A systematic review of the literature on patient priorities for general practice care, part 1: description of the research domain. *Social Science & Medicine.* November 1998;47(10):1573-1588.

15. Schattner, A. The silent dimension: expressing humanism in each medical encounter. *Archives of Internal Medicine.* June 2009;169(12):1095-9. http://dx.doi.org/10.1001/archinternmed.2009.103.

16. Beckman HB, Markakis KM, Suchman AL, Frankel RM. The doctor– patient relationship and malpractice: lessons from plaintiff depositions. *Archives of Internal Medicine.* June 1994; 154:1365–1370.

17. Levinson W, Roter DL, Mullooly JP, Dull VT, Frankel RM. The relationship with

ACCEPTED MANUSCRIPT

malpractice claims among primary care physicians and surgeons. *Journal of the American Medical Association.* February 1997;277:553–9.

18. Neumann M, Bensing J, Mercer S, Ernstmann N, Ommen O, Pfaff H. Analyzing the "nature" and "specific effectiveness" of clinical empathy: a theoretical overview and contribution towards a theory-based research agenda. *Patient Education and Counseling.* March 2009;74(3):339-46. http://dx.doi.org/10.1016/j.pec.2008.11.013

19. Association of American Medical Colleges Medical School Objectives Project. Learning Objectives for Medical Student Education: Guidelines for Medical Schools. Washington, DC: *Association of American Medical Colleges*. Available from: https://members.aamc.org/eweb/ upload/Learning%20Objectives%20for %20Medica l%20Student%20Educ%20Report%20I.pdf. Accessed December 28, 2014.

20. Accreditation Council for Graduate Medical Education. General Competency and Assessment: Common Program Requirements. June 9, 2013; Available from: http://www.acgme.org/acgmeweb/Portals/0/PFAssets/ProgramRequirements/CPRs2013.pdf. Accessed December 28, 2014.

21. Medical professionalism in the new millennium: A physician's charter. Project of the ABIM Foundation, ACP-ASIM Foundation and the European Federation of Internal Medicine. *Annals of Internal Medicine.* February 2002;136:243–246.

22. Lehmann LS, Kasoff WS, Koch P, Federmann DD. A survey of medical ethics education at U.S. and Canadian medical schools. *Academic Medicine.* July 2004;79:682–689.

23. Medical residency application to recognize student achievement in humanism in medicine [news release]. Englewood Cliffs, NJ: Arnold P. Gold Foundation; Nov 12, 2014.

ACCEPTED MANUSCRIPT

http://www.prnewswire.com/news-releases/medical-residency-application-to-recognize-student-achievement-in-humanism-in-medicine-282404131.html. Accessed January 10, 2015.

24. Benbassat J, Baumal R, Borkan JM, Ber R. Overcoming barriers to teaching the behavioral and social sciences to medical students. *Academic Medicine*. April 2003;78(4):372-80.

25. Wachtler C, Lundin S, Troein M. Humanities for medical students? A qualitative study of a medical humanities curriculum in a medical school program. *BMC Medical Education.* March 2006;6:16.

26. Doukas DJ, McCullough LB, Wear S. Perspective: Medical education in medical ethics and humanities as the foundation for developing medical professionalism. *Academic Medicine*. March 2012;87(3):334-41. http://dx.doi.org/10.1097/ACM.0b013e318244728c.

27. Patel PD, Kischnick DB, Bickel SG, Ziegler CH, Miller KH. Evaluating the Utility of Peer-Assisted Learning in Pediatrics. *Medical Science Educator*. December 2011;21(4):316-319.

28. Pandit NR. The Creation of Theory: A recent application of the Grounded Theory Method. *The Qualitative Report*. December 1996;2(4):1-20.

29. Moyer CA, Arnold L, Quaintance J, et al. What factors create a humanistic doctor? A nationwide survey of fourth-year medical students. *Academic Medicine.* November 2010; 85(11):1800-7. http://dx.doi.org/10.1097/ACM.0b013e3181f526af.

30. Reichert J, Bognar S, Greenberg LW, Godoy M, Durgans KY. New educational modules offer tough case studies around humanistic issues. *Journal of Cancer Education*. February 2011; 26(2):386-7. http://dx.doi.org/10.1007/s13187-011-0195-1.

31. Wen LS, Baca JT, O'Malley P, Bhatia K, Peak D, Takayesu JK. Implementation of small-group reflection rounds at an emergency medicine residency program. *Canadian Journal of Emergency Medicine.* May 2013; 5(3):175-7.

ACCEPTED MANUSCRIPT

32. Misch, DA. Evaluating physicians' professionalism and humanism: the case for humanism "connoisseurs". *Academic Medicine*. June 2002;77(6):489-95.

33. Self, DJ, Olivarez M, Baldwin DC Jr. The amount of small-group case- study discussion needed to improve moral reasoning skills of medical students. *Academic Medicine*. May 1998;3(5):521-3.

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

Table 1: General Outline for small-group discussion series

Discussion Series Timing and Structure
00:00 – 00:05: Attendees receive food, are seated, and asked to complete an anonymous pre-session survey
00:05 – 00:15: Brief introduction to the discussion topic by a student leader
00:15 – 00:35: Guest speakers deemed experts in their field/patients with experience on the topic comment on their personal experiences and give any recommendations they may have for physicians or medical students
00:35 – 00:50: Attendees are given patient case(s) related to the discussion's topic and form into small groups of 6-8 to discuss ethical issues, points to consider involving patient's care, and personal experiences.
00:50 – 00:55: Returning to the large group, each group briefly shares their discussion and how they would manage the given patient situation. Guest speakers give their remarks.
00:55 – 01:00: Attendees asked to complete post-session survey.

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

Table 2: Pre and Post Humanism Agreement Items where columns represent the sample size, the percentage responding to a response option(s), the mean and standard deviation, and the P value for the comparison of pre-and post item responses.

		n	Strongly Disagree/Disagree (1 or 2)	Neutral (3)	Agree/ Strongly Agree (4 or 5)	Mean	(SD)	P value
I can see the direct connection between understanding humanism in medicine and improving clinical practice.	Pre	134	0%	4%	96%	4.67	(0.55)	0.319
	Post	134	0%	1%	99%	4.72	(0.47)	
I think participating in group conversation about humanism and ethical dilemmas is an effective way to prepare for difficult patient situations.	Pre	134	0%	5%	95%	4.40	(0.59)	0.001
	Post	134	0%	1%	99%	4.56	(0.51)	
I feel comfortable approaching faculty and attendings with concerns about a patient's care.	Pre	133	4%	21%	76%	3.99	(0.80)	<0.001
	Post	133	2%	6%	92%	4.29	(0.65)	
My school's residency/department's curriculum encourages humanism in medicine.	Pre	134	3%	8%	89%	4.10	(0.66)	<0.001
	Post	134	1%	7%	92%	4.23	(0.64)	
I feel adequately prepared to care for patients with the issues discussed today with a more humanistic approach.	Pre	29	17%	31%	52%	3.45	(1.02)	0.001
	Post	29	0%	24%	76%	4.10	(0.77)	

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

Table 3: Pre and Post Humanism Agreement Items for Students Who Have Previously Attended a Heart to Heart Session where columns represent the sample size, the percentage responding to a response option(s), the mean and standard deviation, and the P value for the comparison of pre-and post item responses.

		n	Strongly Disagree/ Disagree (1 or 2)	Neutral (3)	Agree/ Strongly Agree (4 or 5)	Mean	SD	P value
I can see the direct connection between understanding humanism in medicine and improving clinical practice.	Pre	47	0%	4%	96%	4.73	(0.54)	
	Post	47	0%	2%	98%	4.72	(0.50)	1.000
I think participating in group conversation about humanism and ethical dilemmas is an effective way to prepare for difficult patient situations.	Pre	47	0%	4%	96%	4.40	(0.58)	0.003
	Post	47	0%	0%	100%	4.66	(0.48)	
My school's residency/ department's curriculum encourages humanism in medicine.	Pre	47	2%	4%	94%	4.23	(0.63)	
	Post	47	0%	6%	94%	4.32	(0.59)	0.206
I feel comfortable approaching faculty and attendings with concerns about a patient's care.	Pre	47	2%	28%	70%	3.96	(0.81)	
	Post	47	0%	11%	89%	4.26	(0.64)	0.001

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

Table 4: Qualitative Analysis – Suggestions for Improvement where columns represent the frequency, percentage, and an open-ended response justifying the suggestion for improvement.

Improvement	**Frequency**	**%**	**Examples**
Structure	15	24	"I think the case discussions could be used to lead the presentation so present the case at the beginning and walk through it giving teaching points as you go along."
More time for experts	13	21	"I would enjoy listening to more stories of actual patients and possibly new problems that were discovered and how they were dealt with."
More time for group discussion	21	23	"If we could secure a longer period of protected time we could discuss further."
No improvement	14	22	"Excellent, good perspectives, very pragmatic and practical."
	63	100	

ACCEPTED MANUSCRIPT