Interprofessional Improv: Using Theater Techniques to Teach Health Professions Students Empathy in Teams

Amy B. Zelenski, PhD, Norma Saldivar, MFA, Linda S. Park, PhD, Vonnie Schoenleber, Fauzia Osman, MPH, and Sara Kraemer, PhD

Abstract

Problem

Health professionals need to learn how to relate to one another to ensure high-quality patient care and to create collaborative and supportive teams in the clinical environment. One method for addressing both of these goals is teaching empathy during professional training to foster connection and commonality across differences. The authors describe a pilot improvisational theater (improv) course and present the preliminary outcomes showing its impact on interprofessional empathy.

Approach

In 2016–2017, the authors piloted a 15-hour course to teach interprofessional empathy to health professions students at the University of Wisconsin–Madison using improv techniques. The authors used a convergent mixed-methods design to evaluate the course's impact on interprofessional empathy. Students enrolled in the course (intervention group, n = 45) and a comparison group (n = 41) completed 2 validated empathy questionnaires (Interpersonal Reactivity Index [IRI], Consultative and Relational Empathy [CARE] measure) and a facial expression recognition task to measure empathy in the pre- and postintervention periods. Differences were examined using paired *t* tests. Semistructured interviews were conducted with 8 course participants to gain a deeper understanding of the course's effects.

Outcomes

The intervention group's mean scores on 5 CARE items improved significantly: ease, care, explain, help, and plan. On the IRI, personal distress levels decreased significantly in both the intervention and comparison groups. In the interviews, students who took the class reported a positive impact on their interprofessional relationships and on their ability to think on their feet. They also reported improv influenced other areas of their lives, including patient care and interactions with people outside their work life.

Next Steps

The authors have continued to offer the course. They aim to conduct a randomized controlled study with medical students and test durability by measuring empathy again 3–6 months following the intervention.

Problem

As medical educators, we teach future doctors the knowledge and skills they need to practice medicine; we also teach them how to "be" doctors. Educators in other health professions do the same. We do this in our own silos, even though each health profession's identity is intertwined with others'. This disconnected training results in problems in practice.[1] It can also lead to members of one health profession "othering" those of another profession—that is, viewing the "othered" group as different in a way that makes that group inferior—thus impairing their ability to see the perspective of the "othered" group. There is a need, therefore, to teach health professionals how to relate to one another to ensure high-quality patient care and create the collaborative and supportive teams needed to manage their stressful environment. One method for addressing both goals is teaching empathy during professional training.

Empathy is the ability to imaginatively reconstruct another person's perspective and resonate with their emotions.[2] "Resonate" refers to experiencing a small amount of what another person is feeling to help you understand their perspective. Although health professions attract empathic individuals, empathy deteriorates during training.[3] For an interprofessional team, empathy can be an antidote to othering by fostering connection and commonality across differences.[4] Here, we describe a pilot improvisational theater (improv) course for health professions students and present the preliminary outcomes showing the course's impact on interprofessional empathy.

Approach

Improvisational Theater for Health Professionals

Conceptual framework. In 2016–2017, we designed and piloted Improvisational Theater for Health Professionals, a 15-hour course to teach interprofessional empathy to health professions students at the University of Wisconsin–Madison using improv techniques. Improv is unscripted storytelling that involves accepting what your partner is offering and contributing something of your own. Empathy and improv have many skills in common. Reiss writes, "When people show empathy for others, they are usually good at perceiving what others feel, able to process that information, and able to respond effectively."[4(p10)] Fu explains that improv is about attunement (knowledge of self and others), affirmation (validation of self and others), and advancement (enrichment of self and others).[5] In our conceptual framework, the perceiving, processing, and responding skills of empathy are enhanced when situated within the attunement, affirmation, and advancement skills of improv (see

Please see the end of this article for information about the authors.

Correspondence should be addressed to Amy B. Zelenski, Department of Medicine, University of Wisconsin School of Medicine and Public Health, 1685 Highland Ave., Suite 5124, Madison, WI 53705; telephone: (608) 263-7358; email: zelenski@medicine.wisc.edu.

Acad Med. 2020;95:1210–1214.
First published online April 21, 2020
doi: 10.1097/ACM.0000000000003420
Copyright © 2020 by the Association of American Medical Colleges

Supplemental digital content for this article is available at http://links.lww.com/ACADMED/A921.

Copyright © by the Association of American Medical Colleges. Unauthorized reproduction of this article is prohibited.

Supplemental Digital Appendix 1 at http://links.lww.com/ACADMED/A921).

The rules of improv include accepting the perspective of the other people in the scene without interjecting your own evaluation of their perspective (i.e., whether you agree with them). The "yes, and" principle is the core principle of all improvisation. The ability to be open and accepting of all "players" is essential to collaboration. Improv requires players to react in the moment without focusing on personal goals and to defer to the collective goals of the group. To do this, improvisers must hone their observation and listening skills through practice using games.[5]

Course design. One author (A.B.Z.) with expertise in theater and training in applied improv designed and taught the course. She modeled the course after the Watson/Northwestern Medical Improv Curriculum.[6] She designed the activities using our conceptual framework (described above) and the rules of improv: (1) agree; (2) say "yes, and…"; (3) give gifts; (4) make statements; (5) tell a story; and (6) you know and have everything.

The class met 6 times over the course of 6 to 8 weeks. Each 2.5-hour class session began with a discussion of assigned readings focused on relationship-centered care, spontaneity, curiosity, and nonverbal communication. Students were encouraged to experiment with improv rules in their daily lives, and time was set aside at the beginning of class for them to share those experiences. Then, the instructor led several improv games, which were followed by debriefing to connect the strategies used in the games to team interactions in the clinical environment. For example, the students explored nonverbal communication by playing an improv game in which 2 students spoke gibberish and 2 other students acted as their translators. After all students participated in the scene, the class discussed how much was communicated with gestures, tones, and facial expressions. The class also discussed how it felt to speak gibberish and how it felt to translate. At the end of each class, students engaged in 5 minutes of free writing about the experiences they just had. A detailed course syllabus is provided in Supplemental Digital Appendix 2 at http://links.lww.com/ACADMED/A921.

Participants

The course was open to all students in health professions training programs on the University of Wisconsin–Madison campus. To explore the impact of the course on interprofessional empathy (i.e., empathy for other health care team members), during the fall 2016, spring 2017, and fall 2017 semesters, we recruited students who enrolled in the course (intervention group, n = 45) and students who did not take the course (comparison group, n = 41) to participate in our study. Students were invited to participate before the class's first session. Comparison students were recruited via emails from their departments and in person. Participation in the study was voluntary. One enrolled student dropped the course after the first meeting.

Evaluation methods

We used a convergent mixed-methods design to evaluate the pilot improv course. We used survey instruments to measure empathy changes in the intervention and comparison groups. We used interviews to explore what course participants learned and how they put this learning into practice. All procedures were approved and monitored by the University of Wisconsin Education and Social/Behavioral Science Institutional Review Board.

Quantitative measures. Each study participant in the intervention and comparison group completed 2 validated empathy survey instruments—the Interpersonal Reactivity Index[7] (IRI) and the Consultative and Relational Empathy (CARE) measure[8] adapted for self-assessed interprofessional empathy skills—and a facial expression recognition task.[9] The intervention group completed these before the first class meeting and again following the last class session; the comparison group completed them during the same weeks as the intervention group.

We used the 21-item IRI questionnaire to measure 3 domains of empathy: perspective taking, empathic concern, and personal distress.[7] We used the 10-item CARE questionnaire to measure empathy behaviors such as listening and showing concern for another person.[8] Since most study participants did not have regular patient contact, we used CARE as a self-report measure. The facial expression recognition task used a 12-item multiple-choice quiz based on the Ekman Facial Action Coding System to test the accuracy of identifying emotions through facial expressions.[9] In this task, study participants were asked to choose the correct emotion displayed in a photograph from the 5 options listed. For an example question, see the similar quiz available from the Greater Good Science Center at the University of California, Berkeley (https://greatergood.berkeley.edu/quizzes/ei_quiz).

Qualitative methods. To gain a deeper understanding of the effects of the course, we created a 19-question interview guide and conducted semistructured interviews with course participants. (The interview guide is available as Supplemental Digital Appendix 3 at http://links.lww.com/ACADMED/A921.) The interview sample consisted of the 30 students who completed the course during the fall 2016 or spring 2017 semesters. These students were invited to participate in the interviews after the course ended. Five of 15 course participants completed an interview in fall 2016, and 3 of 15 completed an interview in spring 2017, for a total of 8 interviewees (27% overall response rate). One study team member (S.K.) conducted the interviews, which lasted 30–60 minutes and took place in private offices or conference rooms on the University of Wisconsin–Madison campus. The interviews were audiorecorded and transcribed verbatim.

Analysis

Quantitative data. The majority of study participants were female and students in the nursing, pharmacy, and medical schools (Table 1). Statistical differences in scores between the preintervention and postintervention periods (pretest to posttest) were calculated using a paired *t* test under normal assumptions for most measures and stratified by group (intervention or comparison). Scores for 6 measures—perspective taking, empathic concern, ease, explain, plan, and help (Table 2)—were log-transformed to conform to normality due to a few participants who reported extreme values for these measures.

Qualitative data. One study team member (S.K.) conducted content analysis of the interview transcripts. Content analysis is a qualitative analysis technique used for identifying

Copyright © by the Association of American Medical Colleges. Unauthorized reproduction of this article is prohibited.

Table 1

Demographic Characteristics of Health Professions Students in the Intervention and Comparison Groups, University of Wisconsin–Madison, 2016–2017[a]

Demographic characteristic	Intervention group (n = 45)	Comparison group (n = 41)
Gender, no. (%)		
Male	12 (26.7)	13 (31.7)
Female	33 (73.3)	27 (65.9)
Trans man	—	1 (2.4)
Trans woman	—	—
Health profession/training program, no. (%)		
Veterinary medicine	3 (6.6)	3 (7.3)
Genetic counseling	4 (8.9)	2 (4.8)
Medical doctor	13 (28.9)	15 (36.5)
Nurse practitioner/physician assistant	—	4 (9.7)
Occupational therapy	2 (4.4)	—
Pharmacy	5 (11.1)	12 (29.2)
Physical therapy	2 (4.4)	—
Nursing	15 (33.3)	4 (9.7)
Premedical	1 (2.2)	—
Other	—	1 (2.4)

[a]Students in the intervention group participated in the 15-hour Improvisational Theater for Health Professionals course in fall 2016, spring 2017, or fall 2017. The course was open to all health professions students on the University of Wisconsin–Madison campus. Students in the comparison group did not participate in the course.

emergent and prior themes. It was the best approach to support our objective of identifying and describing (not validating, generalizing, or replicating) how participants experienced the course and how they applied their learning. Code development involved a process whereby each successive instance of a code was compared with previous instances to confirm or alter the code and its definition (i.e., the constant comparative method).

Outcomes

Quantitative findings

Among students who took the improv class, mean scores improved significantly on 5 CARE items: making their teammates feel at ease, showing care and compassion, explaining things clearly from their perspective, helping other team members contribute, and creating a consensus plan of action. On the IRI, students in both the intervention and control groups reported a significant decrease in their levels of personal distress. There were no significant

Table 2

Pretest to Posttest Mean Differences for Health Professions Students in the Intervention and Comparison Groups, University of Wisconsin–Madison, 2016–2017[a]

Measure	Intervention group (n = 45)			Comparison group (n = 41)		
	Mean difference	*t*	*P* value	Mean difference	*t*	*P* value
Facial expression recognition test[b]	0	0	> .99	0.08	0.1	.8
IRI[7]						
Perspective taking	−0.05	−0.9	.36	−0.04	−1.1	.27
Empathic concern	0.06	0.9	.35	0.04	1.8	.07
Personal distress	1.66	2.9	.005[c]	1.5	2.5	.01[c]
CARE[8]						
Ease	−0.14	−2.4	.02[c]	0.02	0.4	.6
Whole story	−0.31	−1.8	.07	−0.12	−0.6	.52
Listen	−0.08	−0.6	.58	−0.25	−1.1	.29
Interest	0.03	0.5	.58	−0.03	−0.9	.39
Understand	−0.3	−0.2	.8	−0.12	−0.8	.4
Care	−0.48	−3.0	.004[c]	0	0	> .99
Positive	−0.23	−1.3	.18	−0.33	−1.55	.13
Explain	−0.18	−4.9	.001[c]	0.02	0.59	.55
Help	−0.14	−2.4	.02[c]	−0.15	−1.6	.12
Plan	−0.14	−2.7	.01[c]	−0.04	−0.69	.49

Abbreviations: IRI, Interpersonal Reactivity Index; CARE, Consultative and Relational Empathy.
[a]Students in the intervention group participated in the 15-hour Improvisational Theater for Health Professionals course in fall 2016, spring 2017, or fall 2017. They completed the pretests before the first class session and the posttests following the last class session. Students in the comparison group did not participate in the course, but they completed the pretests and posttests during the same weeks as the students in the intervention group.
[b]A multiple-choice facial expression recognition quiz based on the Ekman Facial Action Coding System.[9]
[c]Statistically significant at the 5% level ($P < .05$).

Copyright © by the Association of American Medical Colleges. Unauthorized reproduction of this article is prohibited.

Table 3
Categorization of Aspects of Empathy Into Core Skill Groups

Core skill group (improv/empathy)[a]	Aspect of empathy
Attunement/perceiving	Perspective taking[b]
	Understanding[c]
	Interest[c]
	Facial expression recognition[d]
	Care[b,e]
	Emotions/empathy[f]
Affirmation/processing	Personal distress[b,e]
	Listening[c]
	Whole story[c]
	Positive[c]
	Status/role[f]
Advancement/responding	Empathic concern[b]
	Ease[c,e]
	Explain[c,e]
	Help[c,e]
	Plan[c,e]
	Thinking on your feet/influences in other areas of life[f]

[a]Each of the core skill groups includes an improvisational theater (improv) skill[5] and an empathy skill.[4] Students showed the most significant improvements in the core skill group of advancement/responding (Table 1). For the conceptual model, see Supplemental Digital Appendix 1 at http://links.lww.com/ACADMED/A921.
[b]From the Interpersonal Reactivity Index.[7]
[c]From the Consultative and Relational Empathy (CARE) measure[8] adapted for self-assessed interprofessional empathy skills.
[d]From the multiple-choice facial expression recognition quiz based on the Ekman Facial Action Coding System.[9]
[e]Significant change in mean score for the intervention group pretest to posttest.
[f]From the interview data. For themes and representative quotations, see Supplemental Digital Appendix 4 at http://links.lww.com/ACADMED/A921.

differences for either group on the facial expression recognition task from pretest to posttest (Table 2).

Qualitative findings

Course participants spoke about the positive impact of the course on the nature of their interprofessional relationships. The specific skills they brought up were related to the influence of status and role, awareness of emotions and empathy, and thinking on their feet. They also talked about how improv influenced other areas of their lives, including patient care and interactions with people outside their work life (e.g., spouses, family members). Many students talked about how they were already aware of status and role in their workplace, and they emphasized that the improv course deepened their thinking about it. For example, one student reported learning that status and role can create barriers to effective communication, especially in instances where a person with a "lower role" in the organizational hierarchy does not feel that they can speak their opinion, even if it would positively impact patient care to do so. Some interviewees also made linkages across the concepts taught during class, noting that they were more aware of the influence of status and power on communication because they had heightened their awareness through perspective taking. Representative quotations are provided in Supplemental Digital Appendix 4 at http://links.lww.com/ACADMED/A921.

Synthesis of quantitative and qualitative findings

We categorized our qualitative and quantitative findings into 3 core skill groups based on our conceptual framework: advancement/responding, attunement/perceiving, and affirmation/processing (Table 3). While the interviewees spoke to all 3 core skill groups, intervention group students who completed the validated instruments had the most statistically significant improvements in just the advancement/responding core skill group. This might mean that improv training is more effective for improving advancement/responding or that it is more difficult to measure attunement/perceiving and affirmation/processing with these tools.

Next Steps

We have continued to offer this course and have seen increasing interest in the course through word of mouth. We hope to expand our reach by partnering with other institutions to offer this course and to conduct a multisite study to determine the generalizability of our findings. Additionally, we hope to conduct a randomized controlled study with medical students and to test durability by measuring empathy again 3–6 months post.

Strengths and limitations

To the best of our knowledge, this is the first evaluation of an interprofessional curriculum based on medical improv to include measures other than student satisfaction. Unlike other studies conducted to examine medical improv, this study included a comparison group of students who completed the quantitative measures in the same weeks as the course participants.

A major limitation is that we did not randomize the intervention and comparison groups. Also, our interview participation rate was 27%. Because we drew from the sample of course participants, we could not broaden the interview sample to increase the interview participation rate.

Another limitation is that this study was conducted at one institution using a self-selected group of participants who were willing and able to take a one-credit course during the timeslot in which it was offered; this might have biased our sample. The sample was also predominately female, which could influence the generalizability of this intervention to other groups. Lastly, the composition of the comparison group was different from that of the intervention group.

Conclusions

Scores on 5 CARE items (ease, care, explain, helps, and plan) improved significantly among students who took the improv class compared with those who did not. In addition, interviewees indicated that the improv course positively influenced their interprofessional relationships, and some indicated this influence extended to patient care and people outside their work life.

Acknowledgments: The authors would like to express their deep gratitude to the study participants, who generously gave of their time and themselves during this project. They would also like to thank Katie Watson, JD, for providing the foundation for this course with her Watson/Northwestern Medical Improv Curriculum, and Belinda Fu, MD, for her expert instruction in teaching this curriculum. The authors are also indebted to Valeri Lantz-Gefroh and Lydia Franco-Hodges for their training and advice on using improvisation with health professionals and scientists. They would also love to thank Shobhina Chheda, MD, for her thoughtful feedback on the manuscript. Lastly, the authors are grateful for the 2018 y-EACH Writing Workshop participants.

Funding/Support: This project was funded by a grant from the National Endowment for the Arts through the Artworks initiative (grant no.: 16-3800-7018).

Copyright © by the Association of American Medical Colleges. Unauthorized reproduction of this article is prohibited.

Other disclosures: None reported.

Ethical approval: All study procedures were approved by the University of Wisconsin Education and Social/Behavioral Science Institutional Review Board on May 16, 2016 (ID: 2016-0461).

A.B. Zelenski is assistant professor and director of medical education, Department of Medicine, University of Wisconsin School of Medicine and Public Health, Madison, Wisconsin.

N. Saldivar is chair, Department of Theatre, University of Nevada, Las Vegas, and executive director, Nevada Conservatory Theatre, Las Vegas, Nevada.

L.S. Park is a clinical research coordinator, Department of Medicine, University of Wisconsin School of Medicine and Public Health, Madison, Wisconsin.

V. Schoenleber is a project manager, Internal Medicine Residency Program, Department of Medicine, University of Wisconsin School of Medicine and Public Health, Madison, Wisconsin.

F. Osman is a biostatistician, Department of Medicine, University of Wisconsin School of Medicine and Public Health, Madison, Wisconsin.

S. Kraemer is founder and owner, Blueprint for Education, Madison, Wisconsin.

References

1 Thomson K, Outram S, Gilligan C, Levett-Jones T. Interprofessional experiences of recent healthcare graduates: A social psychology perspective on the barriers to effective communication, teamwork, and patient-centred care. J Interprof Care. 2015;29:634–640.
2 Smith A. Theatre-Based Empathy Training in Medicine: Exploring the Spaces In Between [PhD dissertation]. Madison, WI: University of Wisconsin; 2015.
3 Nunes P, Williams S, Sa B, Stevenson K. A study of empathy decline in students from five health disciplines during their first year of training. Int J Med Educ. 2011;2:12–17.
4 Riess H, Neporent L. The empathy effect: Seven neuroscience-based keys for transforming the way we live, love, work, and connect across differences. Boulder, CO: Sounds True; 2018.
5 Fu B. Common ground: Frameworks for teaching improvisational ability in medical education. Teach Learn Med. 2019;31:342–355.
6 Watson K. Perspective: Serious play: Teaching medical skills with improvisational theater techniques. Acad Med. 2011;86:1260–1265.
7 Davis MH. Measuring individual differences in empathy: Evidence for a multidimensional approach. J Pers Soc Psychol. 1983;44:113-126.
8 Mercer SW, Maxwell M, Heaney D, Watt GC. The Consultation and Relational Empathy (CARE) measure: Development and preliminary validation and reliability of an empathy-based consultation process measure. Fam Pract. 2004;21:699–705.
9 Ekman P. Emotions Revealed: Recognizing Faces and Feelings to Improve Communication and Emotional Life. New York, NY: Owl Books; 2007.

Copyright © by the Association of American Medical Colleges. Unauthorized reproduction of this article is prohibited.