Medical Improv: Applying Improvisational Performance Techniques to Increase Empathy and Decrease Stress Among Medical Students

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AMA CMA BMA

Objectives

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1. *State the **definition** of medical improv.*
2. *List the **communication skills** that have been shown to benefit from medical improv training.*
3. *Explain the potential for medical improv to **improve empathy and reduce stress** by describing the relationship between communication skills enhanced by medical improv training and empathy and stress.*

The Problem

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- Healthcare is a **Complex Adaptive System** (Plesk & Greenhalgh, 2001)
    - Non-linear, evolving system with rules, structures, boundaries
    - Complexity in components (e.g. patient interactions)
- **Complexity and uncertainty** pose challenges for medical students

The Problem

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- Medical students experience **decreased empathy and increased stress** during medical school (Mercer & Reynolds, 2002)
    - Results in **less effective patient care and worse patient outcomes** (e.g. decreased patient satisfaction, increased medical errors) (West et al, 2018)

The Problem: Empathy

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- Empathy decline occurs particularly at transition points (e.g. **transition to clinical training**)
    - Exposure to morbidity and mortality, inadequate role models, mistreatment, etc. (Neumann et al, 2011)
- Stress can also decrease empathy (Neumann et al, 2011)

The Problem: Stress

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- Stress in medical students is often caused by **many factors** (Neumann et al, 2011)
    - Lack of social supports, mistreatment, high workload, clinical reality, etc.
- Transition points particularly stressful (Radcliffe & Lester, 2003)

Potential Solution

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- **Hypothesis:** medical improv can increase empathy and decrease stress among medical students
    - **Rationale:** unique responses, enjoyable exercises, practice with communication

Medical Improv

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- **Definition:** improvisational performance techniques and principles applied to medical fields (Watson, 2011)
  - Improv: unexpected, unplanned, unforeseen (Martellucci, 2015)
- Examples:
  - "*Yes, and…*" principles
  - Bamboo stick exercise

Our Process

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Hypothesis

Literature Search

Results

- 5 databases; search strategy
- 12 articles retrieved
  - 7 studies
  - 5 perspective/ opinion articles

Results

- Thematic analysis to code data
- **11 themes** of communication skills identified
- **Relation to empathy and stress** based on definitions of empathy and stress

Evidence to Support our Hypothesis

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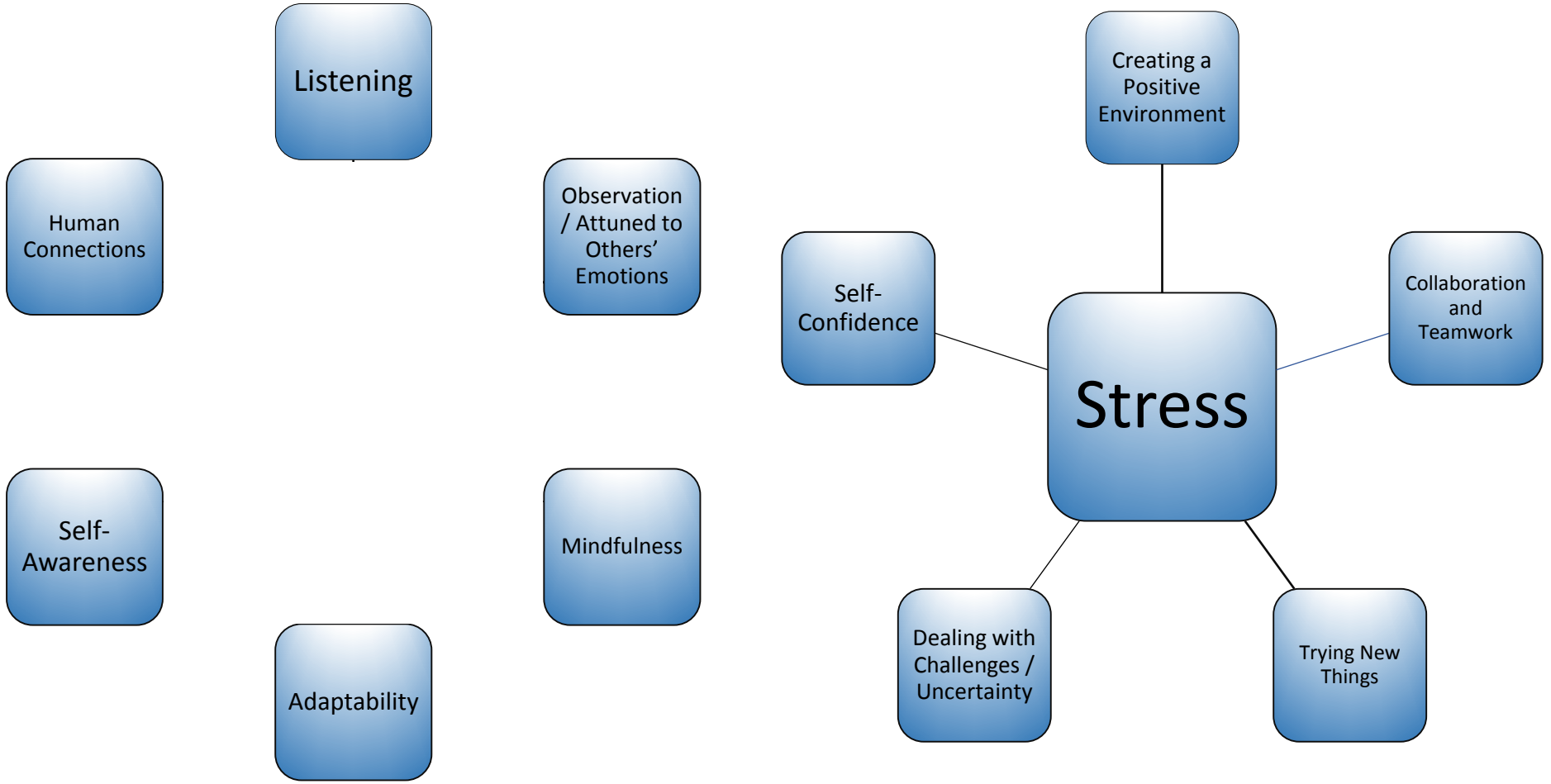

Results: Empathy

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- Understanding another's **perspective and emotions**
  - Active listening, observation, mindfulness
- Communicating **understanding**
  - Adaptability
- **Helpful/therapeutic** (Mercer & Reynolds, 2011)
  - Self-awareness, human connections

Results: Stress

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- Positive **environment**
  - Including collaboration/teamwork, generating social **supports**
  - Encourages trying new things
- Practice **dealing with challenges**
  - Increased **self-confidence**

Significance of Findings

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- Evidence demonstrating MI enhances many communication skills
- These communication skills demonstrate **potential to improve empathy and stress**

Summary

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- **The problem:** decreased empathy and increased stress during medical school
- **Medical improv** could be a solution
  - Warrants further investigation

Limitations

- Small body of literature
  - Heterogeneous methods and populations
  - Small populations studied
  - Short-term interventions, no long-term follow-up

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Questions?

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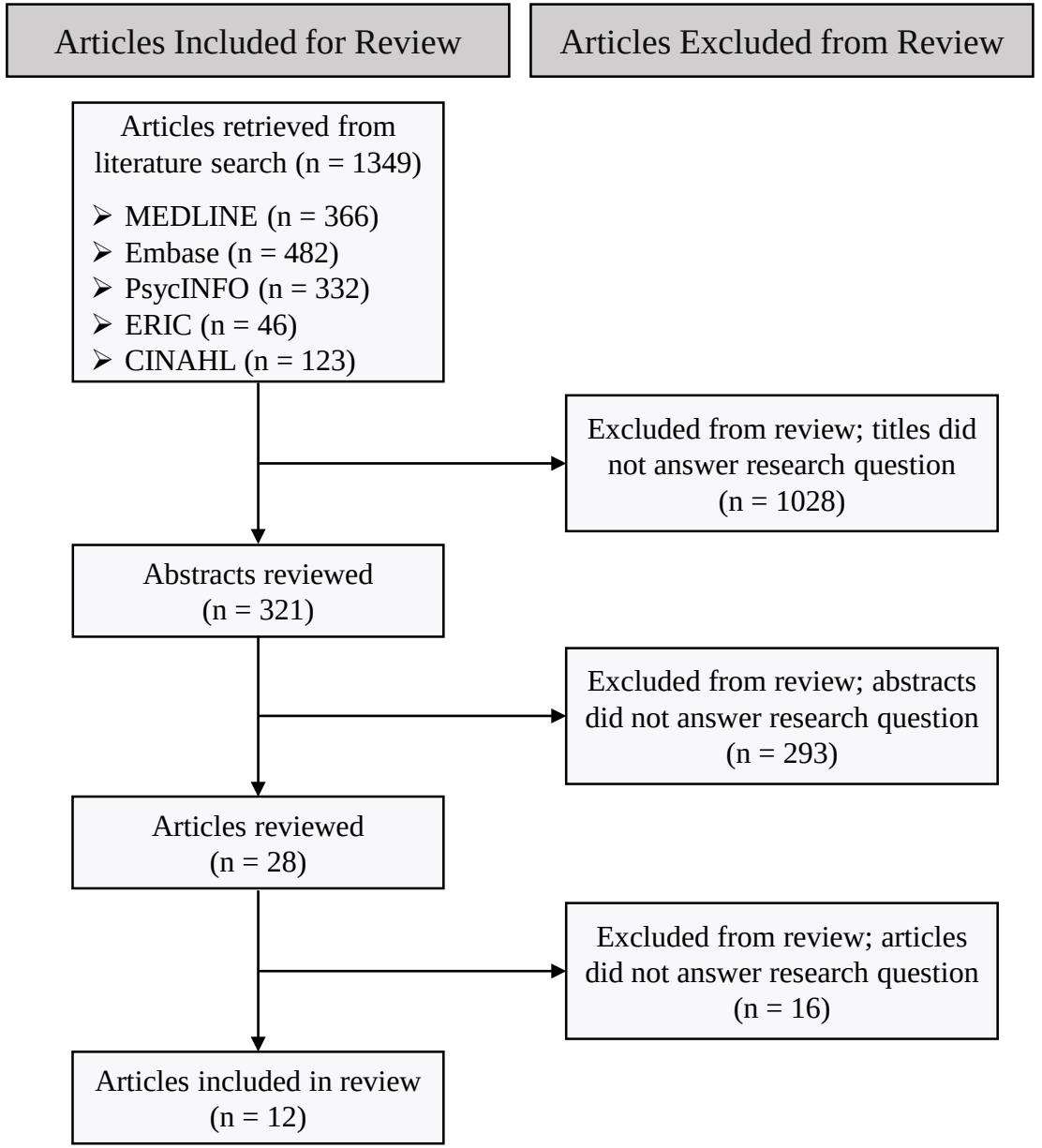
Supplemental Material



Supplemental Material

Inclusion Criteria:

1. Within medicine or related fields (including nursing, pharmacy, dentistry)
2. Involves improvisational theatre
3. Communication skills are an outcome measure

Exclusion Criteria:

1. Not within medicine or related fields
2. A script is involved,
3. Exclusively role-play involved (where an entire medical encounter is simulated with a peer or Standardized Patient (SP))
4. Communication skills are not an outcome measure
5. Conference abstract with no research data included

Supplemental Material

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References	Observation / Attuned to Others' Emotions	Listening	Self-Awareness	Mindfulness	Adaptability	Human Connections	Collaboration / Teamwork	Participating in a Positive Environment	Trying New Things / Making Mistakes	Self-Confidence	Dealing with Challenges / Uncertainty
3. Watson (2016)[IN ; MS]	x	x	x	x	x		x	x	x	x	x
4. Watson and Fu (2016)[P ; MS]	x	x			x	x	x	x	x		
10. Boesen et al (2009)[IHC ; PS]	x				x		x				x
11. Scott et al (2016)[IN ; MS]	x		x					x			x
12. Gunderman (2016)[P ; MS,AP]	x	x	x	x	x	x	x	x	x		
13. Kaplan-Liss et al (2017)[IN ; MS,NS,DS]	x	x					x				
14. Hoffman et al (2008)[IN ; MS]		x		x		x		x		x	
15. Willson (2007)[P ; MS,AP]		x	x		x					x	x
16. Hoffmann-Longtin et al (2017)[P ; MS]		x		x	x		x		x		
17. Shochet et al (2013)[IN ; MS]				x	x					x	x
18. Lewis (2016)[P]				x			x		x		
19. Chan and Watts (2017)[IN ; MS,R]											
Total	6	7	4	6	7	3	7	5	5	4	5

Examples

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“Connect through shared emotions

(Watson and Fu, 2016)

(Hoffmann-Longtin et al, 2018)

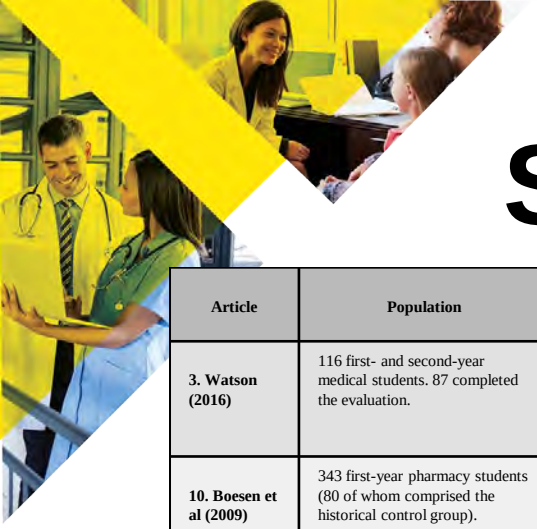
“Physicians are skilled at the process, developed a

[illegible] table

[illegible] and

[illegible] during training.”

(Watson and Fu, 2016)



Supplemental Material

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Article	Population	Duration	Example Improv Exercises/Principles	Method of Evaluation	Outcomes
3. Watson (2016)	116 first- and second-year medical students. 87 completed the evaluation.	2-hour sessions weekly for 5 weeks.	(1) 'Yes, and…" principle.	Post-course evaluation with 18 different statements about the course for participants to rank agreement to on a 5-point Likert scale. Participants were also able to provide narrative responses to 8 questions about the course.	Post-course evaluations revealed perceived improvement in many skills (such as listening and self-confidence), participants' beliefs that studying improv will improve ability to be a good doctor, and that participants would generally recommend the course to others.
10. Boesen et al (2009)	343 first-year pharmacy students (80 of whom comprised the historical control group).	12 1-hour sessions over a 16-week period.	(1) Repeated pattern: a group stands in a circle; one person makes eye contact with another and says their name, the second person does the same to someone else, and so on. Different categories of words with people speaking to each other in different orders are added to increase complexity. (2) Advancing a conversation: "Yes, and…" principle. (3) Group communication: one person has the 'focus' at a time. The focus is when only a single person is moving at a time. Start by giving others the focus through eye contact; progress to taking the focus through eye contact.	Standardized Patient Examination (SPE) scores compared to historical control SPE scores. Student/evaluator feedback from SPEs. Student evaluations and reflective journals.	Post-course SPE scores improved compared to historical control, which was due to an increased recognition of cues from the SPs.
11. Scott et al (2016)	26 medical students and 1 person from Australian Medical Association State. A total of 29 evaluations were completed.	3 3-hour workshops. 25 participants attended 1 workshop; 1 attended 2, 1 attended all 3 workshops.	(1) Status: each person is assigned a status level. Everyone is encouraged to greet others and modify their behaviours according to the other person's status level. (2) Leadership: one person does a particular movement while another person copies their movements. (3) Ensemble: trust exercises (e.g. catching a partner as they fall), connectedness (two people moving a bamboo stick together using only one finger each on either end of the stick), and acting out scenes featuring cohesiveness and lack thereof.	Post-workshop evaluation, which included open-ended text asking participants to describe what they had learned, and closed-ended questions about workshop activities. Some participants also participated in a focus group/interview to discuss their perceived impact of the course.	The majority thought the workshop activities were good or very good. Free text themes related to participant's rationale for attending the sessions, benefits and challenges of the workshops, and implications for medical education.
13. Kaplan-Liss et al (2017)	56 medical students (mostly in second-year), 8 nursing students, and 12 dental students. All 76 participants completed evaluations.	6 weekly 3-hour sessions.	(1) "Yes, and…" (2) Mirror exercise: without talking, one person leads while the other has to follow exactly what they are doing.	Post-course evaluations, which included participants' rating of the course, their interest in having the course embedded in their curriculum, and their perceived relevance of the course to them as future healthcare providers.	Participants believed they were better able to understand the perspectives of patients, explain health issues with less jargon, listen more intently, and learn medical material more effectively.
14. Hoffman et al (2008)	18 first-year medical students who participated in the sessions and completed the evaluations.	10 weekly 1-hour sessions.	Exercises focusing on particular skill sets: "portraying social status, improving and directing attention, telling stories, and working as a team."	Post-course evaluations, which used a 5-point scale. Evaluations also included a debriefing session.	Participants reported improved communication skills, increased confidence within interactions with patients, and felt that the course was worth repeating.
17. Shochet et al (2013)	2 cohorts of 19 second-year medical students. 27 participants completed the post-course survey.	4 weekly 2-hour workshops.	(1) "So what you're saying is…": one person tells a partner something. The partner rephrases what was said, then the first person rephrases what the partner says, and so on. (2) "Yes, and…"	Survey, asking whether participants felt the course would help with interactions with patients, which exercises they enjoyed the most, and free text for additional comments.	Participants often signed up for the course because of a desire to try something new and different; everyone who attended enjoyed the course. Students felt the content was relevant to patient care. They also felt the course allowed freedom to be creative/oneself, gain confidence in the role of the physician, be flexible in communication, and highlighted the importance of accepting others without judgment.
19. Chan and Watts (2017)	38 first-year categorical and medicine/pediatrics residents. 35 completed the evaluation.	1 4-hour workshop.	No information provided.	Post-course evaluation; 19 questions with a 5-point Likert scale for participants to rank their level of agreement.	After the second and third iteration of the workshop, participants felt that studying improv would make them a better doctor (100%). Only 40% agreed with this statement after the first iteration of the workshop.