A Prospective Study on Outcomes of an Empathy Intervention among Pre-Clerkship Physician Associate (PA) Students

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Introduction

• **Empathy is a cornerstone of patient-centered care** and is closely linked to better patient satisfaction, adherence, and clinical outcomes.
• **Research consistently shows empathy declines** as healthcare students progress through training, particularly during pre-clerkship years.
• **PA students face unique challenges** in maintaining empathy due to fast-paced curricula and high stress levels.
• **Short-term interventions have demonstrated efficacy** in increasing empathy scores temporarily, but sustained improvement remains elusive.

Objective

To evaluate whether a structured, 3-week empathy intervention (i.e., simulated loss of dominant hand, vision, and speech) can produce both immediate and sustained improvements in empathy scores among pre-clerkship Physician Associate (PA) students.

Methods

• Quasi-experimental, single-center study with a pre-test/post-test design
• Participants: 1st- and 2nd-year PA students enrolled in the Stanford University Master of Science in PA Studies Program.
• Intervention Group: 3-week empathy intervention simulating temporary loss of dominant hand, vision, and speech; one simulation per week.
• Control Group: Continued standard curriculum without additional empathy-focused activities.
• Empathy measured using the Jefferson Scale of Empathy–Health Profession Students (JSE-HPS) at baseline, 1-week post-intervention, and 90 days post-intervention
• Study data were collected and managed using REDCap
• Approved by the Stanford University Institutional Review Board

Results

Study Population Recruitment

91% of eligible participants recruited
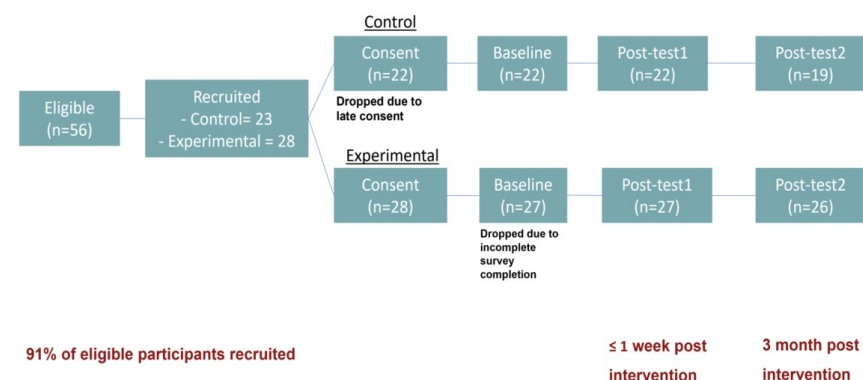
Results

JSE Student Survey Results

	Baseline		Post-test 1[a]		Post-test 2[b]	
	Mean Score (SD)	Range	Mean Score (SD)	Range	Mean Score (SD)	Range
Intervention (n=26)	120.3 (8.9)	101-132	123.0 (8.0)	109-134	120.0 (8.3)	103-132
Control (n=19)	111.7 (11.6)	91-129	115.0 (11.6)	87-132	116.1 (12.7)	89-137

[a] JSE-HPS administered ≤1 week after the intervention
[b] JSE-HPS administered 90 days after the intervention

Empathy Score vs Time
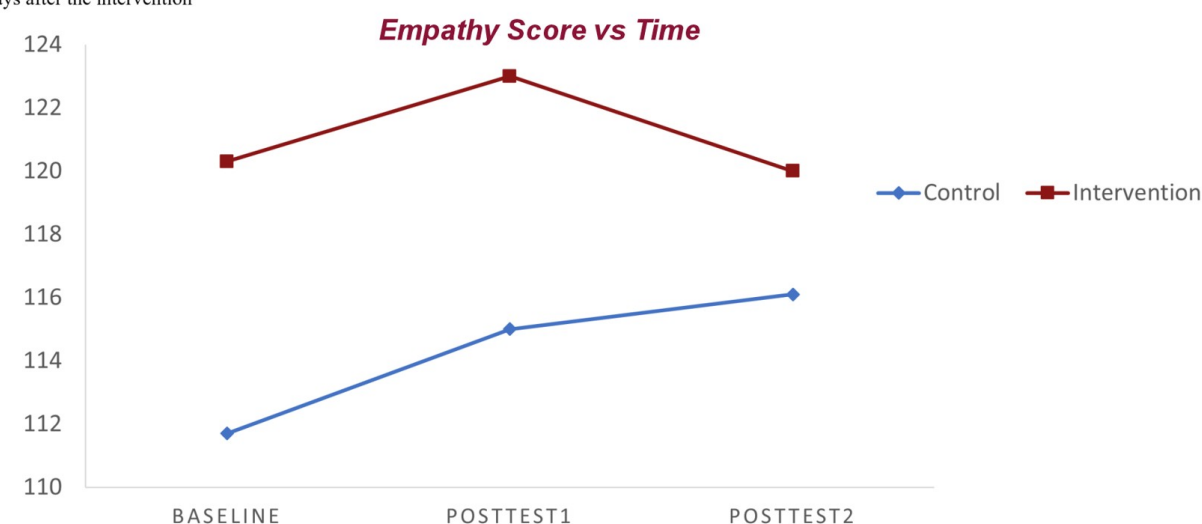
• **Significant Short-Term Increase**: Participants in the intervention group showed a statistically significant rise in empathy scores 1-week post-intervention (p = 0.043).
• **Decline Over Time**: The initial empathy boost in the intervention group was not sustained at 90 days (p = 0.2002).
• **Control Group Unchanged**: Control-group participants exhibited no significant shifts in empathy scores over the same time points.
• **Group-by-Time Interaction**: Mixed-effects modeling confirmed a significant interaction effect, indicating that the trajectory of empathy scores differed notably between the two groups.

Student Physician Associate (PA) Demographics

	Control (n= 19)	Intervention (n= 26)	p value
Age, mean (SD)	27.6 (3.1)	26.1 (3.6)	0.015
Gender Identity, n (%)			.999
Healthcare hours, mean (SD)	4277.9 (3469)	3317.3 (1790)	0.263
Family Social Status, n (%)			.999
Person with disability, n (%)			.999
Family member with disability, n (%)			.999

Limitations

• **Single-center design with a small convenience sample** may limit the generalizability of the findings to broader PA student populations.
• **Self-reporting of empathy** could introduce social desirability bias and under- or overestimation of true empathy levels.
• **Lack of blinding** to intervention group assignments may have influenced the participant responses.

Conclusions

• **Short-Term Gains:** A 3-week empathy intervention effectively increases empathy scores in the short term.
• **Need for Sustained Strategies:** Empathy levels returned to baseline at the 90-day mark, underscoring the need for ongoing or repeated interventions.
• **Curriculum Implications:** Incorporating structured empathy exercises and reinforcement into PA programs may help maintain empathy levels over time.
• **Future Directions:** Longer follow-up and broader participant samples are warranted to develop generalizable strategies that bolster empathy in healthcare education.