



Nurturing compassion and cultural humility in health professions students through a brief mindfulness practice

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ABSTRACT

Objective: Given the importance of compassion and cultural humility in healthcare providers, the study aspired to investigate the effects of a brief mindfulness practice on compassion and cultural humility in health professions students.

Methods: A quantitative, one-group pre-test/post-test study was conducted with 58 participants from undergraduate health profession education programs in the United States. Participants completed questionnaires measuring mindfulness, compassion, and cultural humility before and after engaging in an eight-minute loving-kindness meditation exercise three to four times per week for two weeks.

Results: There were statistically significant increases in mindfulness, compassion, and cultural humility after participants engaged in the brief loving-kindness meditation exercise, with small to moderate effect sizes.

Conclusion: Brief mindfulness practices may be helpful for cultivating essential qualities such as compassion and cultural humility in health professions students.

Innovation: The findings add to the research gap about the effects of mindfulness on health professions students' compassion and cultural humility. Using mindfulness as a training tool in health professions education may foster compassion, cultural humility, and mindfulness in health professions students who will become healthcare providers, addressing individual health concerns but also broader social issues related to social justice and health equity.

1. Introduction

Since health professionals interact with diverse clientele, it is pivotal that these individuals have embody a fusion of compassion and cultural humility, so that they act in culturally respectful and sensitive ways. Compassion is defined as having concerns for the suffering of others and wishing to help to reduce distress [1]. When health professionals demonstrate compassion in interactions with patients, they learn about their patients as whole persons, foster healing alliances, and lessen suffering [2]. Cultural humility involves “having an interpersonal stance that is other-oriented rather than self-focused, characterized by respect and lack of superiority towards an individual’s cultural background and experience” (p. 353) [3]. When health professionals embody cultural humility, they acknowledge cultural biases, strive to overcome these biases, and continuously reflect on their own social position and interactions with other people from diverse cultural backgrounds [4,5].

Compassion and cultural humility have many benefits in healthcare.

When workers demonstrate compassion, patients’ satisfaction, treatment adherence, and overall health increase [6]. Likewise, when healthcare professionals exhibit cultural humility, communication, safety culture, perceptions of learning opportunities, the cohesiveness of interprofessional teams, and health equity are enhanced [7-10]. Therefore, compassion and cultural humility can help mitigate the inequities that occur when health professionals hold implicit biases toward marginalized individuals [11]. Hence, it is important to instill these traits in health professions students who will become future health professionals [12].

Mindfulness is “a metacognitive skill involving attentional control (including paying attention to one’s experience in the present moment), emotional regulation, self-awareness, and a nonjudgmental and curious orientation toward one’s experiences” [11]. Research suggests the potential of mindfulness for fostering compassion and cultural humility in health professions students. For instance, engagement in loving-kindness meditation was found to improve compassion as measured

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by other-focused emotions and perceived social connectedness [13]. Despite a lack of empirical research on mindfulness and cultural humility, recent studies revealed that brief loving-kindness meditation exercises could decrease implicit social biases and discriminatory behaviors [14-16]. These findings suggest that mindfulness may also facilitate cultural humility, as health professionals self-examine and self-regulate with increased awareness of thought processes and decreased cognitive workload [11]. Hence, mindfulness serves as a promising tool to cultivate compassion and cultural humility in health professions students, which could ameliorate health inequity as they become independent health professionals upon graduation [11,17,18].

1.1. Purpose of the study

Compassion and cultural humility are important in healthcare, and mindfulness facilitates other qualities relevant to them. However, a gap in the literature about using mindfulness to cultivate compassion and cultural humility currently exists. As such, the purpose of this study was to examine the effects of a brief mindfulness practice on compassion and cultural humility in health professions students. Three research questions (RQs) guided the study: RQ 1) Is there a statistically significant difference in health professions students' mindfulness awareness before and after engaging in a brief mindfulness practice? RQ 2) Is there a statistically significant difference in health professions students' compassion before and after engaging in a brief mindfulness practice? RQ 3) Is there a statistically significant difference in health professions students' cultural humility before and after engaging in a brief mindfulness practice?

2. Methods

To address the research questions, a quantitative, one-group pre-test/post-test study was conducted. The a priori analysis computed with G*Power Version 3.1.9.7 software [19] indicated that the minimum sample size needed to attain 80 % power for identifying a medium effect (0.50) [20] at a significance level of 0.05 with two tails for a paired-samples t-test was 34 participants. After Institutional Review Board approval, a convenience sampling technique was chosen to recruit participants from undergraduate health profession education programs in a four-year college in the Midwestern United States and a community college in the Northwestern United States through emails.

To measure mindful awareness, compassion, and cultural humility, the Mindful Attention Awareness Scale (MAAS) [21], Santa Clara Brief Compassion Scale (SCBCS) [1], and Cultural Humility Scale (CHS) were utilized [3], all of which have demonstrated good validity and reliability. Then, participants were sent a questionnaire where they provided informed consent and responded to questions from the instruments. One day after participants completed the questionnaire, they received an eight-minute loving-kindness meditation audio recording based on Levett-Jones' meditation script [22], which they used to guide themselves through the mindfulness activity. They were instructed to engage in the activity three to four times per week for two consecutive weeks. After the two-week period, participants received a follow-up questionnaire to verify that they had engaged in the mindfulness activity as directed. Then, they were asked to respond to the instrument items again within three days of receipt.

3. Results

There were 95 health professions students who participated in the pre-test. However, 35 of them did not complete the post-test, leading to an attrition rate of 36 %. Two participants did not provide adequate datasets. Thus, 58 participants' datasets were included in the analysis. Table 1 contains information about the participants' demographics such as race, gender, age range, and field of study, whereas Table 2 illustrates information about the participants' pre- and post-test scores for

Table 1 Demographics

	N	%
Race		
Asian	6	10.3 %
Biracial or Multiracial	4	6.9 %
Black/African	4	6.9 %
Latinx	4	6.9 %
White/Caucasian	40	69.0 %
Gender		
Man	7	12.1 %
Woman	51	87.9 %
Age		
18-24	34	58.60 %
25-34	8	13.80 %
35-44	8	13.80 %
45-54	6	10.30 %
55-64	2	3.40 %
Field of Study		
Nursing	23	39.70 %
Pre-Occupational Therapy	1	1.70 %
Pre-Physician Assistant	4	6.90 %
Radiography	8	13.80 %
Respiratory Care	1	1.70 %
Sonography	7	12.10 %
Unspecified Healthcare Studies	14	24.10 %

Table 2 : Paired samples statistics.

		Statistic	Bootstrap			
			Bias	Std. Error	95 % Confidence Interval	
					Lower	Upper
Compassion Post-test	Mean	5.959	-0.0039	0.101	5.752	6.141
	N	58				
	Std. Deviation	0.759	-0.013	0.101	0.566	0.955
Compassion Pre-test	Mean	5.679	-0.001	0.112	5.452	5.9
	N	58				
	Std. Deviation	0.852	-0.016	0.083	0.678	1.007
Humility Post-test	Mean	4.441	-0.003	0.058	4.319	4.55
	N	58				
	Std. Deviation	0.477	-0.004	0.052	0.367	0.573
Humility Pre-test	Mean	4.227	-0.002	0.068	4.095	4.355
	N	58				
	Std. Deviation	0.527	-0.004	0.054	0.414	0.625
Mindfulness Post-test	Mean	3.977	-0.001	0.1	3.772	4.18267
	N	58				
	Std. Deviation	0.796	-0.01	0.07	0.647	0.921
Mindfulness Pre-test	Mean	3.553	-0.0002	0.107	3.351	3.765
	N	58				
	Std. Deviation	0.827	-0.01	0.072	0.671	0.951
	Std. Error	0.109				

^a Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples.

Table 3
: Bootstrap for paired samples test.

	Mean	Bootstrap			95 % Confidence Interval		t	df
		Bias	Std. Error	Sig. (2-tailed)	Lower	Upper		
Compassion Post-test - Compassion Pre-test	0.2793	-0.0030	0.0943	0.01	0.0897	0.4653	2.944	57
Humility Post-test - Humility Pre-test	0.2140	-0.0005	0.0535	<0.001	0.1049	0.3174	3.929	57
Mindfulness Post-test - Mindfulness Pre-test	0.4242	-0.0008	0.0937	<0.001	0.2495	0.6159	4.44	57

mindfulness, compassion, and cultural humility. Paired samples *t*-tests with bootstrapping indicated statistically significant increases in the compassion ($M\ Diff = 0.279, SD = 0.723, t(57) = 2.944, p = .01, d = 0.387$), cultural humility ($M\ Diff = 0.214, SD = 0.415, t(57) = 3.929, p < .001, d = 0.516$), and mindfulness ($M\ Diff = 0.424, SD = 0.728, t(57) = 4.44, p < .001, d = 0.583$) of health professions students, with small to moderate effect sizes (see [Tables 3](#) and [4](#)).

4. Discussion and conclusion

4.1. Discussion

The study revealed statistically and practically significant improvements in compassion, cultural humility, and mindfulness following the brief loving-kindness mindfulness exercise. The findings align with previous research suggesting the benefits of mindfulness interventions to promote compassion and cultural humility among health professionals [2-5]. Mindfulness interventions likely can increase self-awareness, which may impact students' sense of compassion and ability to attune to the feelings and experiences of themselves and of their patients. Moreover, they may promote cultural humility by encouraging students to approach diverse patients with respect and curiosity, thus cultivating a more empathetic and culturally humble healthcare practice.

There are several limitations in this study. First, despite adequate power, the small sample size may limit the generalizability of the findings. Second, social desirability bias might impact how students self-report on these instruments. Third, this was a short-term intervention without a control group, so while there were immediate improvements, the long-term sustainability of these effects is unclear. Furthermore, it is not known if these changes observed are directly due to the intervention. Future research could address some of these limitations. For example, a similar study with a larger sample of more diverse participants and a longitudinal design would be advised. Furthermore, a qualitative study could explore health professions students' perceptions.

4.2. Innovation

This study introduces an innovative approach to enhancing compassion and cultural humility among health professions students

Table 4
: Paired samples effect sizes

	Standardizer	Point Estimate	95 % Confidence Interval		
				Lower	Upper
Compassion Post-test - Compassion Pre-test	Cohen's d	0.7225	0.387	0.118	0.652
Humility Post-test - Humility Pre-test	Cohen's d	0.4148	0.516	0.240	0.788
Mindfulness Post-test - Mindfulness Pre-test	Cohen's d	0.7275	0.583	0.302	0.859

through brief mindfulness practices, such as loving-kindness meditation. While previous research has highlighted the importance of mindfulness, compassion, and cultural humility in healthcare contexts, there has been limited investigation into the direct impact of brief mindfulness interventions on these outcomes. This study, utilizing a one-group pre-test/post-test design, addresses this research gap by demonstrating the effectiveness of a targeted, time-efficient mindfulness intervention for improving these crucial attributes [23,24].

The findings provide robust quantitative evidence for the practical benefits of integrating brief mindfulness practices into health professions education. By incorporating these practices into curricula, educators can foster future healthcare providers' holistic development, enhancing their personal and professional growth. Additionally, this approach prepares students to deliver more empathetic and culturally sensitive care, which is essential for improving patient-provider relationships and patient outcomes [23,24]. Finally, this novel approach has significant implications for broader societal issues related to social justice and health equity. This innovation addresses the need for effective educational interventions incorporating mindfulness to improve healthcare delivery and provider-patient interactions [23,24].

To achieve these outcomes, it is recommended that mindfulness practices, such as loving-kindness meditations, be interwoven throughout the entire curriculum, including clinical rotations [25]. Practical implementations can involve brief mindfulness interventions in class, such as mini-meditations or exercises focused on mindful communication, eating, and movement. Additionally, health profession students should be encouraged to practice mindfulness in their daily lives outside of school and clinical training, promoting holistic self-care, which may benefit healthcare workers' longevity. Furthermore, by providing opportunities for reflection and collaborative discussion about these practices, students can effectively monitor and enhance their mindfulness development [25].

This study bridges the fields of health promotion, health education, and health communication, offering a transformative approach to healthcare instruction. Demonstrating a scalable and accessible mindfulness intervention enriches the training of healthcare providers and fosters a culture of empathy and cultural sensitivity. This innovation contributes to improved health outcomes and addresses broader social issues related to healthcare equity and inclusion [23,24].

4.3. Conclusion

This study investigated the effects of a brief mindfulness practice on health professions students' compassion and cultural humility. The results highlight the potential benefits of brief mindfulness interventions in nurturing compassion, cultural humility, and mindfulness among health professions students. The goal of health education programs is to graduate compassionate health professionals with strong clinical skills, including the ability to work with patients from diverse backgrounds compassionately and mindfully [25]. As health profession students transition into healthcare settings to serve as providers, compassion and cultural humility can aid them in promoting patient-centered care, having an other-oriented approach to patient care, and demonstrating increased respect and appreciation for patients' diverse cultural backgrounds.

Ethics approval statement

The authors obtained Institutional Review Board (IRB) approval prior to conducting the study.

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CRediT authorship contribution statement

Justina Or: Writing – review & editing, Writing – original draft, Supervision, Software, Resources, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Amy M. Anderson:** Writing – review & editing, Writing – original draft, Investigation, Data curation. **Elizabeth A. Golba:** Writing – review & editing, Writing – original draft, Project administration, Investigation, Data curation, Conceptualization.

Declaration of competing interest

We, the authors, declare that we have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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