Factors Associated With Well-being and Confidence in Providing Compassionate Care

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Abstract
We explored the relationships between potentially modifiable factors (mindfulness and self-compassion), intermediate factors (resilience and stress), and outcomes of interest in a cross-sectional study of medical trainees (compassionate care and clinician well-being). Among the 12 participants, the average age was 27.6 years. Mindfulness and self-compassion were positively associated with confidence in providing calm, compassionate care ($r = 0.91$ and $0.81$, respectively; $P < .01$); they were also positively correlated with clinician resilience ($P < .01$), which was correlated with clinician mental health ($r = 0.83; P < .01$). Perceived stress was strongly and significantly negatively correlated with all measures ($rs$ ranging from $–0.62$ for flourishing to $–0.92$ for confidence in delivering calm, compassionate care; $P < .05$ for all correlations). Given the positive correlations between mindfulness and self-compassion with both clinician well-being and confidence in providing calm, compassionate care, interventional studies are warranted to determine what kind of training most efficiently and effectively improves trainee mindfulness and self-compassion.

Keywords
compassion, education, medical students, meditation, mindfulness, stress, training

Effective patient-centered health care relies on the ability to be calm and compassionate, effectively comforting distressed patients in the face of sometimes stressful circumstances. Stress is ubiquitous in health care, particularly in times of rapid change in which physicians experience a diminished sense of control. Stress can increase psychological distress,1-3 adversely affect attention4 and concentration,5 and impair decision making.6,7 Stress also may lead to increased burnout,8 which is associated with poor quality of care.9,10

To improve the quality of care and clinician well-being, a growing number of programs aim to improve clinician mindfulness and/or compassion for self and others.11-15 An early study by Shapiro and colleagues13 found that an 8-week mindfulness-based stress reduction program was associated with decreases in anxiety and distress and increases in empathy among premedical and medical students. Another effective mindfulness-based communication program involved an intensive 8-week phase of 2.5-hour weekly in-person group meetings followed by a 10-month maintenance phase of 2.5 hours per month.12 A briefer intervention at the University of Wisconsin was evaluated with 30 primary care clinicians using a pre/post training design; in this pilot study, 18 hours of mindfulness training were followed by significant decreases in burnout, depression, anxiety, and perceived stress, without changes in resilience or compassion.16 Nurses and psychologists, too, have benefited from mindfulness and self-compassion training in small studies evaluating the effect on burnout.17,18

Before offering in-person or online training to our trainees, we wanted to test a conceptual model relating potentially trainable qualities to stress, resilience, and confidence in the ability to provide calm, comforting care. Were mindfulness and self-compassion associated with well-being and confidence in providing calm, compassionate care in a convenience sample of health professionals who had elected to enroll in a seminar on meditation?

Methods
This was a small cross-sectional proof of concept study. Medical students, residents, and 1 faculty member who participated in an elective seminar on integrative medicine focusing on meditation voluntarily completed an anonymous questionnaire before the seminar. Of the 15

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clinicians present, 12 completed questionnaires; the 3 noncompleters included a student whose wife was expecting a baby imminently, a faculty member, and the spouse of a student.

The questionnaire included age and sex and standardized, widely used questionnaires measuring mindfulness (Freiburg Mindfulness Inventory [FMI])\textsuperscript{19} and self-compassion (Neff’s Self-Compassion Scale).\textsuperscript{20} Self-compassion is distinct from self-esteem, self-pity, and self-indulgence in that it focuses on kindness toward self as a human being, not better or worse than other humans. We measured purported intermediate factors such as sleep (PROMIS sleep scale),\textsuperscript{21} flourishing (Diener’s Short Flourishing Scale),\textsuperscript{22} Global mental and physical health (PROMIS global health scales),\textsuperscript{23} resilience (Smith’s Brief Resilience Scale),\textsuperscript{24} and stress using both a 0–10 numeric rating scale (NRS) and Cohen’s 10-item Perceived Stress Scale.\textsuperscript{25} We assessed the primary outcome using a 9-item questionnaire developed for a previous training program aimed at increasing clinicians’ capacity to provide calm, compassionate care (Calm Compassionate Care Scale [CCCS]).\textsuperscript{26,27} The CCCS contained 6 questions about confidence in providing calm, focused, compassionate care and 3 questions about behavior—the percentage of time the clinician actually provided this kind of care in practice.

Data were entered into an online database by a research assistant blind to the study question, exported into a spreadsheet, de-identified and reformatted, and imported into Statistical Analysis System (SAS 9.2) for scoring. Univariate analysis was employed to evaluate the distribution of each variable including demographic variables and then questionnaire scores. Finally, correlations were calculated among all study outcome variables.

### Results

The 12 participants had an average age of 27.6 years and ranged in age from 22 to 55 years. The sample was 59% female; the majority (83%) reported having no mind-body training in the past 3 months.

Average scores on the study questionnaires are shown in Table 1. Global physical health scores were slightly better than average (56 compared with a population mean t-score of 50); sleep scores were somewhat worse than average (42.5 compared with a population mean of 50); and stress scores on a simple numeric rating scale were moderately high (5.6 out of a maximum of 10) but somewhat lower on the Perceived Stress Scale than those reported in other studies of medical trainees (13.5 compared in this sample with 15.7 prior to mindfulness training in another study\textsuperscript{28} and 19.7 in Malarkey’s study at the same institution\textsuperscript{29}).

The correlation matrix among the study variables is shown in Table 2 and illustrated in Figure 1. Global physical health, sleep, and the numeric rating scale for stress were not significantly correlated with any other variable and are not included in the table or figure. Perceived stress was substantially and significantly negatively associated with both clinician global mental health ($r = -0.78$; $P < .01$) and confidence in providing calm, comforting care ($r = -0.92$; $P < .01$). It was also negatively correlated with self-compassion ($r = -0.79$; $P < .05$) and resilience ($r = -0.88$; $P < .01$).

**Mindfulness** scores on the Freiburg Mindfulness Inventory were a mean of 36.8, which is similar to the normative sample used by Walach in describing the instrument.\textsuperscript{13} Mindfulness scores were inversely related to perceived stress ($r = -0.69$; $P < .05$) and positively correlated with self-compassion ($r = 0.73$; $P < .05$), resilience ($r = 0.59$; $P < .05$), flourishing ($r = 0.67$; $P < .05$), and confidence in providing calm, compassionate care ($r = 0.87$; $P < .01$).

**Self-compassion** scores were a mean of 3.1, which is somewhat lower than the item averages of 4.1 measured by Neff\textsuperscript{30} and 3.8 measured by Smeets,\textsuperscript{31} both in studies of college students. Self-compassion scores were strongly associated with mental health ($r = 0.83$; $P < .01$), mindfulness ($r = 0.73$; $P < .05$), resilience ($r = 0.89$; $P < .05$), and confidence in providing calm, compassionate care ($r = 0.91$; $P < .01$).

**Confidence in providing calm, compassionate care** was strongly positively correlated with both mindfulness ($r = 0.81$; $P < .01$) and self-compassion ($r = 0.91$; $P < .01$). It was also positively correlated with clinician global mental health ($r = 0.75$; $P < .01$) and resilience ($r = 0.87$; $P < .01$).

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**Table 1. Sample Description of Study Variables.**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean (SD)</th>
<th>Range</th>
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</thead>
<tbody>
<tr>
<td>Calm care</td>
<td>58.1 (14.3)</td>
<td>41-77</td>
</tr>
<tr>
<td>Self-compassion</td>
<td>3.1 (0.5)</td>
<td>2.4-3.8</td>
</tr>
<tr>
<td>Flourishing</td>
<td>49.3 (5.1)</td>
<td>37-56</td>
</tr>
<tr>
<td>Mental health (PROMIS)</td>
<td>49.7 (6.9)</td>
<td>38.8-62.5</td>
</tr>
<tr>
<td>Physical health (PROMIS)</td>
<td>56.1 (5.1)</td>
<td>47.7-67.7</td>
</tr>
<tr>
<td>Mindfulness (FMI)</td>
<td>36.8 (6.9)</td>
<td>26-46</td>
</tr>
<tr>
<td>Resilience</td>
<td>3.8 (0.4)</td>
<td>3.3-4.3</td>
</tr>
<tr>
<td>Sleep (PROMIS)</td>
<td>42.5 (8.9)</td>
<td>32-58</td>
</tr>
<tr>
<td>Stress (NRS: 0-10)</td>
<td>5.6 (2.1)</td>
<td>3-9</td>
</tr>
<tr>
<td>Stress (PSS)</td>
<td>13.5 (3.5)</td>
<td>10-19</td>
</tr>
</tbody>
</table>

**Table 2. Correlation Matrix.**

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calm care</td>
<td>1</td>
<td>0.91</td>
<td>0.57</td>
<td>0.75</td>
<td>0.73</td>
<td>0.87</td>
<td>-0.92</td>
</tr>
<tr>
<td>Self-compassion</td>
<td>1</td>
<td>0.57</td>
<td>0.83</td>
<td>0.73</td>
<td>0.89</td>
<td>0.79</td>
<td>0.79</td>
</tr>
<tr>
<td>Flourishing</td>
<td>1</td>
<td>0.78</td>
<td>0.67</td>
<td>0.67</td>
<td>0.67</td>
<td>0.62</td>
<td>0.78</td>
</tr>
<tr>
<td>Mental health</td>
<td>1</td>
<td>0.57</td>
<td>0.83</td>
<td>0.83</td>
<td>0.78</td>
<td>0.78</td>
<td>0.83</td>
</tr>
<tr>
<td>Mindfulness</td>
<td>1</td>
<td>0.59</td>
<td>0.69</td>
<td>0.69</td>
<td>0.83</td>
<td>0.83</td>
<td>0.83</td>
</tr>
<tr>
<td>Resilience</td>
<td>1</td>
<td>-0.88</td>
<td>0.73</td>
<td>0.73</td>
<td>0.73</td>
<td>-0.79</td>
<td>0.79</td>
</tr>
<tr>
<td>Stress (PSS)</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Abbreviations: Calm care, 9-item scale reflecting confidence in providing peaceful and calm care to patients; Flourishing, Flourishing Scale; FMI, Freiburg Mindfulness Inventory; Mental health, PROMIS Global Mental Health short-form; NRS, 1-item (0-10 scale) self-reported stress; Physical health, PROMIS Global Physical Health short-form; PSS, Perceived Stress Scale; Resilience, Brief Resilience Scale; Self-compassion, self-compassion scale; Sleep, PROMIS sleep disturbance 4-item short-form.

The following were omitted due to lack of significance: global physical health, compassion, self-compassion scale.
Clinician mental health measured on the PROMIS global health screen was strongly associated with self-compassion \((r = 0.83; P < .01)\), flourishing \((r = 0.78; P < .01)\), and resilience \((r = 0.83; P < .01)\). Although the association with mindfulness was moderately strong, it was not statistically significant in this small sample \((r = 0.57)\).

**Discussion**

This pilot study supports the concept that mindfulness and self-compassion are strongly related to outcomes of interest to medical educators: clinician well-being and confidence in providing calm, compassionate care. These data confirm earlier studies and extend their findings by assessing self-compassion among trainees.

In our sample, both mindfulness and self-compassion were inversely associated with perceived stress and positively correlated with clinician resilience, flourishing, and confidence in providing calm, compassionate care. This finding supports the emerging practice of offering mindfulness training to clinicians in practice and in training.\(^{12,13,15,28,32-34}\) Few studies have examined the role of self-compassion, extending kindness and care toward oneself, in health professionals as a moderating influence on the care provided to others.\(^{35,36}\) An emerging body of work suggests that self-compassion is associated with positive mental health and that it can be cultivated with training.\(^{37-40}\) This study was not designed to determine the most effective or efficient form of mindfulness or self-compassion training for clinicians or to identify a target group that might benefit from such training.

As an exploratory pilot project, this study suffers from several limitations. The sample size was small, and we were surprised to find such strong and statistically significant associations. Prudence suggests that these findings should be replicated in larger, more diverse groups of trainees and practicing clinicians. There is no gold standard for measuring confidence or the actual ability to provide calm, compassionate care, but we used a measure that had face and construct validity in an earlier study.\(^{26}\) As a study examining correlations, this study was not designed to identify clinicians or trainees who might benefit most from additional training in mindfulness or compassion or to identify the most effective or efficient ways to provide such training.

Nevertheless, despite these limitations, this study does offer additional support to the growing idea that clinician mindfulness and self-compassion are relevant skills and qualities for clinician well-being and confidence in providing calm, compassionate care. Additional research is needed to determine whom to train and how to best deliver that training.

**Authors’ Note**

This work was conducted at The Ohio State University College of Medicine. Jennifer Long assisted in distributing and collecting the study surveys and ensuring that they were accurately entered in the project database.

**Author Contributions**

KO participated in drafting and editing the manuscript; conducted all data analyses; and participated in data interpretation and graphing. KJK conceived of the study, wrote and edited the drafts, and participated in data interpretation.

**Declaration of Conflicting Interests**

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.
References


