

# Evaluation of a Brief Mindfulness Strategy in the Classroom: A Feasibility Study

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## Abstract

**Purpose:** The purpose of this quality improvement pilot project was to evaluate preliminary outcomes and student acceptance of integrating a brief mindfulness strategy in the classroom of a required pre-licensure nursing course.

**Method:** A one-group pre- and post-test design was used to pilot a brief mindfulness strategy with pre-licensure nursing students during the last six weeks of the term. Outcome measures included anxiety, depression, and perceived stress. Participation in data collection activities was voluntary. Data were collected at the beginning (T1), middle (T2), and end of the 14-week term (T3). A focus group was conducted to gather student acceptance data at the end of the project.

**Findings:** There was no significant change in outcome measures over time. Recommendations included introduction of mindfulness early in the prelicensure nursing program, integration of a variety of activities, and making mindfulness an optional in-class activity.

**Conclusion:** Mindfulness practices introduced early in pre-licensure programs may assist students with adoption of strategies to regulate anxiety, depression and perceived stress.

**Keywords:** *Mindfulness, mindfulness intervention, anxiety, depression, stress.*

## Abstract

Nursing students often experience increased levels of stress and anxiety during prelicensure programs.<sup>1</sup> Strategies to improve mindfulness show promise for reducing stress and anxiety among college students and for improving student attention.<sup>2-4</sup> Brief mindfulness strategies have shown reduced pain in patients,<sup>5</sup> improve

mood,<sup>6</sup> and has been introduced in the college classroom.<sup>7</sup> Although it is important to introduce college students to mindfulness practice,<sup>8-10</sup> it is challenging for course instructors to become familiar enough with mindfulness practice to bring it into the classroom.<sup>11</sup> The purpose of this quality improvement pilot feasibility project was to evaluate preliminary outcomes and student acceptance of integrating a brief mindfulness intervention in the classroom of a senior level pre-licensure course.

This feasibility study was a quasi-experimental one-group study in a required course with senior level nursing students receiving no intervention followed by six weeks of the intervention. While it is known that mindfulness practice reduces stress and anxiety,<sup>4</sup>

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the “dose” or amount of time for mindfulness practice and strategy have not been established. To reduce time used in the classroom, we are working to develop a brief classroom mindfulness practice. For this study, we assessed elements of feasibility: process, resources, management, and scientific aspects,<sup>12,13</sup> along with acceptability.

**Our questions for this quality improvement project were:**

1. Is it feasible to collaborate with faculty to introduce nursing students in a required course to mindfulness practice through use of a five- minute body scan video in class for six weeks?
2. What are the mean levels of anxiety, stress, and depression for nursing students at the start, after six weeks of awareness of mindfulness practice, and again after six weeks of the brief in-class mindfulness intervention?
3. What are student perceptions of brief mindfulness practice in a required nursing course for six weeks?

**Method**

A one-group pre- and post-test design was used to pilot a brief mindfulness strategy in two classrooms with undergraduate prelicensure students in their last term of the program (n=156), and one class of second-degree graduate students in the first term of the prelicensure program (n=22). Because this was a quality improvement project with the possibility of incorporating this into future courses, this intervention was introduced at the start of a required course to all students and was considered exempt by the university Institutional Review Board.

Outcome measures included anxiety, depression, and perceived stress. The in-class mindfulness activity of a freely available online guided body scan was shared every week during the last six weeks of the term. Participation in mindfulness practice and data collection activities was voluntary. Data were collected via electronic survey administered at the beginning (T1), middle (T2), and end of the 15-week term (T3). A focus group was conducted to gather student perceptions at the end of the project.

**Intervention:** The Principal Investigator (PI), a PhD-prepared Registered Nurse, attended the first meeting of each class to introduce mindfulness practice.

Students were invited to complete a survey to collect demographic information and assess anxiety (4-item PROMIS),<sup>14</sup> depression (4-item PROMIS),<sup>14</sup> and stress (Perceived Stress Scale)<sup>15</sup> within one week at the start of the study. The research team developed a brief video with information about mindfulness practice including benefits which was made available through the Learning Management System after they completed the initial survey and after the first week. This interaction was followed by six weeks without mention of mindfulness practice and then students were invited via email to complete the same survey at midterm (T2).

The second survey was followed by the six-week intervention. Each week, the PI arrived a few minutes prior to the start of class. The course instructor called students to attention, then the PI invited students to take five minutes to turn their attention to mindfulness practice. The lights were dimmed, and the PI sat in a chair and broadcast a five-minute body scan video from Youtube.com. The PI participated in the mindfulness activity, stopped the recording at the end, turned the lights on, thanked students for their attention, and left the room as the course instructor proceeded with class. Students were invited via email to complete the survey a third time at the end of the semester (T3).

**Instruments:**

**Anxiety:** Anxiety was assessed using the previously validated PROMIS Short form v1.0 – Anxiety 4a which assesses anxiety with 4 items participants rate 1 (never) to 5 (always) (i.e., In the last 7 days... I felt uneasy).<sup>14</sup> The instrument was accessed through RED Cap<sup>16</sup> with automatic scoring on a standardized scale with a mean of 50, standard deviation 10.<sup>17</sup>

**Depression:** Depression was assessed using the previously validated PROMIS – short form v1.0 – Depression 4a.<sup>14</sup> This instrument records responses on a scale of 1 (never) to 5 (always) for agreement to statements such as “In the past 7 days...I felt worthless.” The instrument was accessed through RED Cap with automatic scoring on a standardized scale with a mean of 50, standard deviation 10.<sup>17</sup>

**Perceived stress:** Perceived stress was assessed using the previously validated Perceived Stress Scale (PSS).<sup>15</sup> The PSS is an instrument of 10 items scored 0 (never) to 4 (very often) for agreement with statements such as “In the last month, how often have you felt nervous and “stressed”?” with four items reverse-scored

and a possible score of 0 to 40. A score of 0-13 indicates low stress, 14-26 is moderate stress, and 27-40 indicates high perceived stress.

**Analysis:** Analysis was completed on all data using IBM SPSS Statistics 26 by the PI. We calculated a paired t-test for students with complete initial and final surveys (n=29). A RM-ANOVA was run on the data for outcomes for the students who completed surveys at all three times (n=14). Data was normally distributed and ANOVA assumptions met for the 14 completers.

For the final meeting with students, a faculty member new to students led the discussion with a colleague taking notes. We asked students for feedback on our classroom mindfulness practice. Notes from this session were reviewed by three members of the research team to identify themes.

**Findings:** Students expressed support for the study at the initial meeting, with one group clapping after hearing our initial presentation. of the 156 students who completed an initial survey, 135 were traditional

undergraduate senior nursing students (95.7%), 21 were graduate nursing students in an accelerated program (13.5%), 134 were women (n=85.9%), 142 identified as white (91%), 10 as African American (6.4%), 131 identified as not Hispanic (84.0%), average age was 23.12 years (sd 5.08).

At the start of this study, 62.6% of respondents (n=87) had practiced mindfulness in the prior four weeks. At midterm, 86.5% of respondents (n=45) reported practicing mindfulness in the prior four weeks, and at the end of the study 85% of respondents (n=34) reported practicing mindfulness in the prior four weeks. of these, 17.3% (n=24) reported practicing five minutes or less per day at time 1, 30.8% (n=16) at time 2, and 42.5% (n=17) at time 3.

Popular strategies for mindfulness practice reported by all students (n=156) are provided in Table 1. Although exercise is not typically identified as a mindfulness strategy, most students selected that activity as their preferred strategy for mindfulness practice.

**Table 1: Preferred strategies for mindfulness practice**

Mindfulness practice strategy	Start (n=139) #(% )	End (n=40) #(% )
Sitting meditation	22 (15.8)	14 (35)
Walking meditation	16 (11.5)	9 (22.5)
Guided imagery	11 (7.9)	4 (10)
Body scan	13 (9.3)	5 (12.5)
Yoga	40 (28.8)	11 (27.5)
Pursed lip breathing	24 (17.3)	8 (20)
Exercise	112 (80.6)	28 (70)
Progressive Muscle Relaxation	17 (12.2)	4 (10)
Positive visualization	31 (22.3)	5 (12.5)
Positive self-talk	73 (52.5)	22 (55)
Other	4 (2.9)	1 (2.5)
None	6 (4.3)	3 (7.5)

**Table 2: Mean (standard deviation) for outcomes (n=14 completers)**

	Depression	Anxiety	Perceived Stress
Start (January)	53.46 (6.46)	59.35 (8.63)	16.14 (6.82)
Midterm (Feb/March)	51.27 (7.73)	54.21 (10.2)	15.43 (7.47)
End (April)	52.50 (7.64)	56.50 (8.48)	15.71 (8.28)

The repeated measures ANOVA identified no significant effect in depression, anxiety, or perceived stress within subjects ( $n=14$ ). Of the 29 students who completed the initial and final surveys, more of them recommended mindfulness practice for future nursing students at the end ( $n=19$ , 65.5%) than at the start ( $n=15$ , 51.7%). Also for this group, 12 (41.4%) had never practiced mindfulness at the start of the study, and that number was reduced to 4 (13.8%) at the end of the study. The paired t-test for students who provided complete data for both the initial and final surveys ( $n=29$ ) revealed a significant reduction in anxiety from T1 to T3 ( $t=2.085$ ,  $df=28$ ,  $p=.046$ ).

**Qualitative outcomes:** Participants provided written feedback on the initial and midterm surveys. At the end of the study, a focus group was held with participants with teaching faculty and PI absent.

**Starting recommendations:** At the initial survey, 128 participants recommended that we introduce mindfulness practice in other courses. Participant recommendations included a variety of apps, mindfulness sessions at the College of Nursing, some at the beginning or end of class, one with essential oils. Other participants suggested yoga for nursing students at the college.

Some participants were already aware of the benefits of mindfulness for anxiety and depression. One participant mentioned that “I have been meditating and working on mindfulness as part of how I deal with my anxiety and depression and I think this is a great idea to incorporate it into school.” Another said that we should remind students to take care of themselves and “mental health is just as important as their physical health.”

**Midterm feedback:** We assessed used of the brief body scan video before the midterm exam. Thirteen students provided a positive response to the activity, twelve were negative, and two were neutral. Those who were positive responded with comments such as: “Before the exam I was feeling very stressed and my heart was beating very fast. The mindfulness meditation gave me time before the exam to help me relax. It lowered my heart rate and I felt a lot calmer going into the exam.”

Students who responded negatively to mindfulness before the exam seemed to see it as a distraction from an important activity. “I find it hard to do the mindfulness activity in class. I do not feel comfortable sitting in class with my peers doing the mindfulness video. Therefore, I did not think that the mindfulness video before the exam

helped at all...I think that the video may have been more helpful if played after the exam when everyone could truly relax.” For the final exam, we provided the body scan video 30 minutes prior as an optional activity. Just three students arrived for that session.

**Final discussion:** Participants said they liked the video but felt rushed going through different areas of the body. Use of the same video for six weeks was perceived as redundant and the activity should have been optional.

Other participants viewed it as optional and did not engage in the mindfulness activities saying that they had a lot to complete. Participants were senior nursing students, and they said they already had a routine established and preferred to do their “own thing.” Some participants suggested that it would work better after class ended to wind down and allow people to leave. Participants recommended that mindfulness activities be started during freshman year so that students could be acculturated. Other strategies recommended included music therapy, stretching or physical movement, aromatherapy, with a different approach each week.

## Discussion

At the start of the study, participants welcomed the idea of introducing mindfulness practice in a required course and expressed experience with a variety of mindfulness strategies. Of the participants who completed the surveys at the start and end of this study, there was an increase in the percentage who practiced mindfulness over the prior four weeks, and in those who recommended mindfulness practice for future nursing students. Although no change in depression or stress was detected, there was a reduction in stress for students completing surveys at T1 and T3.

It was helpful to have an open discussion of this study with participants at the end of the semester. Participants had mixed feelings about practicing mindfulness prior to an exam so it may be helpful to provide an optional mindfulness activity prior to exams. Senior nursing students recommended introducing mindfulness practice early in the nursing program with more than one strategy. We introduced mindfulness practice at the start of each class, but students suggested that it occur at the end of each class and allow students to leave if preferred.

**Limitations:** This study is limited by lack of a control group, a small sample of completers, and a focus on nursing students. The mindfulness strategy introduced was repetitive and brief.

## Conclusion

Although our intervention was brief, there were more participants who practiced mindfulness at the end of the study than at the start. There was also an increased percentage of those who recommended mindfulness practice for future nursing students. Though mindfulness is a strategy to reduce stress and anxiety, improve self-knowledge, and improve attention and concentration, it is challenging to make it available to nursing students in a way that is comfortable for everyone. Future research could introduce a wider variety of mindfulness strategies early in a nursing or other college program and look for ways to motivate students to practice on their own.

**Conflict of Interest:** Nil.

**Source of Funding:** Self

**Ethical Clearance:** This study was identified as exempt from the University of Cincinnati Institutional Review Board.

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