

Practical and Effective: Contemplative Practices in a Small College Setting

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Abstract

Can contemplative practices be included in the normal routine of students, rather than asking them to add yet another task to their busy lives? Four studies provide preliminary evidence that mindfulness training (MT) practiced in the classroom or on the field is feasible and beneficial. Study 1 showed that MT could be implemented in an upper-level psychology course and significantly increased mindfulness and self-compassion. Study 2 showed that self-compassion training could be implemented in a first-year seminar with trends towards increased self-compassion, decreased self-criticism, and improved psychological well-being. Study 3 showed that MT could be integrated into a soccer team's trainings and competitions, improving calmness and present-minded focus, and reducing negative self-talk and distractions. Study 4 demonstrated that weaving culturally-based mindful practices into a curriculum that emphasizes inclusion helped students understand and apply diverse perspectives to issues in health psychology, health promotion, and health disparities.

Keywords: mindfulness training; self-compassion; higher education; stress; psychological well-being; flow

Practical and Effective: Contemplative Practices in a Small College Setting

Within the past few years, the current authors began noticing some trends in college students – the first author as a professor of psychology at a small liberal arts college in the Southern Appalachians; the latter two as students at this same institution. Students appeared to be more distracted than ever attempting to juggle academics, work, service, relationships, social media, and technology. Further, students seemed highly stressed in attempts to maintain their emotional health along with meeting the many demands they faced. National survey data supported these observations; and, in particular, our students were endorsing more distress (e.g., feeling overwhelmed, anxious) than students at peer institutions. This distress seemed to manifest across many areas of student lives, including within activities that were ostensibly supposed to improve mental health. For example, the two student authors noticed increased stress and attentional problems within their collegiate soccer team.

Simultaneously, two other important things were occurring on our college campus. First, on the positive side, there was an increasing amount of interest in contemplative activities: mindfulness-based practices and physical education courses with contemplative components (e.g., yoga and meditation classes). Second, on the negative side, the campus had experienced several racial incidents in which students of color – a large minority on our campus – were targeted.

We decided to examine the effects of mindfulness training to ameliorate some of these areas (psychological stress, distraction in the classroom and on the field, racial bias). Further, we wanted to improve students' lives without adding yet another task to their busy lives. Our attempts to expose students to the effects of mindfulness training, then, were intentionally

designed to be conducted within the normal routine of the students (i.e., in the classroom and on the field).

In this paper, we first briefly review the literature examining the potential benefits of mindfulness training in three areas: mental and emotional health; mindfulness in athletics; and improvements in inclusivity, including reductions in racial bias. Next, we describe a series of studies we conducted to examine these areas in our college population. Finally, we end with a discussion on the impact and practicality of conducting mindfulness interventions within the daily routines of college students.

Mental and Emotional Health

In the United States, self-reported emotional health of college students has dropped to one of its lowest levels within the past 25 years (Hope, Koestner, & Milyavskaya, 2014). According to national survey data, there has been an escalation of serious mental health problems in college students since the mid-1990s (Center for Collegiate Mental Health, 2017). For example, 39% of students indicated that, in the past year, they had “felt so depressed that it was difficult to function”; 61% felt “overwhelming anxiety” (American College Health Association, 2017). This decline in emotional health has been accompanied by an increase in expectations for academic achievement in the college setting (Hope et al., 2014; Zessin, Dickhäuser, & Garbade, 2015).

One strategy that could slow this decline and improve psychological well-being is providing mindfulness training for college students, especially early in their career. Karen Ragoonaden (2017), for example, examined how mindfulness practices incorporated into a developmental course might impact the academic pathway of first-year students. Over the 13-

week course, Ragoonaden taught mindful breathing, mindful eating and movement, and mindful awareness. Post-course interviews (n=7) revealed increases in attention, focus, and general well-being as well as decreases in stress levels. Importantly, this study was conducted within the larger context of culturally appropriate pedagogy with Aboriginal First Year Access students. Ragoonaden notes that “the similarities between mindfulness practices and Indigenous traditional practices and cultural values as well as the emergent sense of community was mentioned several times by all participants” (p. 80). This study demonstrates how contemplative practices can be integrated into a classroom setting, honoring values and tradition, for a group of students who might be considered at higher risk for success and well-being as they enter college.

A contemplative practice that may be particularly beneficial to college students is mindful self-compassion. The construct of self-compassion has been examined empirically over the last 20 years. It has evolved partly from the teachings of Buddhism, which emphasize practicing mindfulness of one’s personal sorrows and taking a nonjudgmental stance towards individual shortcomings and failures (Neff, 2003b). Self-compassion is a stance towards oneself that is non-evaluative and objective in nature (Breines & Chen, 2012; Neff, 2003b; Zessin et al., 2015). It is described as “being touched by and open to one’s own suffering, not avoiding or disconnecting from it, generating the desire to alleviate one’s suffering and to heal oneself with kindness” (Neff, 2003b, p. 87).

The ability to maintain a balanced stance towards one’s own emotions is developed through three main facets of self-compassion: self-kindness, a sense of common humanity, and mindful awareness (Neff, 2003b). Self-kindness means gently, amiably, and nonjudgmentally addressing personal traits and behaviors. A sense of common humanity refers to the relatable

experiences that all humans undergo – the notion of a shared human experience. Common humanity teaches individuals to view their own struggles and suffering as relevant and relatable, rather than isolating and oppressing. Finally, mindful awareness entails viewing subjective thoughts and feelings in a mostly neutral and composed manner, which discourages individuals from ruminating and catastrophizing (Hope et al., 2014; Neff, 2003b).

Mark Leary and his colleagues found that self-compassion attenuates undergraduates' reactions to real-world negative events, acting as a stress-buffer (Leary, Tate, Adams, Batts-Allen, & Hancock, 2007). This study highlights self-compassion's ability to deactivate the threat system by activating the soothing system, decreasing stress levels and preventing catastrophizing. Looking outside of the U.S., in a study of 390 Turkish college students, Iskender (2009) found a relationship between self-compassion and lower stress levels, higher academic achievement, and greater locus of control. Finally, in a meta-analysis ($k=79$ samples), Zessin and colleagues (2015) found a significant, moderately-strong relationship between self-compassion and well-being, particularly cognitive and psychological well-being ($r=.47$). Examining a subsample of studies, the analysis suggested a causal effect of self-compassion on well-being.

These and other studies suggest that self-compassion is associated with resilience, decreases in anxiety and stress, and overall improvements in psychological well-being. Further, as Breines and Chen (2012) make clear, “these findings have implications for enhancing coping skills in educational settings. Self-compassion may help students respond to failure in a way that facilitates growth and improvement without leading to debilitating negative affect” (p. 1140).

Teaching mindfulness and self-compassion seems a promising direction for improving the mental health of our students. Still, most of the studies on these practices in college students

are either correlational or, if they are interventional, ask students to practice outside of the classroom (e.g., Dvořáková et al., 2017; Short, Mazmanian, Ozen, & Bédard, 2015). As we describe below, we wanted to determine whether we could improve psychological well-being and self-compassion by including mindfulness training in the course of a normal day (i.e., in the classroom or on the athletic field).

Mindfulness in Athletics

Students who participate in college sports represent a unique population in which to examine the impact of contemplative practices. Student-athletes are expected to manage many responsibilities: meeting team and sport obligations; maintaining an idealized public image; and balancing social, academic, athletic, and work life. Meeting these demands presents a challenge for many of these students, and there is evidence that college athletes experience high levels of stress and are at increased risk for emotional and behavioral difficulties (Proctor & Boan-Lenzo, 2010; Goodman, Kashdan, Mallard, & Schumann, 2014). Early sport psychology interventions were geared towards controlling thoughts and eliminating fear, in the attempt to reduce stress and to improve performance. Recently, however, as Goodman and her colleagues (2014) point out, contemplative practices such as yoga and meditation have entered the sport psychology world – with an emphasis on noticing and accepting thoughts and emotions, while attempting to improve present-oriented focus. George Mumford, a meditation teacher for athletes, describes how learning Mindfulness-Based Stress Reduction (MBSR) from Jon Kabat-Zinn helped him manage his own struggles with drug addiction and mental health problems, later incorporating MBSR principles in his work with NBA teams (Mumford, 2015). Much of this sport psychology work is based on ancient principles of Buddhism and adapted from psychotherapeutic

approaches such as Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, & Wilson, 1999).

Two mindfulness-based interventions designed specifically for athletes are: (1) Mindfulness Meditation Training in Sport (MMTS; Baltzell, Chipman, Hayden, & Bowman, 2015), and (2) Mindful Sport Performance Enhancement (MSPE; Kaufman, Glass, & Pineau, 2017). Both use structured sessions that include psychoeducation, discussion, and contemplative practices. An example of this is provided by Goodman and her colleagues (2014), who conducted an eight-session mindfulness training (MT) program over five weeks with an NCAA Division 1 men's basketball team. Compared to a control group, the athletes receiving MT reported greater mindfulness, greater goal-directed energy, and less perceived stress after the intervention. In a qualitative study, Baltzell and colleagues (2015) used a 6-week, 12-session MMTS intervention with an NCAA Division 1 women's soccer team (22 players and coaches). Following the intervention, coaches reported less emotional reactivity while coaching in games and practices, and an improvement in emotional recovery by players after making a mistake on the field.

Mindfulness has also been connected to the experience of *flow* in athletes. Flow is characterized by a state of mind involving complete absorption with the task at hand, usually connected with improved performance (Csikszentmihalyi, 1990; Jackson, Martin, & Eklund, 2008). In a study of 182 university athletes, Kee and Wang (2008) found that athletes who self-rated as more mindful were also more likely to report having experienced flow states in their sport. In an intervention study with 47 competitive cyclists, researchers found that an 8-wk MT

program induced changes in mindfulness, which were then positively associated with changes in flow (Scott-Hamilton, Schutte, & Brown, 2016).

Mindfulness, Racial Bias, and Inclusivity

Prejudice against people who don't share our race, ethnicity, gender, religion, or political persuasion is creating an atmosphere of distrust and hostility that is dividing the United States. Citizens and researchers alike are desperate to understand where these divisions come from and how to heal them (Suttie, 2017).

College campuses, of course, are not immune from divisions, bias and prejudice. Our college, for example, which is often considered one of the more liberal in the country, experienced a series of events in 2016 that included racist remarks and damage to property of minority students. The college met these incidents with a robust response (Clark, 2016) but the incidents were unsettling and disturbing to the college community as a whole and to minority students in particular. What can contemplative practices offer in this arena? Suttie (2017) suggests that there are three ways mindfulness can make us less biased.

First, mindfulness can help us be aware of and avoid making the fundamental attribution error, also called the correspondence bias. This cognitive error occurs when we overattribute a behavior to dispositional factors and drastically underestimate the effects of the social situation on that behavior. For example, after Hurricane Katrina, many asked why some people (disproportionately black and poor) stayed behind in the path of the storm. The correspondence bias appeared to play a role when commentators attributed the staying to "stubbornness or stupidity" (negative individual traits) rather than to social factors (such as access to means and

ways to leave the city). Mindfulness practices may help people recognize this cognitive bias and then avoid making incorrect attributions, potentially reducing racial biases. In a series of recent studies, there is evidence that MT can reduce social biases related to person perception (Hopthrow, Hooper, Mahmood, Meier, & Weger, 2017), implicit biases (Lueke & Gibson, 2015), and discriminatory behavior (Lueke & Gibson, 2016).

Second, mindfulness can reduce the negativity bias, in which our brain reacts more strongly to stimuli that are deemed threatening or negative, and potentially improve feelings and behaviors around inclusivity. There is a long history of social psychology research focusing on in-group, out-group interactions and biases, which are partially driven by this negativity bias in which the out-group is perceived as threatening. This bias has real-world implications for minority college students. In a study of African-American college students, for example, researchers demonstrated that interacting with members of different social groups was stressful, and that many of the students experienced race-based rejection (Mendoza-Denton, Downey, Purdie, Davis, & Pietrzak, 2002). Mindfulness practices can increase positive judgments and reduce negativity in attitude formations (Kiken & Shook, 2011). Further, increasing mindfulness might work by reducing habitual (implicit) stimulus-driven reactivity, especially in encountering ambiguous or negative events. This can be demonstrated at the neurophysiological level by examining event-related potential (ERP) (Ho, Sun, Ting, Chan, & Lee, 2015).

Third, mindfulness practices may help us see others as equals. Logie and Frewen (2015), for example, showed that a single session of loving-kindness meditation (LKM) was associated with decentering and positive affect, and a reduction in the self-positivity bias. Stell and Farsides (2016) also used a LKM intervention to target biases of undergraduates. They found that this

form of contemplative practice reduced implicit bias; the reduction in bias was shown to be mediated by other-regarding positive emotions along with increased control and decreased automaticity on the Implicit Associations Test (IAT). Several other studies (e.g., Hunsinger, Livingston, & Isbell, 2014; Kang, Gray, & Dovidio, 2014) support these conclusions, providing a potential pathway to reduce racial bias – both explicit and implicit – in college students.

The Present Experiments

We completed four studies across disparate areas of focus (stress, athletics, racial bias and inclusivity), to examine the feasibility and impact of mindfulness interventions conducted within the normal daily activities of a college student. Each study was reviewed and approved by the Institutional Review Board. Participation in each of the studies was completely voluntary and anonymous. Students were assured that there would be no negative consequences if they chose not to participate.

Experiment 1

In the first experiment, we investigated the effects of integrating mindfulness-training into a Health Psychology course. The course material lends itself to a discussion of how mindfulness training (MT) can potentially help patients with conditions such as chronic pain, coronary heart disease, and mental health disorders. The instructor (first author) incorporated MT practices into the course material throughout the semester.

Participants The sample included college students (N=35; average age 19.8) enrolled in one of two junior-level, semester-long courses at our college: Health Psychology (n=18; experimental condition) and Ecology (n=17; control condition).

Procedure After the study was described (including details about voluntary, anonymous participation), students were invited to participate; all students in both classes provided their informed consent. Pre-test measures assessing mindfulness, self-compassion, and self-criticism (see next section) were given to both groups. The experimental group (Health Psychology) then participated in their 15-week course, in which MT was integrated into the class material. Each week included a mindfulness exercise done at the beginning or end of a class session, for a total of 13 MT exercises. (Weeks 1 and 15 were not used for MT.) MT included practices drawn from MBSR courses and other sources, with the main criteria being that the practice would be integrated with the material and conducted within the class session. For example, when we were discussing the health effects of loneliness, we practiced a loving-kindness meditation; when discussing the psychophysiological aspects of stress, we practiced a body scan; and when discussing nutrition and brain health, we did a mindful eating exercise. In total, students practiced approximately 200 minutes in the classroom. They also read peer-reviewed and popular press articles, connecting the topic of mindfulness to health, wellness, and psychology. At the end of the semester, both groups completed the self-report measures again.

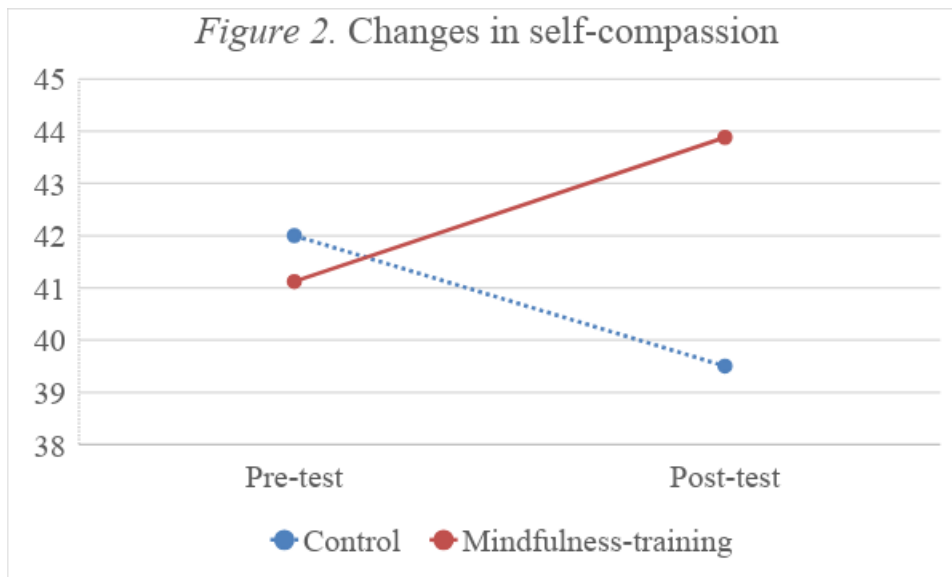
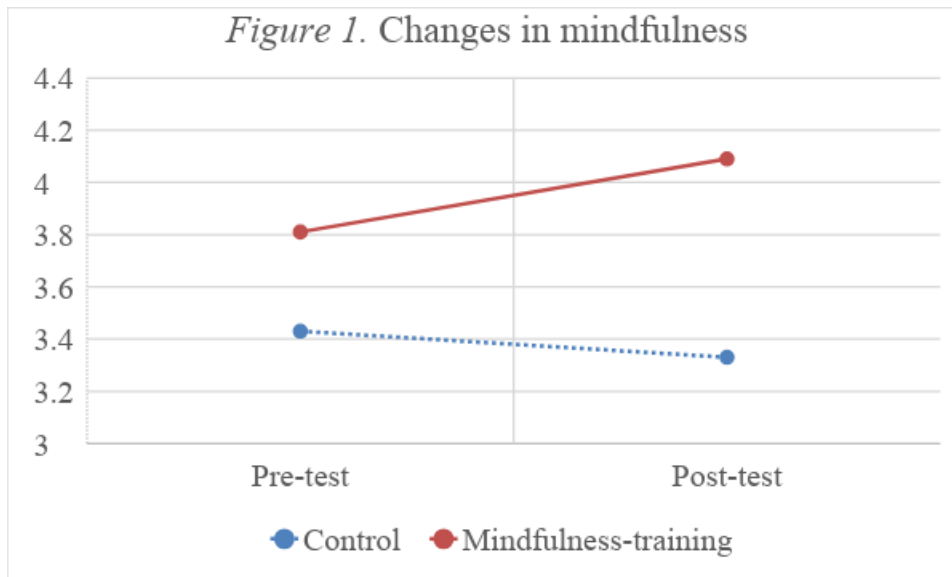
Self-Report Measures

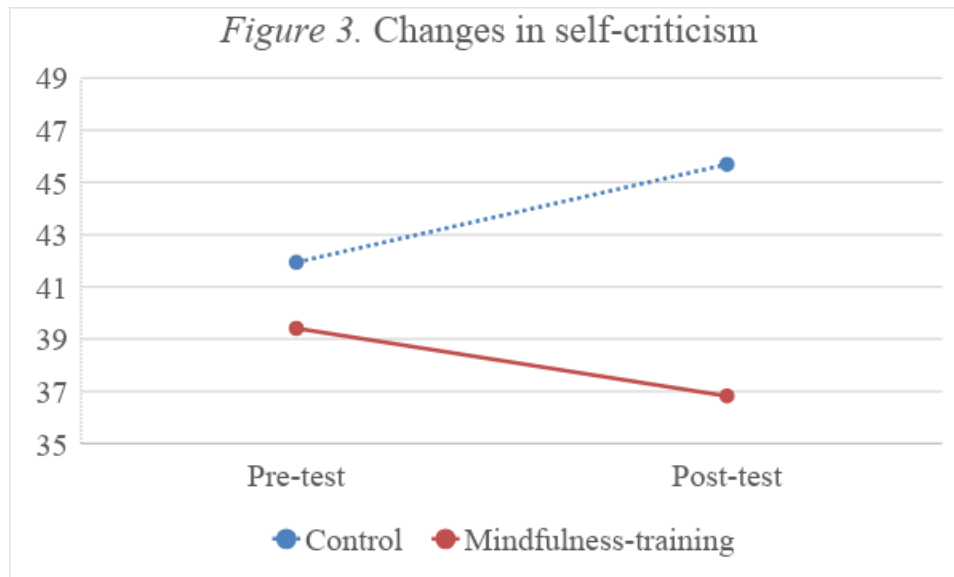
Mindful Attention Awareness Scale. The MAAS (Brown & Ryan, 2003) is a 15-item scale designed to assess a core characteristic of mindfulness – a receptive state of mind in which attention, informed by a sensitive awareness of what is occurring in the present, simply observes what is taking place. The MAAS has been validated for use with college students and community adults; it has high test-retest reliability, discriminant and convergent validity, and criterion validity. The MAAS is scored by computing a mean of the 15 items. Higher scores reflect higher

levels of mindfulness.

Self Compassion Scale. The SCS is a 26-item questionnaire used to gauge levels of self-compassion (Neff, 2003a). The SCS has good test-retest reliability (.93) and discriminant validity. A recent psychometric analysis of the scale (Lopez et al., 2015) suggests a two-factor solution formed by the positively and negatively formulated items resulting in the following two factors: self-compassion and self-criticism.

Results Of the 35 initial participants, 33 completed both the pre- and post-measures. A 2x2 Repeated Measures ANOVA was conducted on each of three variables: mindfulness, self-compassion, and self-criticism. For mindfulness, the interaction effect of time x group yielded an F ratio of $F(1, 32) = 3.85, p = .059$, indicating that while there was not a significantly larger change for the experimental group (Health Psychology students), there is a trend in the data suggesting that the students in the intervention group, as compared to those in the control group, increased in mindfulness over the semester (See Figure 1). For self-compassion, the interaction effect of time x group yielded an F ratio of $F(1, 32) = 4.79, p = .036$, indicating that the experimental group increased in self-compassion relative to the control group over the semester. (See Figure 2.) Finally, for self-criticism, the interaction effect of time x group yielded an F ratio of $F(1, 32) = 5.03, p = .032$, indicating that the experimental group decreased in self-criticism relative to the control group over the semester. (See Figure 3.)





Brief discussion The results of this study indicate that a MT intervention can be integrated into the classroom and course material easily and effectively. Students appeared to benefit by becoming more mindful and self-compassionate, and less self-critical. Also, students commented that this experiential approach helped them learn the material on mindfulness and health more deeply.

Experiment 2

In the second experiment, we investigated the effects of a self-compassion training intervention on the psychological well-being of first-year college students. In first-year students, stress, anxiety, and depression levels are consistently high (American College Health Association, 2017). To our knowledge, there have been no studies that directly examine the effect of self-compassion practice when implemented within the college classroom.

Participants The sample included 23 first-year college students (average age 18.2) enrolled in one of two first-year seminar (FYS) courses at our college. Students identified as

female (n=9), male (n=7), or nonbinary (n=7). There were 12 students in the experimental group (FYS-1) and 11 in the control group (FYS-2).

Procedure We enlisted the participation of two first-year seminar instructors, who allowed us to use their class time to administer questionnaires and to facilitate training sessions within the classroom, during normal class hours. Students completed pre-test measures assessing psychological well-being, self-compassion, and self-criticism (see next section). The experimental group (FYS-1) then participated in a modified version of the Mindful Self-Compassion Program, an 8-week program in which participants are trained in self-compassion practice (Neff & Germer, 2013). (The modification was to shorten the intervention to six weeks. The list of meditations and other resources we used are available from the first or second author.)

Self-Report Measures

The Ryff Scales of Psychological Well-Being were used to measure the psychological well-being of participants before and after mindfulness training. This scale assesses self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and positive growth (Ryff, 1989; Ryff & Keyes, 1995). Ryff's scale has demonstrated high levels of internal consistency (between 0.86 and 0.93) and test-retest reliability (between 0.81 and 0.88) (Ryff, 1989).

The Self Compassion Scale (SCS; described in Experiment 1) was used to gauge levels of both self-compassion and self-criticism in individuals (Neff, 2003a).

Results Of the 23 participants enrolled in the trial, 21 completed the six-week assessment. *T*-tests conducted on the pre-test dependent variables (self-compassion, self-criticism, and psychological well-being) revealed no differences between the intervention and

control group. (See Table 1 for means and standard deviations for self-compassion, self-criticism, and psychological well-being.)

Table 1. *Descriptive Statistics*

Group	Pre-Test			Post-Test		
	Self-Compassion M (SD)	Self-Criticism M (SD)	Psychological Well Being M (SD)	Self-Compassion M (SD)	Self-Criticism M (SD)	Psychological Well Being M (SD)
Control	40.82 (9.13)	41.91 (10.44)	355.90 (56.70)	41.55 (9.02)	43.55 (11.11)	354.10 (78.23)
Intervention	41.00 (6.66)	40.63 (6.53)	377.08 (62.84)	42.33 (7.91)	38.78 (10.85)	385.25 (62.25)

Change scores (over the six weeks) were calculated for each of the three variables. To test for difference between groups due to the intervention, a multivariate analysis of variance (MANOVA) was conducted – due to the correlations between measures – on the three change scores. The results of this MANOVA were statistically insignificant at $p < .05$ ($F = .32, p = .81$), though pre-post changes were in the expected direction (see Figures 4-6).

Figure 4. Changes in self-compassion

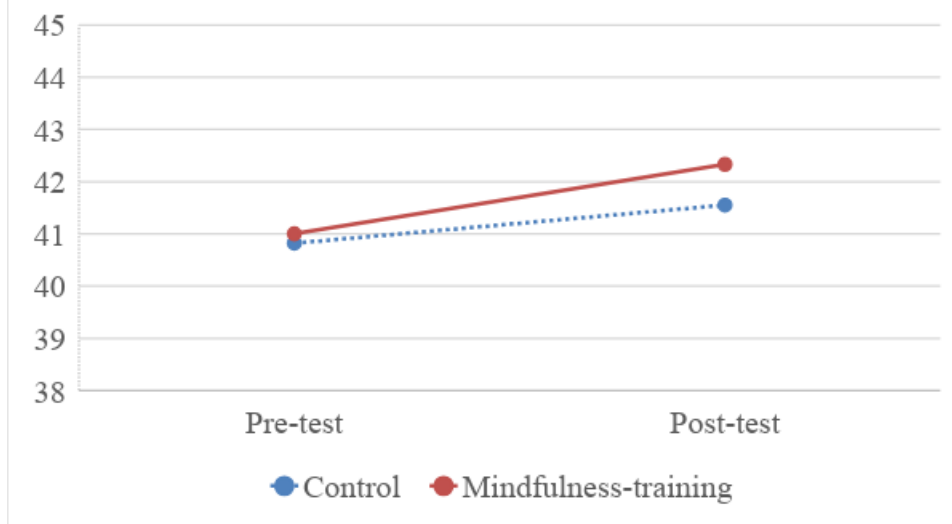
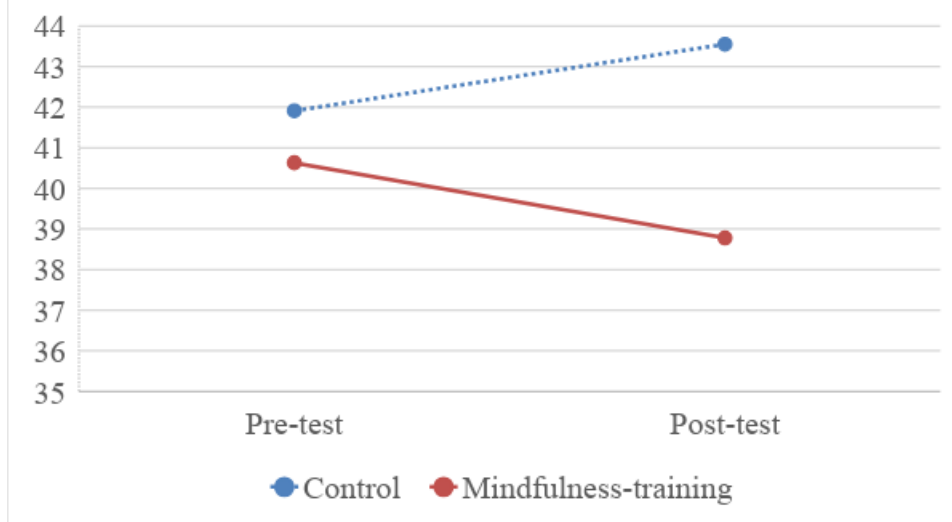
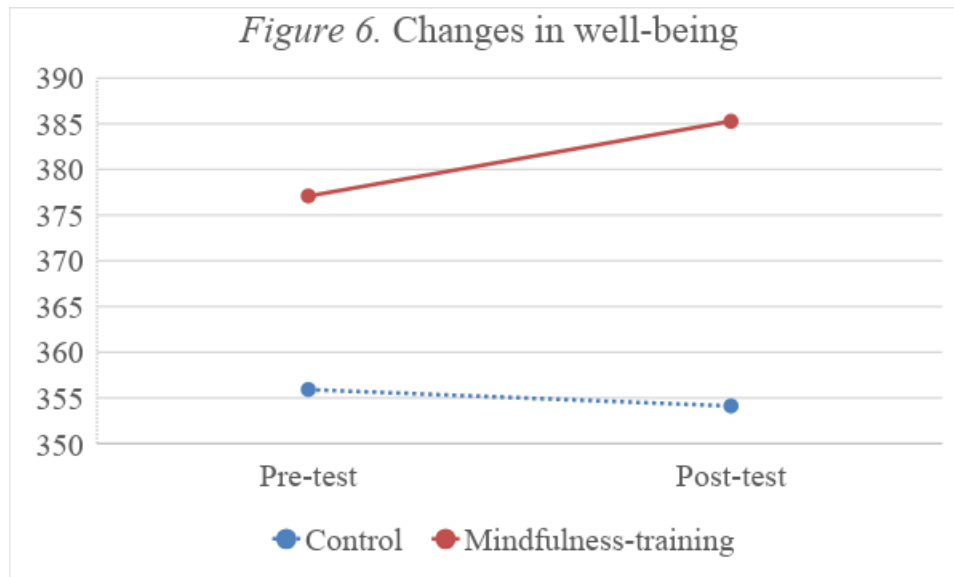


Figure 5. Changes in self-criticism





Brief discussion There were no statistically significant differences between the two groups on the dependent variables. It is possible that the six-week intervention was too brief to produce significant effects in participants. Mindfulness practice can be a difficult habit to establish and benefits might not manifest after six weeks of practicing. The sample size was also small. Despite these limitations, the changes on the dependent variables were in the predicted direction – increased self-compassion, decreased self-criticism, and increased psychological well-being. Also, the investigator (second author) who facilitated the weekly interventions found that the professor was welcoming and provided time within the class for these interventions to take place. That professor stated that the interventions were integrated easily within her class plan for the day, and that she felt it was important to include self-compassion training for first-year students.

Experiment 3

Participants This study was conducted with twenty-one ($n = 21$) college female varsity athletes (mean age, 19.3). For the experimental group, a total of 14 of the participants were

members of the women's soccer team. For the control group, the seven participants were members of the women's cross-country team. The college's Athletic Director and Institutional Review Board approved this study prior to the distribution of consent forms to both teams.

Before pre-season was over, we met with coaches and athletes to introduce the study and to answer any questions. Participants were told that their choice to participate would not affect their standing with their athletic team or the college, and at no point would their individual scores be shared with the coaching staff. All answers and personal information were kept completely confidential.

Procedure Prior to the intervention, both groups completed two questionnaires (described below) to assess mindfulness and flow. While the experimental group, the women's soccer team, participated in a 15-week mindfulness intervention, the control group, 7 female cross-country runners, did not partake in any mindfulness intervention activities. Both teams have similar time demands and compete at similar competition levels. Over a total of 15 weeks, the experimental group attended 11 mindfulness training sessions, two of which were presentations in the preseason and nine of which were pregame meditations during the competitive season. Both groups completed the second set of questionnaires at the end of the competitive season (Week 15).

Three instructors led sessions for the mindfulness interventions. Instructor 1 is a certified Mindfulness-Based Stress Reduction (MBSR) teacher. Instructor 2 (first author) is a licensed Clinical Psychologist, Professor of Psychology, and a sport psychologist. Instructor 3 (third author) was an undergraduate psychology major (with prior coursework in sport and health psychology), a certified personal trainer through the National Academy of Sports Medicine,

captain of the varsity soccer team, and had completed a nine-week MBSR course. The first two mindfulness intervention sessions were taught by Instructors 1 and 2 during preseason and were the longest sessions (approximately 60 minutes each). Sessions 3-11, pregame mindfulness meditations facilitated by Instructor 3, were each approximately 10 minutes. The theme of these mindfulness trainings was learning how to cultivate a mindful, attentive, nonjudgmental stance towards oneself as an athlete. There was an emphasis on using mindfulness to help recover quickly, with kindness, from errors and lapses of attention.

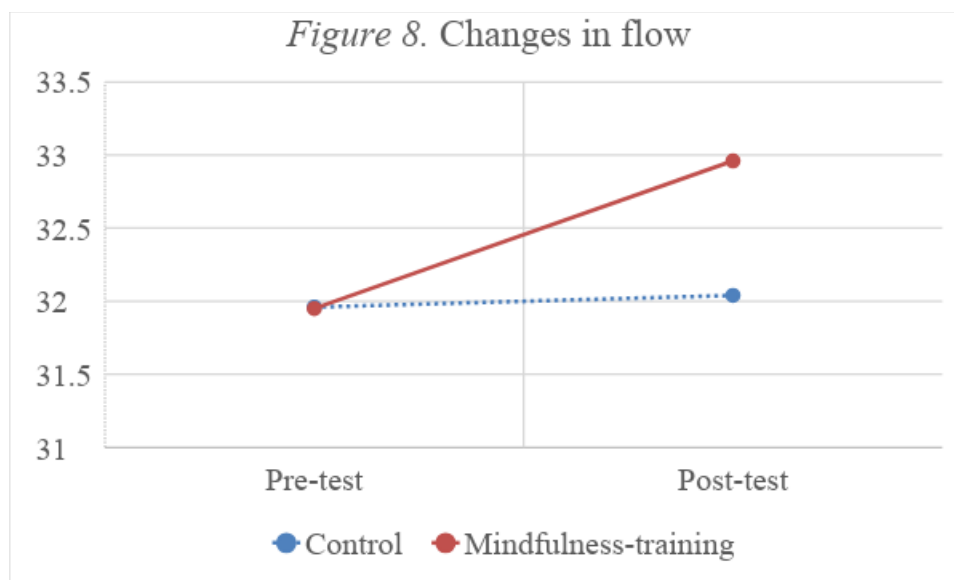
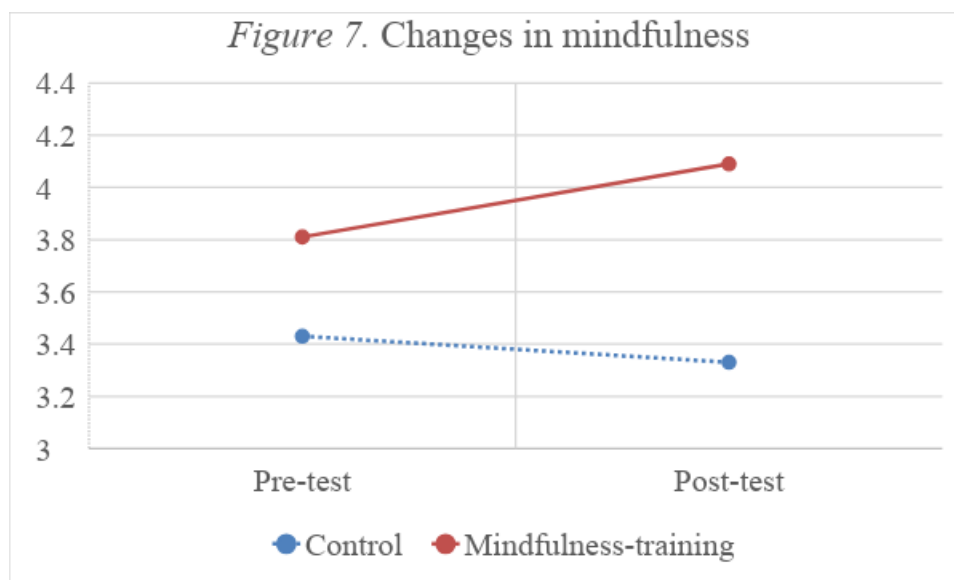
Measures

The *Mindful Attention and Awareness Scale* (MAAS; Brown & Ryan, 2003; described in the first experiment) was used to assess the frequency of mindfulness states in the everyday life of the student athlete.

The *Dispositional Flow Scale, 2* (Jackson, Martin, & Eklund, 2008; DFS-2), a 36-item scale, was used to assess flow in the athlete's sport and the overall experience of participating in that activity. According to Jackson and colleagues (2008), this scale was grounded in Csikszentmihalyi's nine-dimensional conceptualization of *flow* (1990). There are four items for each of the nine dimensions (e.g., loss of self-consciousness, concentration, merging of action and awareness).

Qualitative questionnaire. At the end of the season, athletes in the intervention group were asked to provide anonymous written responses to the following: 1) What did you enjoy most or find most helpful from the mindfulness intervention? 2) What did you find least helpful, or did not like about the mindfulness intervention? And, 3) In what ways did this experience impact you?

Results Baseline testing revealed no differences in groups (soccer vs. cross-country) in mindfulness and flow. Separate repeated-measures t tests were conducted to examine the changes from before and after the intervention on mindfulness and flow. Although statistical significance was not reached in either the mindfulness or flow measures, the analyses revealed positive trends in both mindfulness and flow for the soccer players (see Figures 7 and 8).



For the qualitative analyses, nine of fourteen participants from the soccer team completed the post-season questionnaire. The most common responses were that the interventions helped “get us out of our own heads,” and “focus on the moment” with “a heightened sense of awareness.” Participants identified a “calmness” before the games that included the ability to put personal problems aside to be ready to compete. Other responses included: “I enjoyed how it brought the team together,” “I enjoyed the energy it brought to the team,” “As the season progressed, with more meditation practices, I was able to focus on the game more,” and “It helped me let go of things that didn't matter when it was game time. I didn't have to be focused on external and internal distractions.”

Brief discussion The aim of the present study was to test the effects of mindfulness training on a varsity soccer team’s mindfulness levels and flow experiences during competition and throughout the duration of their competitive season. Although no statistically significant results were found, trends in the quantitative data and themes from the qualitative data suggested that MT was experienced positively and was relatively easy to include both pre-season and during-season for college athletes.

The third author (and the facilitator for Sessions 3-11) was a captain of the athletic team that underwent MT. It is not known whether having a teammate as the mindfulness instructor impacted the effectiveness of the intervention. It made the on-field interventions easier to facilitate, given the already established trust and personal knowledge of how mindfulness can affect flow, concentration, and performance in collegiate athletics. The current study highlights the need for future research assessing the impact of contemplative practices for collegiate athletes.

Experiment 4

In the last several years, our college has expanded its diversity-building mission through a Quality Enhancement Plan (QEP) in which we attempt to make our education more accessible, inclusive, and representative. As a member of the Diversity Fellowship program, the first author saw an opportunity to be a part of this diversity-building mission through including contemplative practices in an upper level psychology course. As was highlighted earlier, there is growing evidence that contemplative practices such as mindfulness training can reduce bias (both explicit and implicit) and promote an atmosphere of greater inclusivity.

To examine this issue, the first author structured his semester-long Health Psychology course (a different section from the one discussed in Experiment 1) to include more contemplative practices. The syllabus stated:

There are several goals related to developing diverse perspectives and applying a pluralistic orientation to our subject matter. Health, wellness, and illness do not occur in vacuums. They are largely influenced by history, cultural values, societal standards and practices. Thus, by the end of the semester, it is expected that you can discuss in detail the perspectives of groups (defined by race and socioeconomic class) in relation to health, psychology, and disparities; demonstrate sophisticated understanding of the complexity of elements important to members of other cultures or subcultures in relation to health practices and behaviors; evaluate and apply diverse perspectives to the complex subject of health, health behavior, health psychology, public policy, racism, and the health

care system; and ask complex questions about other cultures using multiple cultural perspectives.

To help meet these goals, students were invited to engage in contemplative practices during 12 class sessions, read articles designed to improve their understanding of diverse perspective and inclusive practices, and to complete a final paper that assessed their ability to meet the four goals described above.

Contemplative practices included Vipassana (insight) meditation, loving-kindness meditation, and self-compassion meditations. The Vipassana meditations were designed to help students improve their concentration and presence, particularly as it related to their moment-by-moment awareness. Students were instructed to see the practice as “a form of mental training that will teach you to experience the world in an entirely new way. You will learn for the first time what is truly happening to you, around you and within you. It is a process of self-discovery, a participatory investigation in which you observe your own experiences while participating in them as they occur” (Gunaratana, n.d.).

Loving-kindness (metta) meditations were included to help students engender happiness and kindness to themselves and others (repeating phrases such as “may you be safe, happy, and healthy”). First, students learned to do this with familiar people – visualizing others like family, friends, and their community. Students were then invited to direct the loving-kindness to a person of another race. This practice was paired with readings about implicit bias and how health choices are often more a matter of social circumstances (e.g., poverty and access to healthy food) than personal choice.

Third, we practiced several sessions of self-compassion meditations, using the same set of meditations that were used in Experiment 2 (based on Kristin Neff's work, previously reviewed). Students learned that self-compassion is comprised of mindfulness, common humanity, and self-kindness. In this course, we emphasized *common humanity* in an attempt to further increase feelings of inclusivity. These practices were partnered with readings on the psychology of health disparities (e.g., Adler, 2009).

Results At the end of the semester, students were given a take-home final exam in which they were asked to address the following prompts:

1. Health disparities are particularly apparent across social class and race. Using class materials (readings, lectures, practices), describe how culture and society influence the experience of health, illness, and stress.
2. Imagine that you are a health psychologist. An African-American patient from an upper-class background is referred to you by her physician. She is 31 years old and works as an attorney. She is already showing signs of hypertension (chronically elevated blood pressure) and problems with blood sugar control.
 - a. In conversation with her, what things would you ask about?
 - b. How might you explain to her the relationship between race, stress, and physiology? (Apply your knowledge from some of your readings on the impact and relevance of racism, both implicit and explicit, on stress and health.)
 - c. Can you recommend any strategies that you have learned this semester to help her manage her blood pressure, blood sugar, and stress/health? Be explicit.

Students wrote 500-750 words for each question. A panel of four faculty trained as Diversity Fellows then read the exams and used a rubric to assess the students' knowledge (i.e., the ability to recognize and discuss diverse perspectives) and skills (i.e., the ability to apply a pluralistic orientation). Four specific areas were examined: a) Knowledge of diverse perspectives and their roots, b) Knowledge of cultural worldview frameworks, c) Perspective taking, and d) Intercultural curiosity.

Scores were assigned based on the rubrics as follows: 1 = Novice, 2 = Competent, 3 = Proficient, 4 = Exemplary. There were 19 completed exams that were evaluated on this scale. For both of the knowledge-based questions, students scored between the *competent* and *proficient* range ($M = 2.75$, $SD = .35$). For the applied questions, students scored as follows: Perspective taking ($M = 3.25$, $SD = .35$) and Intercultural curiosity ($M = 2.5$, $SD = .71$).

Students demonstrated the ability to understand and apply (competently, and in many cases proficiently) diverse perspectives to issues in health psychology, health promotion, and health disparities. In the final paper, 1/2 of the students specifically discussed the use of contemplative practices (e.g., mindfulness, loving-kindness, compassion) in their recommendations for the fictional patient who was showing medical signs of stress-related illness. Students commented on how the LKM practices helped them see the broader picture of health as a part of a socio-cultural system. They described understanding how racism “gets under the skin,” causing physiological changes. Students showed the greatest proficiency in applying this knowledge when asked to engage in perspective-taking (both on the formal exam and in the classroom). This ultimately led to a classroom that felt more inclusive and understanding of the

myriad social forces that contribute to our well-being, and how to use contemplative practices to ameliorate the negative effects of stress (personal and cultural).

Conclusions, Limitations, and Future Directions

In the first study, the hypothesis that contemplative practices (i.e., MT) could be implemented in the classroom and positively affect mindfulness and self-compassion was supported. In the second study, self-compassion practices in a first-year seminar were associated with trends of increased self-compassion, decreased self-criticism, and improved psychological well-being. In the third study, the soccer players who received MT reported slightly higher (but not statistically significantly higher) levels of mindfulness and flow compared to the control group. Qualitative data suggested that the mindfulness training impacted female college athletes in positive ways: Improving calmness and present-minded focus, and reducing negative self-talk and distractions. Finally, in the fourth study, it was demonstrated that weaving culturally-based mindful practices into a curriculum that emphasized diversity and inclusion was beneficial. Students demonstrated competency and proficiency in understanding and applying contemplative practices, understanding and applying pluralistic perspectives, and in perspective-taking.

Each of the four studies described lends support to the idea that contemplative practices can be feasibly integrated into a college student's life. In none of these studies did we suggest to the students that they must practice outside of the classroom or the athletic field. Instead, we attempted to make the practices as accessible as possible. There were, of course, some students who did not want to participate in the practices. These students could sit quietly during the short practices. But the majority appeared to try to learn the skills such as concentration, relaxation, awareness, loving-kindness, compassion, and inclusion.

These studies should be considered pilot studies, based on their small sample sizes. The first study that showed a statistically significant impact of mindfulness training had the largest sample size of the three pre-post studies. Given that the other two quantitative studies found trends in the expected directions, it may be that those did not have large enough sample sizes to conclusively support the hypotheses of increased self-compassion, flow, and psychological well-being, following the interventions. Qualitative and anecdotal reports indicated that students felt that the practices were beneficial. We do not know whether any of the benefits lasted longer than the study period (a semester). Future studies should consider doing a follow-up assessment and should include studies with larger sample sizes and longer intervention periods. For example, we suspect (but don't know) that including contemplative practices in the classroom or on the field could have a lasting impact on the quality of life and psychological well-being of college students in a way that facilitates resilience and leads to higher rates of persistence towards graduation.

Finally, it should be noted that there may have been different outcomes had we used an accredited mindfulness teacher to lead the contemplative practices. On the other hand, the current studies accurately reflect what we were trying to demonstrate: that MT can be included in higher education settings without extraordinary effort (e.g., securing and paying a certified instructor). The current authors, none of whom has formal certification in MT, each felt comfortable and qualified to lead the practices and were approved to do so under the college's IRB. Our observations suggest that students learned easily from peers and their professor, and that they realized an array of benefits from practicing new contemplative skills in the context of their normal days.

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