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Teaching Self-Care to Caregivers: Effects of Mindfulness-Based Stress Reduction on the Mental Health of Therapists in Training

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Preparation for the role of therapist can occur on both professional and personal levels. Research has found that therapists are at risk for occupationally related psychological problems. It follows that self-care may be a useful complement to the professional training of future therapists. The present study examined the effects of one approach to self-care, Mindfulness-Based Stress Reduction (MBSR), for therapists in training. Using a prospective, cohort-controlled design, the study found participants in the MBSR program reported significant declines in stress, negative affect, rumination, state and trait anxiety, and significant increases in positive affect and self-compassion. Further, MBSR participation was associated with increases in mindfulness, and this enhancement was related to several of the beneficial effects of MBSR participation. Discussion highlights the potential for future research addressing the mental health needs of therapists and therapist trainees.

Keywords: mindfulness, meditation, therapist training, self-care

For mental health professionals, caring for those who are emotionally stressed or distressed is often itself stressful. Therapists commonly experience "compassion fatigue" (Figley, 2002; Weiss, 2004) due to the emotional labor that is often a part of therapeutic work (Mann, 2004). Stress-related psychological problems among therapists are especially apparent among those employed in such high-demand settings as hospitals (Vredenburgh, Carlozzi, & Stein, 1999) and among those working with populations who present special emotional challenges to caregivers, including clients who have experienced abuse (Coppenhall, 1995), trauma (Arvay & Uhlemann, 1996) and/or have personality disorders (Linehan, Cochran, Mar, Levensky, & Comtois, 2000). Research suggests that psychological impairment affects a significant proportion of direct service mental health professionals at some point in their careers (Coster & Schwebel, 1997; Guy, Poelstra, & Clark, 1989).

The negative consequences of stress on helping professionals include increased depression, emotional exhaustion and anxiety (Radeke & Mahoney, 2000; Tyssen, Vaglum, Gronvold, & Ekeberg, 2001), psychosocial isolation (Penzer, 1984), decreased job satisfaction (Blegen, 1993), reduced self-esteem (Butler & Constantine, 2005), disrupted personal relationships (Myers, 1994), and loneliness (Lushington & Luscri, 2001). Stress may also harm professional effectiveness because it appears to negatively impact attention and concentration (Skosnik, Chatterton, & Swisher, 2000), impinge on

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decision-making skills (Klein, 1996; Lehner, Seyed-Solorforough, O'Connor, Sak, & Mullin, 1997), and reduce providers' ability to establish strong relationships with patients (Enochs & Etzbach, 2004; Renjilian, Baum, & Landry, 1998). Further, stress can increase the likelihood of occupational burnout (Rosenberg & Pace, 2006), a syndrome that involves depersonalization, emotional exhaustion, and a sense of low personal accomplishment.

These findings highlight the importance of self-care for health care providers. There is evidence that younger and newer helping professionals are particularly susceptible to occupational stress (Skovholt & Ronnestad, 2003; Vander-Kolk, 1982; Vredenburgh et al., 1999). Thus, programs designed to teach self-care skills to helping professional trainees (i.e., students) may represent an important form of "preventive treatment" for individuals at risk for later psychological problems (cf., Coster & Schwebel, 1997).

Quantitative and interview research examining self-care and stress management for therapists has suggested that several facets of self-care are important, including self-awareness, self-regulation or coping, and a balancing of self and others interests (e.g., Baker, 2003; Brady, Guy, & Norcross, 1995). Self-awareness, defined in this context as an unbiased observation of one's inner experience and behavior, is thought to be foundational to self-care (Baker, 2003; Norcross, 2000; Coster & Schwebel, 1997) and important to successful therapeutic work with clients (Baker, 2003). To date, no research known to us has examined the efficacy of interventions designed to enhance self-awareness, self-regulation, or balance in therapists or therapists in training, although a recent qualitative report suggests that therapist trainees find psychological benefit from such an intervention (Newsome, Christopher, Dahlen, & Christopher, 2006). A growing body of research indicates that a stress reduction program that emphasizes the cultivation of mindfulness may enhance psychological well-being, mental health, and physical health (see Baer, 2003; Grossman, Niemann, Schmidt, & Walach, 2004, for meta-analytic reviews).

The mindfulness-based stress reduction program (MBSR; Kabat-Zinn, 1990) is based on the premise that enhancing the capacity to be mindful—that is, to attend to present moment experience in a receptive manner—will, over time, reduce the identification with self-focused thoughts and emotions that can lead to poorer mental health (e.g., Brown, Ryan, & Creswell, in press). Clinical research conducted over the past 25 years has supported the efficacy of MBSR for reducing distress and enhancing well-being in individuals with a variety of medical and psychiatric conditions (see reviews by Baer, 2003; Bishop, 2002; Grossman et al., 2004). More pertinent to the present study, MBSR has also demonstrated efficacy in health care professionals and trainees (Cohen-Katz, Wiley, Capuano, Baker, Kimmel, & Shapiro, 2005; Rosenzweig, Reibel, & Greeson, 2003; Shapiro, Astin, Bishop, & Cordova, 2005; Shapiro, Schwartz, & Bonner, 1998). MBSR was designed for application to any individual facing stress, and the program can be flexibly adapted to specific populations. The research with health care providers and trainees in particular suggests that beginning mental health professionals may also find benefit from the self-care skills training offered in the MBSR program.

The present study had three purposes. We first sought to test the efficacy of MBSR in enhancing the mental health of therapists in training as measured by a variety of cognitive and affective indicators. The importance of this aim lies in promoting the well-being and stress tolerance of trainees preparing to enter the demanding counseling and psychotherapy professions. Given the potential costs of stress on mental health care professionals' well being, teaching future therapists' ways of managing stress seems imperative. In line with past MBSR research, we predicted that relative to controls, participants in the MBSR program would show improvements in mental health and well-being.

A second purpose was to examine the processes by which MBSR achieves its beneficial effects. Namely we sought to examine whether MBSR is associated with increased mindfulness and if this change is associated with positive outcomes. Little is currently known about such processes. MBSR focuses on the enhancement of the quality of mindfulness, and it is this enhancement that is believed to be responsible for the positive effects of the intervention. With the recent development of measures of the mindfulness construct (Baer, Smith, & Allen, 2004; Brown & Ryan, 2003;

Walach, Buchheld, Buttenmuller, Kleinknecht, & Schmidt, 2006), research has begun to test these two propositions empirically. In an MBSR study with nurses, Cohen-Katz et al. (2005) found that scores on one measure of mindfulness, the Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003), increased significantly over the course of the 8-week program. In an MBSR study with cancer patients, Brown and Ryan (2003) found that increases in MAAS-assessed mindfulness were related to declines in mood disturbance and stress. The present study sought to extend this process research on mindfulness enhancement through MBSR and the effects of that enhancement. We predicted that levels of mindfulness would increase over the course of the 8-week MBSR program with counseling students, and that these increases would be related to positive changes in mental health.

A final purpose of this study was to explore the relation between mindfulness practice and mental health outcomes. A primary component of the MBSR program is in-class and home-based practice of several mindfulness-based skills, and it is widely believed that this skills practice is related to positive outcomes of the MBSR program (Carson, Carson, Gil, & Baucom, 2004; Shapiro, Bootzin, Figueredo, Lopez, & Schwartz, 2003). However, past research examining the relation between amount of mindfulness practice and degree of change in affective, behavioral, and neurophysiological outcomes has been mixed, with some reporting positive findings (Carson et al., 2004; Shapiro et al., 2003) and others null findings (e.g., Davidson, Kabat-Zinn, & Schumacher, 2003). Given the lack of clear, supportive evidence for the role of mindfulness practice on MBSR outcomes, no hypotheses concerning this relation were made in the present study. However, given the importance of this issue for mindfulness intervention research, we examined associations between the type and amount of mindfulness practice performed and the well-being-related outcomes of the MBSR program.

Method

Participants

Study participants were recruited from a master's level counseling psychology program at a small private Jesuit university. Student participants were enrolled in one of three graduate courses: Stress and Stress Management, Psychological Theory, and Research Methods. On the first day of class in all three courses, students were given a 5-minute introduction to the study procedures and invited to participate. There was no credit offered for participation, and students were told it was completely voluntary. A total of 83 students were enrolled in these courses in the Fall, 2004 term, and 64 elected to participate in the study and gave written informed consent. Of the 22 students enrolled in the intervention course (Stress and Stress Management), all completed both the baseline measures and the postcourse measures. Of the 61 students enrolled in the two control courses, 42 completed baseline measures, and 32 completed the postcourse measures. Data for the 54 participants (88.9% female) who completed measures at both assessment points were retained for analyses. Those who completed the study did not differ from noncompleting participants on any of the demographic or psychological variables collected at baseline, all $ps > .05$. The average age of the 54 retained participants was 29.2 years ($SD = 9.07$). The majority (76.9%) were Caucasian, and the rest were Latina/Latino (7.7%), Asian (5.8%), Filipino (3.8%), African American (1.9%), Portuguese, and Persian (each 1.9%); two (3.8%) declined to indicate their race or ethnicity. The majority of students were enrolled in their first year (56.9%) or second year (29.4%) of graduate school; the remaining students were in their third year (11.8%) and fourth year (2%).

Study Design and Procedures

The study was conducted using a prospective, nonrandomized, cohort-controlled design. The MBSR intervention was offered as part of the Stress and Stress Management course, while the other two courses noted above served as cohort controls. All courses were offered in the same academic term and all three courses were required for the health psychology master's degree in counseling psychology. During the first class in each course, students were invited to participate in the study and informed consent was obtained from those interested. All demographic and psychological measures were collected in the first week of the academic term (Time 1); all

psychological measures were again collected 9 weeks later, in the final week of the term (Time 2). One PhD-level instructor taught the intervention course and one of the control courses (Psychological Theory), and a second PhD-level instructor taught the other control group course (Research Methods).

MBSR Intervention Course

The Stress and Stress Management course consisted of 10 weekly classes, meeting 3 hours per week. The 8-week MBSR intervention began in the third week; the intervention was modeled after the well-established manualized treatment program developed by Kabat-Zinn and colleagues at the University of Massachusetts (e.g., Kabat-Zinn, 1982). MBSR includes both didactic and experiential elements that focus on the training of mindfulness-based meditative practices. These practices are designed to cultivate an open or receptive attention to all stimuli that enter the field of awareness on a moment-by-moment basis. In particular, mindfulness practices are designed to enhance participants' ongoing awareness of their sensory experiences, thoughts, feelings, somatic sensations, and behaviors. MBSR is premised on the thesis that bringing greater awareness to actual experience in the "here and now" encourages a disengagement from self-related thoughts (e.g., rumination) and emotions (e.g., anxiety) that can have a detrimental effect on well-being (Leary, 2004).

The MBSR intervention included weekly 2-hour sessions wherein students received training in the following five mindfulness practices (adapted from Kabat-Zinn, 1982). Sitting meditation involved a concentration of attention to the sensations of breathing, while remaining open to other sensory events, and to physical sensations, thoughts, and emotions. The body scan involved a progressive movement of attention through the body from toes to head while observing physical sensations in each region. Hatha yoga consisted of stretches and postures designed to enhance mindful awareness of the body and to balance and strengthen the musculoskeletal system. A guided loving-kindness meditation was also taught, which involved experiential practice in compassion toward self and others. Finally, participants were taught informal practices which emphasized bringing mindfulness into day-to-day life.

The non-MBSR portion of the course served as an overview of stress and various nonmindfulness-based stress management techniques (e.g., humor, exercise, hypnosis, social support, acupuncture). This portion was entirely didactic in nature and did not include experiential exercises. Students were not instructed to practice any of the techniques discussed. Once MBSR began, students were asked to focus on the mindfulness practices.

Control Group Courses

Like the Stress and Stress Management course, both the Research Methods and Psychological Theory courses met 3 hours weekly for 10 weeks under the guidance of trained instructors. Thus, the intervention and control group courses were structurally equivalent in instructor attention, weekly and total duration, and course modality (both were group-based). The control group courses were entirely didactic in nature and did not include experiential stress management exercises. The Research Methods course focused on research design, various statistical analyses, and critical reading of journal articles. The Psychological Theory course offered an overview of psychological theories including psychodynamic, humanistic, behaviorist, and cognitive paradigms.

Pre- and Postcourse Measures

Mindfulness. The Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003) is a 15-item instrument assessing the frequency with which an individual is openly attentive to, and aware of, present events and experiences. The scale assesses mindfulness of both internal states (e.g., emotions) and overt behavior (e.g., attention to tasks, social interactions, etc.) on a 6-point Likert scale. Example items of the scale include, "I could be experiencing some emotion and not be conscious of it until some time later" and "It seems I am 'running on automatic' without much awareness of what I'm doing." Higher scores indicate higher mindfulness. The MAAS has demonstrated strong psychometric properties (Brown & Ryan, 2003; Carlson & Brown, 2005). In the present study, internal consistency was acceptable

(Cronbach's alpha = .79) though slightly lower than in past research (e.g., Brown & Ryan, 2003; this and all reported sample α's are from the Time 1 data).

Distress and well-being. In an attempt to broadly assess psychological distress and well-being, well-validated scales tapping several cognitive and affective dimensions of experience were used. Positive and negative affect are primary dimensions of subjective well-being (Diener, 1984), and these were measured with the 20-item version of the Positive and Negative Affectivity Schedule (PANAS; Watson, Clark, & Tellegen, 1988). Example adjectives included *interested* and *enthusiastic* (positive affectivity), and *distressed* and *afraid* (negative affectivity). Scores on the 7-point scales indicated higher levels of both positive and negative affect. Both subscales showed acceptable levels of internal consistency in this sample (α = .88 and α = .83, respectively).

To more specifically measure levels of stress and distress, the 10-item version of the Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983; sample α = .87) was used to assess the extent to which life situations are appraised as stressful. An example item is, "In the last month, how often have you felt nervous and stressed?" Higher scores on the 5-point scale indicate higher perceived stress. Anxiety was measured at both state ("past week") and trait ("past month") levels using the 20-item State/Trait Anxiety Inventory (STAI; Spielberger, 1983; sample state α = .95; sample trait α = .96). Example items include, "I am tense" and "I feel strained." The STAI is scored such that higher scores on the 7-point scale reflect higher anxiety.

Rumination is a risk factor for depression and was measured with the 12-item rumination portion of the Reflection Rumination Questionnaire (RRQ; Trapnell & Campbell, 1999; sample α = .94). This 12-item subscale measures "ruminative self-attention," the tendency to dwell on, rehash, or reevaluate events or experiences. Higher scores on the 5-point scale indicate higher rumination. An example item is, "Sometimes it is hard for me to shut off thoughts about myself." Finally, the 26-item Self-Compassion Scale (Neff, 2003; sample α = .94) was used to measure self-compassion based on an aggregate of responses on 3 subscales: self-kindness versus self-judgment, common humanity versus isolation, and mindfulness versus overidentification. Example items include, "I try to be loving toward myself when I'm feeling emotional pain" and "When times are really difficult, I tend to be tough on myself" (reversed). Higher scores on the 5-point scale indicate higher self-compassion.

Daily Mindfulness Practice Diaries

Students in the MBSR course were asked to complete daily mindfulness practice diaries for the entire 8-week intervention so as to examine the effects of practice on the study outcomes. On these diaries, to be completed at the end of each day, MBSR participants indicated the number of minutes of sitting meditation, body scan, yoga, and informal mindfulness practice performed that day.

Results

Preliminary analyses showed that students in the two control classes did not differ significantly on any of the demographic or psychological measures at the outset of the study (Time 1; all *p*s $>$ .05), so all data for these two classes were combined into a single control group for further analyses. Next, analyses showed that the MBSR and control group did not differ on any of the study measures at Time 1 except academic year: most control group participants (70%) were in their first academic year, compared to 38% of MBSR participants, $\chi^2(3) = 8.23$, $p < .05$. Finally, Time 1, Time 2, and Time 1 to Time 2 change scores showed no gender differences in preliminary analyses (all *p*s $>$ .05), so gender will not be further considered.[1]

MBSR Intervention Effects on Well-Being and Distress

To examine whether participation in the MBSR program (vs. participation in the control courses) impacted levels of distress and well-being, we conducted 2 (group) $\times$ 2 (time) mixed factorial analyses of variance

[1] Due to the low numbers of minority participants in the sample, differences in effects due to ethnic and racial status were not tested.

(ANOVAs) on each outcome variable, using an alpha level of .05 as the criterion for statistical significance. Because preliminary analyses showed that age and year in program were related to one or more of the outcomes, these measures were included as predictors where relevant. Table 1 displays the primary results of the ANOVAs. Participants in the MBSR class showed significant improvements on all 7 outcomes, relative to participants in the control group. In support of our primary hypothesis, participants in the MBSR intervention reported significant decreases in perceived stress, negative affect, state and trait anxiety, rumination, as well as significant increases in positive affect and self-compassion. Several main effects for age were found, with older students showing lower levels of negative affect, trait anxiety, rumination, perceived stress, and higher self-compassion. No main effects of year in program were found, and there were no age $\times$ time or year $\times$ time interaction effects. Finally, despite the fact that the MBSR and control groups differed in year of program, there were no year $\times$ group interaction effects on any outcome.

Do Changes in Mindfulness Occur and Are They Associated With MBSR Intervention Effects?

A second purpose of this study was to examine whether the MBSR intervention is associated with increases in mindfulness and if so, whether the positive outcomes of MBSR participation were related to increases in mindfulness occurring over the course of the program. Table 1 shows, using a mixed factorial ANOVA, that MBSR participants showed significant prepost course increases in mindfulness relative to control group participants.

To test whether prepost change in mindfulness predicted prepost change in each of the well-being/distress outcomes for the MBSR group, simple regression models were constructed. Residualized change scores were first calculated on MAAS mindfulness and on each outcome variable (Cohen & Cohen, 1983; Judd & Kenny, 1981). In this pretreatment of the data, Time 2 scores were adjusted for their Time 1 values, so that only variance in residual change in the outcome variables was left to be explained by residual change in the mindfulness predictor. Age was not related to any of the outcome change scores so was not included as a predictor in the models. Table 2 displays the results of the regression analyses. Across the seven distress and well-being outcomes, significant relations between change in mindfulness and change in outcome were found in four models. Specifically, an increase in mindful attention and awareness from pre- to postintervention predicted a drop in rumination, trait anxiety, and perceived stress, and an increase in self-compassion. No predictive effects were

Table 1
Mean Scores by Group, Pre-Course (Time 1) and Post-Course (Time 2), and MBSR Intervention Effects

	MBSR		Control		
Variable	Time 1 *M (SD)*	Time 2 *M (SD)*	Time 1 *M (SD)*	Time 2 *M (SD)*	p_{inter}
PANAS positive affect	4.87 (0.75)	5.45 (0.94)	5.14 (0.74)	4.90 (0.95)	.0002
PANAS negative affect	3.09 (0.90)	2.55 (1.01)	3.04 (1.03)	2.99 (0.89)	.04
STAI anxiety, present	3.17 (1.19)	2.18 (1.09)	2.67 (1.11)	2.76 (1.01)	.0005
STAI anxiety, past month	3.43 (0.90)	2.51 (0.77)	3.33 (1.05)	3.44 (1.14)	.0002
PSS perceived stress	24.64 (7.81)	18.36 (5.15)	21.72 (7.14)	22.91 (7.54)	.0001
RRQ rumination	3.42 (0.83)	2.78 (0.63)	3.15 (0.92)	3.11 (0.90)	.0006
SCS self-compassion	18.06 (3.97)	20.92 (3.84)	19.41 (3.75)	19.22 (4.12)	.0001
MAAS mindfulness	3.76 (0.80)	4.01 (0.51)	4.05 (0.64)	3.80 (0.62)	.006

Note. $n = 22$ in MBSR group; $n = 32$ in control group. The p_{inter} column shows the ANOVA Group $\times$ Time Interaction Significance Levels. RRQ = Reflection Rumination Questionnaire; PANAS = Positive Affectivity Negative Affectivity Schedule; STAI = State/Trait Anxiety Inventory; PSS = Perceived Stress Scale; SCS = Self-Compassion Scale; MAAS = Mindful Attention Awareness Scale.

Table 2
Simple Regression of Pre- to Post-Intervention Residual Change in Study Outcomes on Pre- to Post-Intervention Residual Change in Mindfulness (MAAS)

Outcome	Parameter estimates		
	B	*SE*	β
RRQ rumination	−.56	.18	−.57**
PANAS positive affect	.25	.25	.22
PANAS negative affect	−.06	.38	−.03
STAI anxiety, present	.59	.41	.31
STAI anxiety, past month	−.79	.29	−.52**
PSS perceived stress	−5.56	1.49	−.65***
SCS self-compassion	2.95	.94	.58**

Note. $n = 22$. MAAS = Mindful Attention Awareness Scale; RRQ = Reflection Rumination Questionnaire; PANAS = Positive Affectivity Negative Affectivity Schedule; STAI = State/Trait Anxiety Inventory; PSS = Perceived Stress Scale; SCS = Self-Compassion Scale.
** $p < .01$. *** $p < .001$.

found in positive and negative affect and state anxiety, all *p*s > .05.

Is Mindfulness Practice Time Associated With MBSR Intervention Effects?

A final purpose of the study was to determine whether amount of time spent in four mindfulness practices was related to the well-being and distress outcomes. On average, participants in the MBSR intervention reported spending 55.92 minutes per week ($SD = 50.09$) in all forms of mindfulness practice. The most common practice reported was informal practice ($M = 60.41$ min, $SD = 62.74$), followed by the body scan ($M = 57.10$ min, $SD = 34.68$), hatha yoga ($M = 54.56$ min, $SD = 138.71$), and then sitting meditation ($M = 51.61$ min, $SD = 32.14$). Repeated measures analyses of variance (ANOVA) tested the effects of the mean number of weekly minutes of mindfulness practice on prepost intervention changes in distress and well-being. No significant effects of total weekly mindfulness practice time over the 8 weeks of the MBSR program on prepost intervention changes in distress and well-being were found (all *p*s > .05). ANOVAs based on practice time over 8 weeks in each of the four practices separately also failed to reveal significant effects on prepost MBSR changes in distress and well-being (all *p*s > .05).

Discussion

Preparation for the role of therapist can occur on both professional and personal levels. Research suggests that therapists, like other helping professionals, are at risk for stress-related psychological problems (e.g., Dryden, 1995). Although sources of stress are well-studied in mental helping professionals, implementation of stress management interventions for this population is lacking (e.g., Edwards, Hannigan, Fothergill, & Burnard, 2002). Training in self-care may be a useful complement to the professional training of future therapists (e.g., Baker, 2003), and the present study was designed to examine the mental health effects of one approach to self-care, based on the cultivation of mindfulness, for therapists in training.

In support of our primary hypothesis, this study found that a mindfulness-based stress reduction (MBSR) program was associated with improvements in graduate counseling psychology students' mental health. Compared to cohort controls, students in the MBSR program reported significant prepost course declines in perceived stress, negative affect, state and trait anxiety, and rumination, and significant increases in positive affect and self-compassion. These findings suggest that MBSR may not only lower stress and distress but also enhance the ability to regulate emotional states, as reflected in the declines in rumination. This may be important in warding off depressive states (Nolen-Hoeksema, Morrow, & Frederickson, 1993). In addition, the increases in self-compassion are particularly relevant to the field of counseling and therapy, as compassion for self, as well as for clients, has been posited as an essential part of conducting effective therapy (Gilbert, 2006). Research demonstrates that

therapists who lack self-compassion and are critical and controlling toward themselves, are more critical and controlling toward their patients and have poorer patient outcomes (Henry, Schacht, & Strupp, 1990). In general, the present results support past research on the mental health benefits of MBSR for helping professionals and trainees (Cohen-Katz et al., 2005; Rosenzweig et al., 2003; Shapiro et al., 1998; Shapiro et al., 2005), while further suggesting that MBSR may have broad-based effects on a number of cognitive and affective qualities relevant to mental health.

Supporting our second hypothesis, this study found that MBSR participation increased levels of mindfulness. It has been assumed that MBSR enhances mindfulness because this is the focus of the program. However, to date, only one published study has demonstrated that MBSR participation is associated with significant increases in mindfulness (Cohen-Katz et al., 2005). Further, we tested, and found partial support for our third hypothesis, namely that increases in mindfulness were related to the beneficial effects of MBSR on mental health. Increases in mindful attention and awareness were associated with declines in perceived stress, anxiety, and rumination, and increases in self-compassion. These findings provide support for the claim (Shapiro, Carlson, Astin, & Freedman, 2006) that mindfulness is a central feature of MBSR that is related to the positive outcomes of the program. This latter result also supports past MBSR research showing that increases in MAAS-measured mindfulness are related to mental health enhancement (Brown & Ryan, 2003). Together, these results suggest that the enhancement of mindfulness that is foundational to MBSR instruction may be at least partially responsible for its beneficial effects.

Although not hypothesized, this study examined whether the amount of mindfulness practice over the course of the MBSR program was related to changes in psychological distress and well-being. No significant relations were found, a finding of other research as well (e.g., Davidson et al., 2003). The experiential practice of mindfulness skills is an important component of the MBSR program and is believed to carry some of the responsibility for its benefits. The sample in the present study was not large, and this may have inhibited our ability to detect significant effects for practice time. Also, the average weekly time spent in mindfulness practice was quite limited, and the effects of practice on psychological outcomes may only appear when some critical threshold of practice time has been met. In this regard, it is notable that in Carson et al.'s (2004) study showing that the amount of mindfulness practice was related to a number of intrapersonal and interpersonal outcomes, the average participant practiced 32 minutes per day (224 min per week), 4 times more than the average participant in the present study. That said, it is likely that *quality* of practice time is potentially as relevant to outcomes as the *quantity* thereof.[2] This issue deserves consideration in future research.

The study findings suggest implications for further research on therapist trainee self-care. Graduate counseling and other mental health care training programs are challenged to find ways to support the health and well-being of students while offering professional training in therapy knowledge and skills (Shapiro, Shapiro, & Schwartz, 2000). That the introduction of a brief mindfulness-based intervention into the graduate curriculum demonstrated a number of mental health benefits in this study suggests that research should further explore the utility of MBSR and other awareness-based self-care programs as a complement to core trainee curricula.

Limitations and Future Research

The present study was limited in several ways and suggests several possibilities for future research. Most notably, this study was not a randomized trial. The study was cohort-controlled, as all participants were graduate counseling psychology students. No meaningful differences between MBSR and control group participants were found at baseline, but the lack of randomization did not allow us to control for potential motivational differences that may have affected course selection and subsequent experience. For example, all three courses were required for the minor in health psychology, but only the control group courses were required for the general MA in counseling psychology.

[2] We thank an anonymous reviewer for pointing out this distinction.

Therefore, the majority of students in the Stress Management course likely had a particular interest in health psychology that may have led to motivational differences from those taking the control group courses. However, motivation or expectation can create or exacerbate group differences when intervention and active control group programs are structurally divergent (Baskin, Tierney, Minami, & Wampold, 2003), and in this regard it is notable that the MBSR and control group courses in this study were structurally equivalent in course modality, instructor attention, and both weekly class time and total course duration. However, research using randomized controlled study designs would help to control for potential motivational effects.

The sample sizes in the present study were relatively small, and research using larger samples is required to test the reliability of the results found here. Also, most participants were women, and it is possible that men and women may respond differently to the MSBR program, although no evidence for gender differences has been reported in past research. Another limitation in generalizability is that all participants were students in a small private graduate program. These results might not apply to doctoral students or to students at larger and/or public universities. Future research could explore the effects of MBSR with other graduate psychology populations and in clinical training sites, where the effects of MBSR participation on clinician-client interaction and therapy outcomes might be explored.

Finally, future research would do well to include follow-up assessments to determine whether the positive effects of the MBSR program found here are lasting. It would be especially useful to know whether MBSR participation, and the enhancement of mindfulness that appears to be achieved through the program, can help to inoculate beginning counselors and therapists against the stresses of their new demanding profession. The effects of mindfulness training on positive affect and self-compassion found here may help to enhance professional skills, reflected in a greater kindness toward, and acceptance of clients and patients, and this could also be explored in future research. Future longitudinal research could help to answer these questions.

Conclusion

Recent years have witnessed an increase in the number of educational programs designed to train the "whole person," many of them using contemplative methods (Garrison Institute, 2005). Yet research to determine the specific benefits and applications of such methods has only begun. We believe that individuals training for demanding helping professions may represent a particularly suitable population for instruction in such methods. The present study found that one contemplative approach, based on the cultivation of mindfulness, had mental health benefits for therapists in training. It is hoped this study will help to build a foundation for future research investigating a variety of potential benefits of mindfulness training for prospective therapists.

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