ABSTRACT

This pilot study of baccalaureate nursing students explored the effects of an 8-week mindfulness-based stress reduction (MBSR) course on stress and empathy. The course was intended to provide students with tools to cope with personal and professional stress and to foster empathy through intrapersonal knowing. A convenience sample of 16 students participated in the course, used guided meditation audiotapes at home, and completed journal assignments. Stress and empathy were measured using paired sample t tests.

Participation in the intervention significantly reduced students’ anxiety (p > .05). Favorable trends were observed in a number of stress dimensions including attitude, time pressure, and total stress. Two dimensions of empathy—personal distress and fantasy—also demonstrated favorable downward trends. Regular home meditation was correlated with additional benefit. Participants reported using meditation in daily life and experiencing greater well-being and improved coping skills as a result of the program. Findings suggest that being mindful may also decrease tendencies to take on others’ negative emotions. Coping with stress and fostering the affective domain are important facets of nursing education that may be facilitated by mindfulness training.

A growing body of literature concerning the inherent stresses of nursing and medical education underscores the need to include stress management education. Nursing students report especially high stress levels, in some cases higher than those of students in other health professions. Nursing students have attributed their stress to academic, financial, work-related, and interpersonal circumstances (Beck, Hackett, Srivastava, McKim, & Rockwell, 1997; Jones & Johnston, 1997; Kendrick, 2000). Studies suggest that high stress and anxiety impede concentration, memory, and problem-solving ability, which, in turn, adversely affect academic performance and learning.

Research in biological and behavioral sciences affirms the relationship between psychological stress and mental and physical illnesses, and job-related stress has been identified by the U.S. Department of Health and Human Services (2000) as a risk factor for numerous health-related problems. Although multidimensional stress management that includes cognitive, physiological, and behavioral components has been effective with nursing students, stress management is not routinely taught in nursing curricula (Grossman & Wheeler, 1999; Heaman, 1995; Mahat, 1996; Manderino, Ganong, & Darnell, 1988; Meisenhelder, 1987).

Stress may also diminish communication, interpersonal effectiveness, and empathy (Kendrick, 2000; Marcus, 1999; Motowidlo, Packard, & Manning, 1986). Empathy and caring are considered cornerstones of nursing; yet, much is unknown about how to foster these qualities. Cultivating empathy and mitigating stress are part of a larger inquiry that includes questions such as:

• How do we care for ourselves?
• How do we compassionately care for others?
• What do we pay attention to?
• What should we teach?

Some of these questions may be answered by deepening self-awareness and remembering that compassion that does not include oneself is incomplete (Kornfield, 1994).
LITERATURE REVIEW

Empathy

Empathy in health care is the capacity to understand and respond to clients’ emotions and their experience of illness. Empathy is considered an antecedent to prosocial behavior. Studies have linked empathy to increased client satisfaction and decreased distress, significant drops in emergency room visits by individuals who are homeless, and reduced risk of physician malpractice litigation (La Monica, Wolf, Madea, & Oberst, 1987; Levinson, Roter, Mullooly, Dull, & Frankel, 1997; Olson, 1995; Redelmeier, Molin, & Tibshirani, 1995).

Empathy is generally understood as a multidimensional construct, although concept development and definitions have varied. Alligood (1992) conceptualized two types of empathy: basic empathy (i.e., a universal human trait) and trained empathy (i.e., skills developed through training). Morse, Bottorff, Anderson, O’Brien, and Solberg (1992) identified four components of empathy:...emotive—the ability to subjectively experience and share in another’s psychological state, emotions, or feelings; moral—an internal altruistic force that motivates the practice of empathy; cognitive—the provider’s intellectual ability to identify and understand another person’s feelings and perspective from an objective stance; and behavioral—communicative response to convey understanding of another’s perspective. (p. 813)

Another conceptualization of empathy defines affective, cognitive, self-focused, and other focused dimensions (Davis, 1983). Empathy is viewed as relational, with intrapersonal and interpersonal components. (Bennett, 1995). It has also been conceptualized as a dynamic process that begins with active listening, shifts to cognitive understanding, leads to communication, and creates a feedback loop between health care providers and clients (Barrett-Lennard, 1993).

To foster empathy among nurses, researchers have combined cognitive and interpersonal strategies with mixed results. The cognitive approach to training focuses on the nature and importance of empathy, while the interpersonal approach emphasizes communication training and perceptual skills (Cutcliffe & Cassidy, 1999; La Monica et al., 1987; Oz, 2001; Reynolds & Presly, 1988; Wheeler, Barrett, & Labey, 1996). However, researchers have repeatedly found that empathic response leading to helping behavior is more related to affect than to cognition. In addition, trained empathy (i.e., learned skills focusing on behavior and communication) may deteriorate over time (Baillie, 1996; Davis, 1983; Evans, Wilt, Alligood, & O’Neil, 1998; Oswald, 2002). For these reasons, some authors have recommended a shift away from a behavioral/communication approach and toward strategies that foster empathy through the intrapersonal domain.

A common assumption exists among health care providers that an affective response to clients represents overinvolvement and a loss of objective and professional boundaries. A group of nurses working with cancer patients reported the downside of empathy as increasing personal stress and vulnerability (Hope-Stone & Mills, 2001). Nevertheless, a growing dialogue on the importance of empathy among health care providers emphasizes human caring as benefiting both clients and caregivers (Baillie, 1996; Hope-Stone & Mills, 2001; Jordan, 2000; Remen, 1996; Shapiro & Schwartz, 2000; Watson, 1996).

In addressing empathy, it is important to distinguish between emotional contagion and empathic concern. Emotional contagion refers to taking on the emotions of another. Empathic concern is caring about the well-being of another and does not require shared emotion. Clients and nurses benefit from empathic concern but not from emotional contagion. Empathic nurses are more likely to act altruistically, for social good, and without aggression. In one study, nurses with greater empathic concern and communicative responsiveness were less prone to burnout, less likely to depersonalize patients, and less likely to report reduced personal accomplishment. Conversely, nurses who experienced greater emotional contagion were more prone to burnout and emotional exhaustion (Miller, Stiff, & Ellis, 1988; Omdahl & O’Donnell, 1999; Williams, 1989).

Sharing feelings with clients is difficult and requires a flexible boundary between clients and health care providers. If this boundary is too rigid, nurses do not know what clients feel and do not sense a shared humanity. If the boundary is too weak, nurses feel overwhelmed, paralyzed, burned out, or unable to help (Marcus, 1999). Self-awareness helps clarify boundaries between oneself and another and, thereby, may foster empathy. In addition, recognizing and understanding one’s own feelings provides insight into what others feel (Baillie, 1996; Levenson & Ruef, 1992; Shapiro, Schwartz, & Bonner, 1998).

Nursing education may provide critical opportunities to foster empathy. However, this training period may also potentially diminish emotional responsiveness. Stressors in nursing include time constraints; contact with clients who are sick or dying; traumatic, emotional flooding; overidentification with psychomotor tasks; and emphasis on the cognitive domain (Baillie, 1996; Levenson & Ruef, 1992; Marcus, 1999). Therefore, learning skills that lead to self-awareness and self-care could have positive long-term consequences in students’ educational, professional, and personal lives by fostering empathy, enhancing intrapersonal knowledge, and decreasing burnout. Authors list numerous qualities requisite to empathy, including receptivity, freeing the mind from distractions, relaxing attention, suspending judgment, active attending and listening, and remaining in the “here and now” (Barrett-Lennard, 1993; Forsyth, 1980; Wiseman, 1996; Zderad, 1970). These attributes are similar to those qualities developed through mindfulness meditation.

Mindfulness

Mindfulness meditation may offer a unique way to foster empathy and manage stress, combining affective, cog-
nitive, intrapersonal, and interpersonal dimensions. As with qualities attributed to empathy, mindfulness suggests suspending judgment, being present in the here and now, attending to and listening for whatever arises, and remaining focused and relaxed. Mindfulness has the capacity to transform one’s perception and interpretation of the outer world. This approach provides specific methods for exploring the internal landscape of experience that leads to insight.

Mindfulness meditation is based on the ancient contemplative tradition called vipassana, which means “seeing clearly.” Mindfulness is the process of learning how to be with all experiences while being less judgmental and reactive. Aspects of mindfulness practice include self-reflection, acceptance, self-care, developing resources to care for others, and opening to difficulties without avoidance. This practice leads to an open heart. Qualities of compassion and loving kindness are seen as inherent in human nature, uncovered by the practice of meditation (Kabat-Zinn, 1990; Kornfield, 1993).

Mindfulness-Based Stress Reduction

Mindfulness-based stress reduction (MBSR), developed by Kabat-Zinn (1990) and colleagues at the University of Massachusetts, is a participatory wellness program based on mindfulness meditation. It has been used successfully to decrease a wide range of physical and psychological symptoms and increase well-being among clients (Astin, 1997; Carlson, Ursuliak, Goodey, Angen, & Specn, 2001; Kabat-Zinn et al., 1998; Kristeller & Hallett, 1999; Reibel, Greeson, Brainard, & Rosenzweig, 2001; Teasdale et al., 2000). Studies with well populations link MBSR to improved physical, emotional, social, and mental health (Shapiro et al., 1998; 1998; Williams, Kolar, Reger, & Pearson, 2001; Young, Bruce, Turner, & Linden, 2001).

One of these studies used nursing student participants (Young et al., 2001). Another correlated mindfulness practice among medical students with increased empathy and spirituality (Shapiro et al., 1998). Several authors suggest mindfulness as a basis for the provider-patient relationship and attribute greater vitality, compassion, patience, self-knowledge, concentration, and openness toward their clients to the practice of mindfulness meditation (Kabat-Zinn, 1990; Roth, 2001; Santorelli, 2000; Shapiro & Schwartz, 2000).

Participants in MBSR are taught how to work with intentional and attentional aspects of awareness. Awareness is not limited to any one focal point, but rather encompasses mind, body, environment, and whatever arises in the field of awareness. Mindfulness-based stress reduction offers a way to experience life directly, without its being filtered through beliefs, expectations, and preconceptions. Participants in MBSR are instructed to attend to the present moment, carefully observe their breathing, have an internal focus, and, at the same time, pay attention to the outer world. Incorporated in mindfulness practice are helpful attitudes, such as proceeding without judgment and expectation. Calming the mind and body allows participants to gain insight. Students of mindfulness become aware of repetitive cognitions and feelings and habitual behaviors. Attending to the present moment, while incorporating self-reflection and suspending judgment, can be particularly beneficial in fostering the depth and authenticity of human connection required by health care professionals.

METHOD

This pilot study used a pretest-posttest design without a control group. Baccalaureate nursing students were recruited to participate in an 8-week MBSR course. The study was intended to identify whether the intervention would:

- Decrease stress, as measured by the Derogatis Stress Profile.
- Improve empathy levels, as assessed by the Interpersonal Reactivity Index.
- Correlate positive attitude and behavior change with regular meditation, as reported on posttest questionnaires.

It was assumed that participants who committed more time to mindfulness would experience greater benefits.

Sample

A convenience sample of 23 nursing students volunteered for the course; 18 students completed the course. Of these 18 students, 16 completed both the pretest and posttest. Participants agreed to attend all eight, 2-hour sessions, and to follow 30-minute guided meditation audiotapes at home 5 days per week.

Procedure

The 8-week, researcher-led mindfulness course followed MBSR guidelines (Kabat-Zinn 1990; Santorelli & Kabat-Zinn, 2002). In weekly sessions, mindfulness was taught sequentially so participants could discover relationships between mindful practice and their ability to cope more effectively with stress.

Mindfulness was presented using various techniques including:

- The body scan, a progressive relaxation in which participants direct attention and observe sensations.
- Sitting meditation, involving observation of one’s breathing, sensations, emotions, sound, and thoughts.
- Hatha yoga, involving gentle physical poses integrated with breathing to develop strength, flexibility, and balance.
- Walking meditation, which involved slow and observant walking.

The course also explored the use of mindfulness in daily life, the psychological and physiological effects of stress, and journal keeping. Descriptive statistics characterized the sample. Differences between mean scores on the instruments were analyzed using paired t tests to compare participants’ pretests and posttests.
Instruments

Demographic Questionnaire. A demographic questionnaire was used to gather participants' age, gender, nursing semester, and ethnicity.

Interpersonal Reactivity Index. The Interpersonal Reactivity Index (IRI) (Davis, 1980) is a 28-item, self-report inventory measuring four dimensions of empathy on a 5-point Likert scale. The four IRI dimensions and Cronbach's alpha coefficients in women are:

- Perspective Taking Scale (alpha = .75).
- Fantasy Scale (alpha = .79).
- Empathic Concern Scale (alpha = .73).
- Personal Distress Scale (alpha = .75).

The four scales represent distinctions between affective and cognitive domains, personal distress, and concern for others. The scales are not scored cumulatively. Perspective taking refers to participants' ability to adopt others' perspectives in real-life situations. Empathic concern measures participants' ability to feel warmth, compassion, and concern for others who are undergoing negative experiences. Personal distress indicates to what extent participants experience feelings of fear, anxiety, and discomfort when witnessing others' negative experiences. The Fantasy Scale measures participants' tendency toward identification with fictional characters (Davis, 1980).

Derogatis Stress Profile. Stress was measured with the Derogatis Stress Profile (DSP) (Derogatis, 1987), a 77-item, self-report inventory that uses a Likert scale. The instrument is derived from interactional stress theory and measures:

- Environmental events (i.e., vocational, domestic, and health).
- Personality characteristics (i.e., time pressure, driven behavior, attitude, relaxation potential, and role definition).
- Emotional responses (e.g., hostility, anxiety, depression).

The total stress score has a Cronbach's alpha coefficient of .90 (Derogatis, 1987).

Homework Questionnaire. Participants completed a posttest homework questionnaire, modified from the University of Massachusetts Medical School Stress Reduction Program (Santorelli & Kabat-Zinn, 2002). Questions required analog, Likert, and narrative responses. Using an 11-point Likert scale, participants were asked to rate the benefits of mindfulness techniques on a scale from 0 (the practice was of no use) to 10 (the practice was very useful). Another section asked students to quantify the amount of change they experienced in various attitudes and behavior as a result of the course. Journaling assignments were also interspersed throughout the course, and a record for tracking homework was provided.

RESULTS

All participants were women who had no previous mindfulness experience. They ranged in age from 20 to 39, with an average age of 25. Group ethnicity was composed of 26% Caucasian, 13% Filipino, 13% other Asian, 13% Hispanic, 13% African American, and 4% American Indian participants. Seventy-four percent of the participants were enrolled in their first semester of the nursing program. A significant difference was found to exist between pretest and posttest means at the p > .05 level of significance in the DSP Anxiety Scale. Strong favorable trends were demonstrated in time pressure score, attitude posture score, and total stress.

Participants' pretest mean scores in all four IRI dimensions were 40% to 50% higher than the means of female college students of the same age in two other studies (Atkins & Steitz, 2000; Davis, 1980). Fantasy Scale and Personal Distress Scale mean scores on the IRI strongly trended downward, but the levels were not statistically significant. Mean scores on the Perspective Taking and Empathic Concern Scales remained high and even trended upward. Higher initial scores on the Empathic Concern Scale may be due to a selection process whereby nursing students choose a profession that requires higher-than-average empathy levels.

Analysis of descriptive data revealed that 75% of participants found breath awareness beneficial in coping with stressful situations. Meditation homework compliance varied, with 12.5% of the participants practicing meditation daily and another 44% practicing three or more times per week. Seventy-five percent of the participants practiced yoga postures at home.

As a result of participation, students expressed high levels of attitude and behavioral changes. Sixty-three percent of participants reported changes in their relationship to thoughts and feelings and their reactions to them, 75% reported greater self-confidence, 88% indicated they were more hopeful, and 69% reported they were more assertive and able to express their needs and feelings directly as a result of the training. In addition, 14 of the 16 participants indicated that they were correcting negative health habits and behaviors, that they knew how to take better care of themselves, and that they were actually doing it. Thirteen participants reported feeling an increased ability to handle stressful situations, and 14 participants reported getting something of lasting value from the course.

Using the chi square, moderate positive relationships were found between the variable of regular home meditation and several of the self-reported improvements in attitudes and behavior:

- Believing that I can improve my own health (χ² = .587).
- Awareness of what is stressful in my life (χ² = .497).
- Awareness of stressful situations when they are happening (χ² = .301).
- Actually taking better care of myself (χ² = .3010).
- Being hopeful (χ² = .301).

Common journal themes included feeling anxious and worried about schoolwork, particularly examinations; uncertainty of success in nursing school; and noticing dif-
difficulties with concentration. Students cited examinations, quantities of material to be studied, clinical experiences, jobs, and driving as major stressors. Also mentioned as stressful were parental expectations, roommates, and losing face through academic performance. Students reported friends, boyfriends, and family members as major supports. They wrote about not having time to meditate, of the challenge of putting aside their worries, and of noticing their repetitive cognitions and physiologically based fear reactions.

Journal entries and the narrative portions of the questionnaire reflected perceived course benefits. One participant wrote:

Usually my heart beats fast before an exam. This time, I meditated for 20 minutes, and I felt relaxed. It honestly helped me stay focused on my test. I really did well on the exam!

Other excerpts expressed the challenges and rewards of learning breath awareness. One participant wrote:

After meditating, I feel more relaxed. Before, my mind wandered very fast, but now when my mind starts to wander, it seems like I have another mind saying that I need to go back to my breathing...

Another participant wrote, “I found out there are thousands of moments within each day to let go of the hustle and bustle of life and focus on myself in each moment.” A participant with back pain wrote, “My mind was wandering less, and every inhale felt like my spine was relaxing.”

One participant wrote about a potential confrontation:

My heart started beating really fast and I noticed I had butterflies in my stomach. I didn’t feel stuck at all because I was just going to deal with whatever he was going to say...

The student continued to write that when she greeted this person in this way, she was surprised to find that there was no confrontation and the person was polite. Later she wrote:

I didn’t block or shut off my feelings; I actually acknowledged and dealt with them. I noticed that I could hear my heart beating, so I concentrated on how I was feeling. I started breathing slow and deep and closed my eyes. I was thinking how it was OK to have these feelings. I listened to my heart beat and listened to it slow down and become faint, while focusing on my breath. When I am stressed, I pause and I try to focus on my feelings and why I am having them, then proceed to relax myself.

Participants were asked to write about lifestyle adjustments they made, personal benefits, and changes in their reactions to thoughts and feelings as a result of the course. Most expressed that, as a result of the course, they:

- Valued and sought personal time for themselves.
- Experienced increased awareness and acceptance of thoughts and feelings.
- Returned to their breathing at stressful moments, as a successful coping strategy.
- Felt more patient.
- Had a greater appreciation for small aspects of daily life, including sensory awareness.

**DISCUSSION**

The results indicate that participants in this study benefited in various ways. Participants who meditated more often experienced greater benefits. One of the unique aspects of this study was that the intervention emphasized unconditional acceptance of oneself. I wondered if practicing skills geared toward self-acceptance and self-awareness (including the allowance and awareness of all feelings, sensations, and thoughts, and the suggestion that staying in the moment benefits one’s life) would also foster awareness of others’ feelings. This idea, informed by the teachings of Buddhism and other faith traditions, recommends meditation as important for the development of both self-knowledge and compassion, making little distinction between compassion for self and for others. Within this context, a meditation intervention designed to decrease personal distress and increase awareness was viewed as suitable for fostering empathy.

The curricula included multicultural poetry involving themes such as the universality of the human condition, paradox, and the possibilities of personal growth and perspective change. Students were eager for the poetry and the yoga. Scores on the Perspective Taking and Empathic Concern Scales of the IRI did not significantly increase as a result of the course. This may be related to unusually high empathy scores before the intervention. On the other hand, addressing empathy indirectly (via mindfulness and self-care) may be less effective than more direct interventions. Therefore, I recommend adding an “empathy...
toward others’ component through specific meditations, poetry reading, and group discussion that explore the nurse-client relationship. Future mindfulness courses could easily include empathy toward others by linking self-care with caring for others as the next logical step.

Regarding empathy, one of the interesting results of this study was participants’ lowered personal distress, coupled with diminished fantasy levels. Change in these two self-focused empathy scales may allow nurses to act on the empathic response they feel, rather than become paralyzed by their own reactions. By decreasing the tendency for fantasy and personal distress, meditation may mediate prosocial and altruistic behavior. Since IRI scales are independent, each dimension may have profound effects on behavior and the expression of empathy. Atkins and Steitz (2000) found a positive relationship between fantasy and personal distress dimensions, and Davis (1980) linked decreased personal distress with perspective taking and empathic concern. Future research could explore the relationships between dimensions of empathic responsiveness and stress.

A significant decrease in mean anxiety scores from pretest to posttest is consistent with other MBSR research (Miller, Fletcher, & Kabat-Zinn, 1995). Anxiety, including worry, nervousness, and cognitive foreboding, makes critical thinking and learning difficult. Decreases in anxiety, coupled with favorable trends in scores on the Personal Distress and Fantasy Scale of the IRI, may indicate change in emotional contagion and supports Omdahl and O’Donnell’s (1999) work, differentiating emotional contagion from empathic concern.

A strong, favorable trend in Time Pressure Scale scores, which measures relationship to task accomplishment, was noted. Errors, poor patient care, poor work habits, anxiety, health problems, decreased job satisfaction, and burnout have been associated with time pressure. A strong favorable trend was also noted in stress subscale scores called Attitude Posture, defined as a trait associated with an achievement ethic. Of the two poles of attitude posture, one reflects traits that focus on continued achievement, while the other reflects a tendency toward satisfaction and enjoyment of what one already has accomplished. Focusing on achievement is a source of stress, particularly when coupled with other stress-enhancing personality traits. Overemphasis on achievement may lead to low self-esteem and dissatisfaction (Derogatis, 1987). Lower posttest scores on the Time Pressure and Attitude Postures Scales suggest participants were learning to notice the present moment, without striving to attain or modify anything. Changing one’s relationship to time pressure and achievement may have important implications. These results suggest further research to correlate these constructs with empathy.

LIMITATIONS

The results of this study are limited by a small, self-selected sample, the absence of a control group, a single site location, a 22% course attrition rate, and another 8% without pretest-posttest matches. Students who volunteered may have perceived themselves as struggling with stress or were naturally attracted to meditation and yoga and, therefore, were more motivated than individuals in a randomized sample. Other limitations include that the intervention content emphasized self-care but did not directly encourage empathy for others.

Despite these limitations, the findings indicate that student nurse anxiety was diminished through mindfulness practice. Although empathy data did not show statistically significant change, trends were positive in the direction expected in the personal distress and fantasy dimensions. These results provide strong support for a more comprehensive study that would include a randomized control group and a larger sample. Recommendations are to tailor MBSR for nursing students so the course integrates the cognitive component of empathy with poetry, discussion, and specific meditations on compassion, and that the course provide a greater yoga intervention—a frequent student request.

SUGGESTIONS FOR FUTURE RESEARCH

Future research ideas include integrating mindfulness in nursing curricula and following nursing students throughout their course of studies and beyond. This could yield valuable longitudinal data about the role of mindfulness in stress resilience, examination-taking habits, and job retention. Inquiry could examine fostering healthy nurse-patient boundaries, distinguishing between emotional contagion and empathic concern, and the relationship between stress and empathy. In addition, future research could yield data toward the development of new empathy measures.

CONCLUSION

The findings of this study suggest that being mindful may reduce anxiety and decrease tendencies to take on others’ negative emotions. By attending to oneself in the...
present moment, and then expanding one’s awareness to include the environment and other people, one paradoxically becomes less focused on oneself. When students use mindfulness to quiet their minds, bodies, and emotions, and observe what is present, they may be better able to reach out to distressed clients and respond with concern, without suffering emotional contagion. Nursing students may have a chance to respond in empathic ways when personal distress, anxiety, and a sense of time pressure are decreased.

REFERENCES


Astin, J. (1997). Stress reduction through mindfulness medita-


sional stress management into a baccalaureate nursing cur-


Jordan, J.V. (2000). The role of mutual empathy in relational/cul-


tion-based stress reduction intervention on rates of skin clearing in patients with moderate to severe psoriasis undergoing phototherapy (UVB) and photochemotherapy (PUVA). *Psychosomatic Medicine, 60*, 625-632.

Kendrick, P. (2000). Comparing the effects of stress and relation-

Kornfield, J. (1993). *A path with heart: A guide through the per-


Marcus, E.R. (1999). Empathy, humanism, and the professional-
ization process of medical education. *Academic Medicine, 74*, 1211-1215.


Ondahl, B.L., & O’Donnell, C. (1999). Emotional contagion, empathic concern and communicative responsiveness as vari-

Oz, F. (2001). Impact of training on empathic communication
skills and tendency of nurses. Clinical Excellence for Nurse Practitioners, 5, 44-51.