Article

Pilot Study

Use of Mindfulness, Self-Compassion, and Yoga Practices With Low-Income and/or Uninsured Patients With Depression and/or Anxiety

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Nasrin Falsafi, PhD, RN, PMHCNS-BC, AHN-BC
Louisa Leopard, BA
University of North Carolina, Wilmington

Purpose: This pilot study was conducted to determine the effectiveness of mindfulness practices, including self-compassion and yoga, on depression and/or anxiety in uninsured and/or low-income patients. **Design:** The design was repeated measures with one group. **Method:** Patients received 8 weeks of mindfulness training including self-compassion and yoga. Depression and anxiety symptoms, self-compassion, and psychological well-being were measured four times. **Findings:** Interventions were effective in helping uninsured and low-income patients reduce depression and/or anxiety symptoms. **Conclusion:** This study may have implications for a cost-effective treatment for these disorders. The findings from this study can provide useful information to health care providers.

Keywords: *mindfulness practices; self-compassion; yoga; depression; anxiety; low-income/uninsured; adults*

Background

Anxiety disorders and depression are two of the most common mental disorders in the United States (Townsend, 2012). According to the Anxiety and Depression Association of America (ADAA; 2013), anxiety disorders affect 18% of the U.S. population (40 million adults age 18 and older). The cost of anxiety disorders in the United States is about $42 billion per year (ADAA, 2013). Quite often, individuals with an anxiety disorder also suffer from depression, and more than half of those suffering with depression are also diagnosed with anxiety disorders (Lamers et al., 2011). According to the Centers for Disease Control and Prevention (2010), an estimated 1 in 10 U.S. adults report depression. The prevalence of both disorders are more common in women than in men (Townsend, 2012).

Traditionally, depression and anxiety have been treated with psychotherapy and antidepressant and/or antianxiety medications. However, while such medications have a place in treating symptoms of anxiety and depression, adding other approaches can be beneficial. Mindfulness-based meditations may be effective in coping with symptoms of anxiety and depression (Ando et al., 2009). Jha, Stanley, Kiyonaga, Wong, and Gelfand (2010) examined the protective effects of mindfulness on affective experience and suggest that "sufficient mindfulness training practice may protect against functional impairments associated with high-stress contexts" (p. 54). Studies using mindfulness-based interventions have demonstrated positive results in as little as 8 weeks (Carmody & Baer, 2008; Neff & Germer, 2013). The current study also uses 8 weeks of mindfulness training to test if in fact 8 weeks is adequate to notice any changes.

Authors' Note: The study was supported by a Richard Corbett Grant through the School of Nursing, University of North Carolina at Wilmington. Please address correspondence to Nasrin Falsafi, PhD, RN, PMHCNS-BC, AHN-BC, School of Nursing, College of Health and Human Services, University of North Carolina, McNeil Hall, 601 S. College Road, Wilmington, NC 28403; e-mail: falsafin@uncw.edu.

Mindfulness and its salutary effects have been the focus of many studies over the past few decades (Carmody, Baer, Lykins, & Olendzki, 2009; Farb, Anderson, & Segal, 2012; Keng, Smoski, & Robins, 2011; Shapiro, 2009). According to a model developed by Shapiro (2009), mindfulness practice leads to a fundamental change related to experience (reperceiving). Shapiro (2009) asserts that "mindfulness intervention increases levels of mindfulness, reperceiving, self-regulation, value clarification, cognitive and behavioral flexibility, and exposure" (p. 558).

Awareness of affective state and nonjudgmental observation of emotions, even when they are unpleasant, reduces emotional reactivity. Affect tolerance and emotion regulation are two skills that can be improved with mindfulness (Germer, 2009; Siegel, 2010). Such abilities are essential in coping with symptom of depression and/or anxiety.

Cost of Health Care and Low-Income Population

It is important to find more cost-effective treatment interventions and adjunctive therapies for patients suffering with anxiety and/or depression particularly in uninsured and low-income patients. Mindfulness practices including self-compassion (Neff, 2011) and yoga (Emerson & Hopper, 2011; Nurries-Stearns & Nurries-Stearns, 2010; Van der Kolk, 2009) help calm the mind and body and regulate emotions (Germer, 2009). The cost of learning mindfulness practices is much less than the cost of antianxiety or antidepressant medications and/or therapy. It is easy to learn these practices, and after individuals learn the basics of the modalities, they can perform them on their own. Also, these practices do not have the side effects of antianxiety and antidepressant medications (Townsend, 2012). Adding these holistic modalities to current methods of treating anxiety and depression has the potential to decrease the use of medications and/or psychotherapy. However, the use of such modalities has not been fully examined in these populations.

Purpose

The aim of this study was to explore the effectiveness of mindfulness practices in coping with anxiety and/or depression in uninsured and low-income patients.

Mindfulness, Self-Compassion, and Yoga

Mindfulness is a state of being aware in the present moment. Kabat-Zinn (2011) and Kornfield (2008), two of the most revered teachers of mindfulness practices, assert that paying attention on purpose and in the present moment with acceptance (without judgment) are the basic components of mindfulness practice. Kabat-Zinn indicates that being patient, trusting the process, having the mind of a beginner, and letting go are qualities that are essential to be successful in practicing mindfulness. There are various types of mindfulness practices including formal meditation, breath awareness, body awareness, walking meditation, mindful eating, meditation in action (yoga), and mindful living. Mindfulness has many benefits including slowing the pace of thoughts, enjoying the richness of the moment, seeing and accepting things as they are, and becoming more compassionate toward self and others (Kornfield, 2008; Siegel, 2010).

Self-compassion involves extending compassion to one's self in instances of perceived inadequacy, failure, or general suffering (Neff, 2011). Paths to self-compassion include waiting on ourselves, letting go of critical self-talks, directing loving kindness toward our suffering and ourselves, and practicing gratitude and forgiveness. Recent studies on self-compassion suggest that self-compassionate individuals experience greater psychological health than those who lack self-compassion (Fredrickson, Cohn, Coffey, Pek, & Finkel, 2008; Neff & Germer, 2013). Individuals suffering from depression and/or anxiety are more critical of themselves than those who are not. Learning how to be more compassionate, understanding, and gentle toward self during the times of hardship or failure helps the person cope better with such situations.

Yoga is considered a mindfulness practice that uses breath to connect the mind and body (Shelov, Suchday, & Friedberg, 2009). A typical yoga class includes a short meditation, series of stretches to prepare the body, poses and postures, and relaxation. The most widely practiced yoga tradition in the West is Hatha yoga, which is physical yoga. Yoga has been used successfully with veterans suffering from posttraumatic stress disorder whose main symptoms include anxiety and depression (Libby, Reddy, Pilver, & Desai, 2012; Manafort & Libby, 2013). A combination of yoga and meditation was promising in

helping patients with anxiety and depression (Kozasa et al., 2008). Studies of the effects of yoga on quality of life (Chandwani et al., 2014), depression (Chen et al., 2010), anxiety (Nurries-Stearns & Nurries-Stearns, 2010), back pain (Groessl, Weingart, Aschbacher, Pada, & Baxi, 2008; Saper et al., 2009), and sleep quality (Chen et al., 2009) have also had promising results. Since depression and anxiety also exhibit physical symptoms, it is critical to include a modality such as yoga, which uses both mind and body to cope with the symptoms of these disorders.

Method

Design, Setting, and Sample

A repeated-measures design with one group was used for this study. Patients received 8 weeks (1.5 hours/week) of mindfulness, self-compassion, and yoga training and completed four short questionnaires on anxiety and depressive symptoms, psychological well-being, and self-compassion. The questionnaires were completed before training (pre), at the end of the fourth session (mid), at the end of the eighth/last training session (post), and 4 weeks after the completion of the training (follow-up).

A convenience sample of 20 patients of both genders between the ages of 18 and 65 years was recruited from two free clinics in southeastern North Carolina. The criteria for use of the free clinics included lack of insurance or government health benefits (Veterans Affairs, Medicaid, or Medicare), and income below 150% of the Federal Poverty Level. All clinic patients with a diagnosis of depression and/or anxiety were eligible for the study except those with a diagnosis of thought disorder, bipolar disorder, or borderline personality disorder; those engaged in active substance abuse/dependence; those practicing yoga, mindfulness, or self-compassion meditation; or those who had attended four classes in such practices within the past year. Also, those with severe physical disabilities that prevented them from doing easy yoga poses, the homeless, those pending legal dispositions, and those unable to hear, read, visualize, and/or comprehend the assessment questions were excluded. During the initial interview, prospective participants were asked about their general state of well-being, and whether they were suffering from any physical problems. The patients were also required to obtain a medical clearance document from their health care providers to enroll in the study.

The nurse practitioners and the psychotherapist at the clinics invited patients who met the criteria to contact the investigator. The investigator then arranged a meeting with prospective participants at the clinic and ensured that interested individuals met the inclusion/exclusion criteria. All participants signed an informed consent form. A research assistant, a psychology graduate student, attended all training sessions and ensured that all data collection tools were completed adequately by the study participants. The research assistant completed the Protecting Human Research Participants training module. The institutional review board of the author's institution approved the study.

During the training program patients were asked to practice the learned modalities outside of class for 45 minutes each day. They were instructed to practice 30 minutes of yoga and 15 minutes of any type of mindfulness practice they learned in the training sessions and felt comfortable doing. The importance of regular practice was explained to participants, and they were asked to keep track of their home practice in a journal given to them. At the beginning of each training session, the group leader would ask the participants about their home practice, and if they had any questions or difficulties, and inquire about how long they practiced. Participants received all necessary materials that could assist them to practice at home: reading materials, an MP3 player with various tracks on mindfulness and self-compassion meditations, soft soothing music, and MP3s and MP4s of easy yoga practice (regular and chair yoga), a yoga mat, a yoga strap, and a journal book to document their home practice. Practice DVDs and verbal instructions of both regular and chair yoga conducted by the instructor were also given to the participants for practice at home. This ensured that participants were not using advanced instruction in poses and/or postures that could have hurt them. The 8-week program was taught in two groups of 10 participants each. The same group leader conducted the sessions for both groups to ensure that all participants received identical training. The participants were given a $10 gift card for their time at the end of each session. The gift cards also helped with money for gasoline and/or public transportation. Some of the participants would have not been able to join the study without this small financial support.

Mindfulness practices were introduced to the participants, starting with simple ones and then progressing to the more complex. For example, during the first session, meditation on breath was introduced and practiced. Meditations on senses, such as sound and taste, and meditation on walking were introduced in subsequent sessions. One of the components of self-compassion is mindfulness, so Loving Kindness Meditation, gratitude, and forgiveness meditations were offered later in the training. A variety of mindfulness practices were introduced to the participants so that they could explore what worked for them best. For example, individuals who are very anxious may have difficulty practicing sitting meditation, so they may find it easier to do a walking meditation. Each training session included a review of the materials from the previous week, a 15-minute mindfulness practice, and a 45-minute easy yoga session. The participants were asked to practice what they learned in the training at home for 45 minutes each day.

Variables and Their Measurements

Using paper and pencil, the participants completed four short questionnaires about symptoms of anxiety and depression, psychological well-being, and self-compassion. The questionnaires were completed four times: pre, mid, post, and follow-up. The participants were asked to complete the Beck Depression Inventory, the Hamilton Anxiety Scale, the Self-compassion Scale, and the Perceived Wellness Survey. The participants completed a demographic data form after they signed the consent forms.

The Beck Depression Inventory is a 21-question multiple-choice self-report inventory that measures the intensity, severity, and depth of depressive symptoms. The questions are designed to assess specific symptoms common among individuals with depression. The scale has been widely used and has been found to be internally consistent and reliable (Beck, Steer, & Brown, 1996).

The Hamilton Anxiety Scale is a 14-item questionnaire measuring the severity of anxiety symptoms. It is based on a 5-point scale for each of the 14 items. Seven items address psychic anxiety and the rest focus on somatic symptoms. The scale has been widely used and has been found to be internally consistent and reliable (Hamilton, 1959).

The Self-Compassion Scale (Neff, 2003) is a 26-item assessment of six different aspects of self-compassion (self-kindness, self-judgment, common humanity, isolation, mindfulness, and overidentification). The internal consistency for this measure is high (Cronbach's $\alpha = .92$). The short version of this scale, which is a 12-item tool, was used in this study. The internal consistency for the short form is adequate (Cronbach's $\alpha = .86$), and a near-perfect correlation with the long version of Self-Compassion Scale ($r \geq .97$ all samples) is reported (Raes, Pommier, Neff, &Van Gucht, 2011).

The Perceived Wellness Survey (Adams, Bezner, Garner, & Woodruff, 1998) is a 36-item 6-point Likert-type scale assessment of six dimensions of wellness (physical, social, emotional, intellectual, psychological, and spiritual). Internal consistency for this measure was high (Cronbach's $\alpha = .88$).

A demographic data form developed by the investigator asked for basic information such as name, age, marital status, diagnosis, and contact information. The estimated time to complete all study instruments was about 35 to 45 minutes. To ensure that participants had adequate time to complete the study scales, participants were given 1 hour.

Findings

Two males and 18 females consented to participate in the training. Thirteen completed the training, and nine completed the follow-up. All participants who completed the training program were female, and all but one was Caucasian. The mean age was 46.9 years (age range was 29-59 years). One participant had a cosmetology certificate, six participants completed between one and three semesters of college, three had associate degrees, two had baccalaureate degrees, and one did not provide information on her education.

Two participants were not able to start the training program due to schedule conflicts. One left the program due to religious beliefs, stating that mindfulness teachings interfered with religious practice; two moved from the area; one decided to go back to school; and one lost her house to foreclosure and had to move away. The responses of participants who did not complete pre, mid, and post data collections were excluded from the analysis. Three participants missed one session during the course of training for various reasons, but these sessions did not include

data collection. The responses of these participants were included in the analysis.

Out of 13 participants who completed the training program, 11 suffered from depression and anxiety, 1 person had only depression, and 1 had only anxiety. The majority of participants (90.9%) were on psychiatric medication. There were minor changes in medication during the course of the study. For example, one person's antianxiety medication was discontinued and replaced with an antidepressant, but she did not start the new medication while in the study. The dose of another participant's antidepressant was adjusted. One of the free clinics did not have mental health staff. The second clinic had a volunteer psychologist who offered 30-minute sessions one evening per month. Volunteer psychiatrists provided services two evenings per month. Participants' reports and reviews of their charts indicated that during the course of the study, one participant received one 30-minute therapy session, and another participant received two 30-minute therapy sessions. A third participant received brief therapy sessions from an outside clinic; however, it is not clear how often she attended therapy sessions. Most participants did not complete the journaling of their home practice, as requested. Therefore, at the completion of the training program, participants were asked to complete a detailed questionnaire regarding the type, extent, and frequency of their home practice. Nine participants reported that they practiced at home (the average time was 4.7 times per week for 20-44 minutes per session). One participant stated that she practiced every day.

Descriptive statistics were used to assess the demographics of participants, and ANOVAs (analyses of variance) were used to compare mean scores on pre, post, mid, and follow-up measures. There were statistically significant improvements (decrease) in scores of depressive symptoms from pre to post and from pre to follow-up ($p < .05$), as demonstrated in Figure 1. There were also statistically significant improvements (decrease) in scores of anxiety symptoms from pre to post ($p < .05$), and from pre to follow-up ($p < .10$), as demonstrated in Figure 2. There were statistically significant improvements (increase) in scores of self-compassion and general wellness from pre to follow up ($p < .05$), as demonstrated in Figures 3 and 4. Figures 1 to 4 demonstrate improvements through a decrease in depressive and anxiety symptoms, and an increase in self-compassion and perceived well-being. In addition

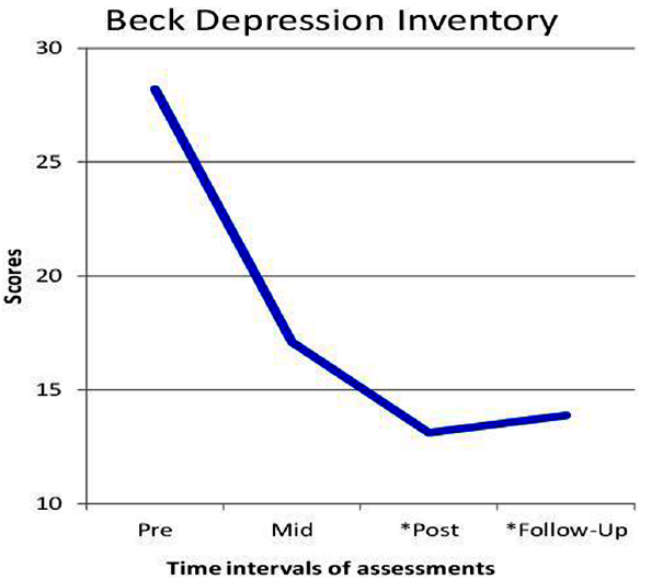

Figure 1. Improvement in Depressive Symptoms
*$p < .05$ from pre to designated conditions.

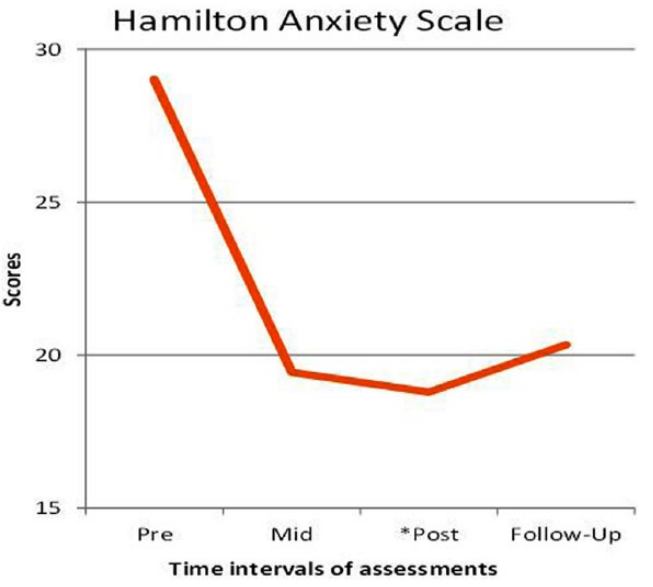

Figure 2. Improvement in Anxiety Symptoms
*$p < .05$ from pre to designated conditions.

to positive changes in the four main variables, the participants also improved physically. They felt more flexible, and they were able to do poses and postures that they were unable to perform initially. Most of the participants also indicated that they had become less emotionally reactive to events in their lives. Such comments are consistent with the model suggested by Shapiro (2009).

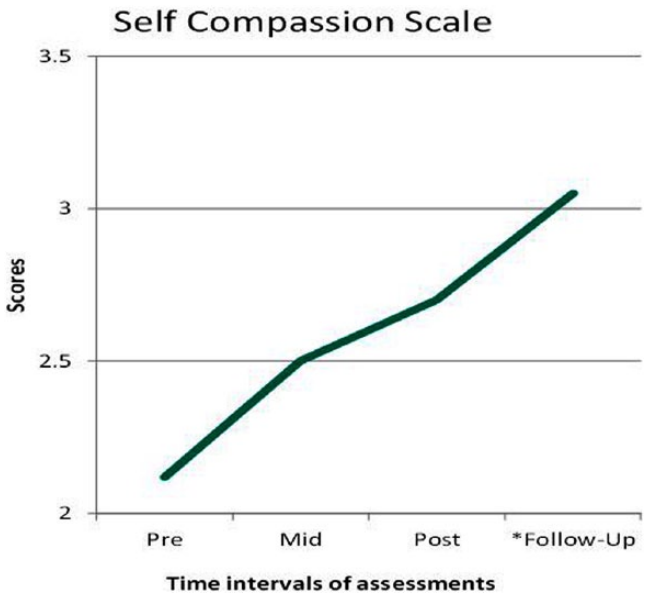

Figure 3. Improvement in Self-Compassion
*$p < .05$ from pre to designated conditions.

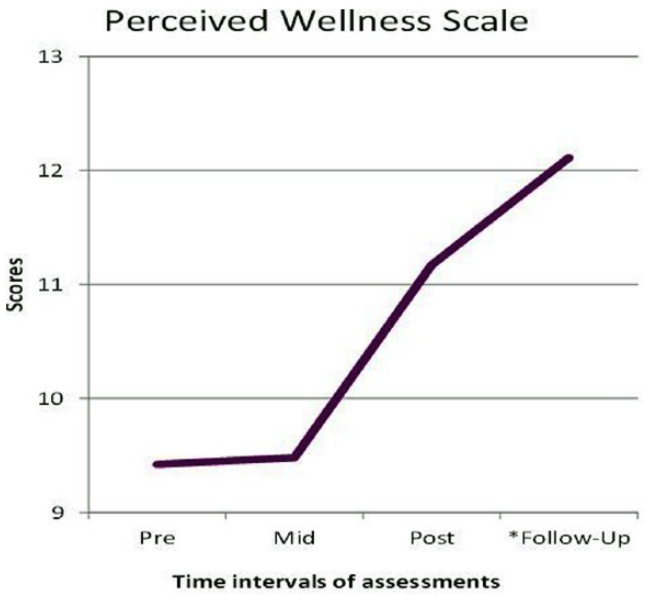

Figure 4. Improvement in Perceived Wellness
*$p < .05$ from pre to designated conditions.

Discussion

This study shows that mindfulness practices including yoga and self-compassion meditations might be beneficial to low-income and uninsured patients with depression and anxiety. This is in agreement with two studies (Ando et al., 2009; Kozasa et al., 2008) that indicated improvement in depression and anxiety when practicing mindfulness. The study done by Ando used mindfulness-based meditation with cancer patients, and the second study (Kozasa et al., 2008) used yoga for depression and anxiety. As demonstrated in prior research (Carmody & Baer, 2008; Neff & Germer, 2013), positive results in this study were also noted in as little as 8 weeks.

The current study was conducted during a 3-month period in the fall of 2012. The last weeks of the study approached the holidays (Thanksgiving and Christmas). Holidays are a difficult time for patients with mental health issues and may have been particularly stressful for these participants, who had limited means. This may explain the rise of participants' anxiety at the follow-up measurement. Despite participants' expressed excitement at the eighth session about attending the training one last time (follow-up session), holidays also affected attendance in the follow-up session.

All interventions that were used in the study have meditative qualities. Participants were particularly eager about practicing yoga. Every session included 45 minutes of easy yoga practice. While the study did not isolate the effects of various mindfulness modalities that were used in the study, informal feedback from patients indicated that yoga had positive effects in promoting their general well-being. They also stated they felt better physically.

Yoga programs come with a built-in social support component that is beneficial to participants. While the support can be one of the positive aspects of attending a yoga class, when it comes to rigorous research, it is an issue that needs to be addressed and controlled. In future studies it is important to isolate the effect of social support from the main interventions.

This study was open to both genders; however, most of the volunteers for the study were women (2 males and 18 females). All participants who completed the program were female.

This could be partly related to the fact the prevalence of depression and anxiety is higher in women than it is in men by almost two to one in the United States (Townsend, 2012). Also, traditionally males may shy away from programs that include yoga practice, thinking that such programs are mostly for women. Although yoga and meditation are not considered religions and the training program offered a

generic yoga program and meditation instructions, some participants had concerns about possible religious implications. One male participant who left the study indicated that yoga and meditation conflicted with his religious beliefs.

All participants were Caucasian, except one who had an Asian background. This was incongruous with racial proportions at the clinics; African Americans comprised 20% of one clinic population, and 12% of the other. This may be because African Americans do not trust medical research due to history of exploitation (Fisher & Kalbaugh, 2011). In a recent poll conducted by Research America (2013), more than half of African Americans (61%) indicated that lack of trust is a reason that they do not participate in clinical trials, and 40% believed people are enrolled in clinical research without being told.

Low-income and uninsured individuals face a serious gap in receiving specialized care (Hamil, 2014) because few clinics for low-income patients have specialists on staff. This gap is more serious for individuals who need psychiatric care due to a nationwide shortage of psychiatrists (Smydo, 2014). This held true for the participants of this study. Despite the fact that they had access to primary health care services, the free clinics lacked or offered limited mental health care. These gaps in care are a major problem for low-income and uninsured individuals.

Strengths and Limitations

The study has multiple strengths. The same clinician conducted the training in both groups, which ensured that participants in both groups received identical training. Also, both groups were assembled in the same time period. The clinician was a psychiatric clinical nurse specialist and a certified holistic nurse, as well as a certified yoga teacher. The instructor also had training in trauma-sensitive yoga. Providing a psychologically safe place is important, and using trauma-sensitive language when instructing participants is essential (Emerson & Hopper, 2011).

There were several limitations in the study. The sample size was small, and the population was mainly low-income and uninsured females, which makes generalization of the study findings difficult. Data were obtained through self-report and are subject to recall bias. Journaling was not an adequate method of measuring home practice, so it is recommended that the instructors ask participants to complete a short form on their home practice at each session. Also a short exit interview would have provided more feedback about the effectiveness of the training. While the free training and small monetary reward could be considered an additional incentive for participation in the study, some participants would not have been able to join the study without this financial support. Most participants needed the $10 gift card to pay for gasoline and/or public transportation to attend the training. Also, the participants would have not been able to attend the training if they had to pay a tuition fee.

Conclusions and Implications

Mindfulness, self-compassion, and yoga practices can be effective in helping uninsured and low-income patients cope with anxiety and/or depression. Practicing these modalities on a regular basis is important. Individuals who practice mindfulness modalities on a regular basis tend to thoughtfully respond to situations rather than simply reacting to them. This study has implications for a cost-effective treatment for these disorders. These findings can provide useful information to insurance companies and also have important implications for clinicians in various practice settings, particularly in inpatient and outpatient mental health centers. Psychiatric settings already use group treatment modalities; therefore, it would be easy to add group mindfulness practices in daily activities of patients. Since these modalities have not been studied in this population, the limited information obtained from this study can still make a valuable contribution to this area of research.

Relevance to Nursing

The findings from this study have important implications for nurses in various clinical settings. While the participants in this study were low-income, uninsured patients with depression and anxiety, one does not have to be financially deprived to have depression and/or anxiety. Nurses encounter patients with depression and/or anxiety in addition to various medical conditions in their practice; medical illness is enough cause for some individuals to become anxious. Chronic and terminal illnesses sometimes lead to depression, so mindfulness practices can be beneficial to such patients. Holistic

nurse practitioners can collaborate with psychiatric nurses to provide patients with mindfulness interventions.

Recommendations for Future Research

The study can be improved with a randomized control group, more participants, and a more diverse sample. Controlling the impact of group interaction (social support) and isolating the most effective intervention would further improve this study. Also, it would be important to control the impact of holiday stress by conducting the study during a nonholiday period. Despite these limitations, this study suggests that mindfulness, self-compassion, and yoga practices may be effective in helping uninsured and low-income patients cope with anxiety and/or depression. Further research is needed to confirm these findings and determine which interventions (mindfulness, self-compassion, or yoga) are most effective.

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Nasrin Falsafi, PhD, RN, PMHCNS-BC, AHN-BC, is Assistant Professor at the School of Nursing, College of Health and Human Services, University of North Carolina Wilmington. Her research focus is the use of holistic modalities with psychiatric patients. Her current focus is the use of mindfulness practices with college students with depression and/or anxiety.

Louisa Mae Leopard, BA, is a Psychology Masters Candidate at the University of North Carolina Wilmington. Her research focus is resilience, coping, and social support in caregivers. She can be reached at lml2797@uncw.edu.