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# The Effectiveness of Guided Imagery in Treating Compassion Fatigue and Anxiety of Mental Health Workers

Kimberly A. Kiley, Ashwini R. Sehgal, Susan Neth, Jacqueline Dolata, Earl Pike, James C. Spilsbury, and Jeffrey M. Albert

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Mental health professionals' exposure to clients' traumatic experiences can result in elevated stress, including compassion fatigue and burnout. Experiencing symptoms of these types of stress can hinder workers' ability to provide effective services. If a tool can reduce these symptoms, there is potential benefit for workers as well as those receiving their services. The purpose of this study was to examine the effects of prerecorded guided imagery (GI) on compassion fatigue and state anxiety. A total of 69 employees of a mental health nonprofit organization participated in this two-arm randomized controlled trial. Participants completed the Professional Quality of Life Scale, the Perceived Stress Scale, and question 6 from the Pittsburgh Sleep Quality Index at baseline and follow-up, and completed State Trait Anxiety Inventory short form before and after each activity (GI or taking a break). Results revealed statistically significant differences in change scores between the control and experimental groups for state anxiety and sleep quality. The results suggest that GI may be useful for reducing stress for mental health professionals, which could have positive implications for quality of service delivery.

KEY WORDS: *compassion fatigue; guided imagery; mental health workers; self-care; sleep*

A growing body of literature suggests that exposure to clients' traumatic experiences can have negative effects on helping professionals and that such exposure may constitute an occupational hazard (Bride, 2004; Figley, 1995; McCann & Pearlman, 1990). Stress resulting from this exposure is variously labeled "compassion fatigue," "secondary traumatic stress" (STS), or "vicarious trauma." In this article, we will refer to it as "compassion fatigue."

The literature is sparse in regard to randomized controlled trial (RCT) measurement of the effectiveness of self-care interventions for compassion fatigue. Those who work with traumatized individuals or are exposed to traumatic narratives might benefit from a tool shown to reduce compassion fatigue or general stress symptoms. Consequently, there may be potential for improvement in the quality of care provided by helping professionals utilizing such a tool.

## LITERATURE REVIEW

### Compassion Fatigue

The Professional Quality of Life Scale (ProQOL) is the most widely used measure of compassion fatigue (Stamm, 2010). According to the theory

from which ProQOL is derived, helping professionals' quality of life has both positive and negative aspects. The positive aspect, compassion satisfaction, is the pleasure that one gains from helping others (Stamm, 2010). The negative aspect, *compassion fatigue*, is the "stress resulting from wanting to help a traumatized or suffering person" (Figley, 1995, p. 7). Compassion fatigue is broken into two components—burnout and STS. *Burnout* is the physical, mental, and emotional exhaustion resulting from long-term engagement in emotionally demanding conditions (Pines & Aronson, 1988), leading to difficulty coping with one's environment, especially the work environment (Maslach, 1982). Burnout is characterized by frustration, anger, and feelings of hopelessness, and symptoms usually manifest gradually (Stamm, 2010). *STS* is a harmful reaction to work-related trauma and can occur as a result of exposure to clients' accounts of traumatic experiences (Figley, 1995; Mathieu, 2011).

Until the publication of the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders (DSM-5)* (American Psychiatric Association [APA], 2013), the symptoms of STS and posttraumatic stress disorder (PTSD) had been viewed as nearly

identical, with the exception that indirect trauma exposure caused STS symptoms and direct exposure caused PTSD symptoms (Figley, 1995, 2002; Mathieu, 2011). However, they may now be viewed synonymously, because the DSM-5 addresses the possibility of developing PTSD from indirect trauma exposure. In addition to directly experiencing or witnessing a traumatic event, one can be diagnosed with PTSD if he or she experiences “repeated or extreme exposure to aversive details of the traumatic event” (APA, 2013, p. 271) and meets the other criteria to qualify for a PTSD diagnosis (having symptoms of re-experiencing, avoidance, negative thought and mood, and arousal). The indirect exposure “does not apply to exposure through electronic media, television, movies, or pictures unless this exposure is work related” (APA, 2013, p. 271).

Considerable research documents the prevalence of compassion fatigue and burnout among mental health professionals. In a survey of 460 mental health providers, 56% reported moderate to high levels of emotional exhaustion, a key component of burnout, and 50% considered quitting their jobs (Acker, 2011). In another study of 282 licensed social workers, 82% of whom had moderately to highly traumatized clients on their caseloads, 55% met at least one of the PTSD criteria (other than exposure), 20% met two of the criteria, and 15.2% met all three of the criteria for a DSM-IV diagnosis of PTSD (Bride, 2007). In a sample of community mental health workers, 17% met criteria for STS disorder, and 18% had significant subclinical levels of psychopathology (Meldrum, King, & Spooner, 2002).

The literature suggests factors that correlate with degree of severity of compassion fatigue and burnout. Higher levels of compassion fatigue correlate with having less sense of control over the workplace, more overinvolvement with clients, and higher amounts of secondary exposure to clients' traumatic memories (McKim & Smith-Adcock, 2014). Research indicates that working with clients with severe mental illness is predictive of depersonalization and emotional exhaustion, two components of burnout (Acker, 1999) and high levels of stress (Oberlander, 1990). In a sample of 213 mental health counselors, participants who reported less maladaptive coping, more positive perceptions of the workplace, and higher mindfulness attitudes also reported less burnout (Thompson,

Amatea, & Thompson, 2014). Support from supervisors and coworkers can have a buffering effect on burnout (Himle, Jayaratne, & Thyness, 1991; McFadden, Campbell, & Taylor, 2015), and usage of evidence-based practices for trauma treatment correlates with lower burnout and compassion fatigue, and higher compassion satisfaction (Craig & Sprang, 2010).

### Worksite Stress Management Initiatives

Some research documents the effectiveness of worksite stress management initiatives. Two interventions found to reduce employee stress are yoga (Chu, Koh, Moy, & Müller-Riemenschneider, 2014) and meditation courses (Cohen-Katz, Wiley, Capuano, Baker, & Shapiro, 2005; Shapiro, Astin, Bishop, & Cordova, 2005). Although such interventions may be effective, they may not be feasible for some mental health agencies to implement because of cost and time constraints.

### Guided Imagery RCTs

*Guided imagery* (GI) is a relaxation technique that relies on descriptive language to facilitate listener visualization of detailed, calming images, with the goal of achieving a relaxation response (National Center for Complementary and Integrative Health, 2016). No RCTs using only guided imagery as an employee stress management tool were located in the literature. GI RCTs often focus on medically associated pain and stress management. Several of these studies have found GI effective. In comparison to controls, GI has decreased intensity, frequency, and duration of chronic tension-type headaches (Abdoli, Rahzani, Safaie, & Sattari, 2012). In an RCT of 208 cancer patients undergoing chemotherapy, the treatment group (GI with progressive muscle relaxation) had significantly greater decreases in anxiety and depression and lower salivary cortisol levels than the control group (Charalambous, Giannakopoulou, Bozas, & Paikousis, 2015). In a study measuring GI's effects on smoking cessation, the GI group had over double the abstinence rate (26%) at 24 months postintervention, compared with that of the control group (12%) (Wynd, 2005). In a 10-week RCT, 72 women with fibromyalgia experienced significant increases in self-efficacy and significant decreases in pain, fatigue, stress, and depression in comparison with the women in the control group (Menzies, Lyon, Elswick, McCain, & Gray, 2014).

The purpose of this study was to determine if a brief and inexpensive GI intervention could be an effective self-care tool for mental health employees. This project used MP3 players containing pre-recorded GI. The GI tracks relied on pleasant imagery, with descriptions of being in peaceful settings like beaches and forests. Because imagining an activity and completing an activity can result in similar physiological responses (Morewedge, Huh, & Vosgerau, 2010; Pascual-Leone et al., 1995), pleasant imagery has the potential to elicit a physical response similar to responses elicited by actual situations of calm and peacefulness. This RCT was designed to determine whether listening to GI three times per week for four weeks while at work was superior to taking a break as usual in the same frequency and duration.

This pilot study's primary focus was to determine GI's effect on compassion fatigue. However, we also sought to determine GI's effect on other harmful stress (perceived stress, poor sleep quality, and state anxiety) because there is a lack of RCTs documenting GI on its own as a worksite stress management initiative and its effect on these types of stress. Reducing these types of stress would be beneficial to mental health workers, and therefore it was deemed important to determine under what circumstances GI may be useful.

This project may be the first RCT to determine if GI on its own can be an effective self-care tool to combat the effects of compassion fatigue and stress in a mental health agency and the first RCT to use pleasant GI alone as a worksite wellness initiative. What may be appealing about the use of pre-recorded GI for nonprofits, which typically do not have significant financial resources, is the low cost, portability, and brevity of the intervention. If listening to GI during breaks is superior to doing what workers normally do, it is reasonable to conclude that GI can serve as a useful, low-cost self-care tool for mental health workers, who often have little free time and schedules dictated by client needs.

## METHOD

### Participants

The study recruited participants from a nonprofit mental health agency that has over 26 programs working with several overlapping populations, including clients who are homeless, suffer from mental illness, experience mental health crises, and are trauma survivors. The agency employs approximately 250

full-time staff, consisting of licensed social workers and counselors, psychiatrists, case managers, support staff, and management. The study recruited participants face-to-face and by e-mail.

We opened the study to both direct and indirect service staff, as well as middle and upper management. This pilot study's primary focus was compassion fatigue, which is commonly attributed to direct service workers. However, we also sought to determine GI's effect on other harmful work-related stress—burnout, perceived stress, poor sleep quality, and state anxiety. All positions in the agency have the potential to engender these types of stress. We used a broad definition of “helping professional” to include all employees because all employees, in various roles, help clients. It has been our experience that those who do not directly help can still develop PTSD symptoms through exposure to traumatic material, whether it is through clinical supervision; upper management handling of major unusual incidents; or support staff entering data, conducting research, or reviewing records to ensure adherence to accreditation standards. Although the literature is limited, there is evidence to support the possibility of developing PTSD symptoms without directly helping trauma survivors (Kiyimba & O'Reilly, 2016; Perez, Jones, Englert, & Sachau, 2010; Regehr, Chau, Leslie, & Howe, 2002). Furthermore, the DSM-5 criteria state that PTSD can be caused by “repeated or extreme exposure to aversive details of the traumatic event” (APA, 2013) and does not specify that the exposure must result from directly helping the trauma survivor.

Participation eligibility required staff to work a minimum of three shifts per week and be willing and able to spend 10 to 15 minutes of three lunch breaks per week for the purpose of the study. Ineligibility criteria included the following: substance abuse, suicidal ideation or another serious mental health issue while not under the care of a trained mental health professional, or the use of GI at the time of recruitment. Two of this article's coauthors are employees of the mental health agency where the study took place. To avoid potential discomfort due to disclosure of sensitive information to a fellow employee, we asked prospective participants not to consent to the study if they met any of the ineligibility criteria. Before participants completed baseline measures, project staff obtained informed consent. We discussed project procedures, the

minimal risks of the study, and the compensation that participants would receive for completing the study. It was also emphasized, both during recruitment and with the informed consent process, that project participation would not affect employment status at the agency, and that no employee at the agency would have access to participants' responses that could be linked to their identities. All participants had the opportunity to ask questions and received a copy of the informed consent form with the investigator's and Case Western Reserve University's institutional review board contact information.

Sixty-nine employees enrolled in the study. Before randomization, we stratified the subjects by the median score on the Social Readjustment Rating Scale (SRRS) and the Neuroticism scale of the Big Five Inventory-10 (BFI-10). This ensured that the control and treatment groups had equal representation of people with high levels of stressful life events and people who tend to respond to stress with higher levels of anxiety and depression. Although the differences between the job characteristics of direct service, indirect service, and management positions were a concern, we determined to allow the randomization to distribute the job types between the control and GI groups.

From the subgroups created by participants falling above or below the median score, we randomized them by using a random assignment table. We assigned 35 participants to the treatment group and 34 to the control group. One participant in each group withdrew from the study. In each group, 28 completed all follow-up measures; the remaining were lost to follow-up or completed only some of the required measures.

There were no significant differences between those who did not complete measures and the rest of the sample in regard to baseline scores on the ProQOL and the Pittsburgh Sleep Quality Index (PSQI) question 6. However, the difference between those who completed the Perceived Stress Scale (PSS) and those who did not was marginally significant ( $p = .057$ ). The mean baseline PSS score of those who did not complete it was 21.92, whereas the mean baseline of those who completed was 17.93. This may suggest that those with higher levels of perceived stress felt overwhelmed and unable to complete the study's tasks.

### Equipment

MP3 players containing six GI tracks were used for the study. Table 1 lists the tracks used. Tracks of differing lengths (between six and 15 minutes) were chosen to conform to the needs of staff with various amounts of free time on any given day. All tracks were downloaded from the Internet, and for the tracks that were not free of cost, a track was purchased for each MP3 player. The GI tracks were all under 15 minutes, free or low cost, aimed at a goal of relaxation and stress relief, and included a script describing a peaceful setting (pleasant imagery).

### Design and Procedure

The study was designed as a two-arm RCT. We instructed the treatment group to listen to one GI track three times per week for four weeks and did not give participants set guidelines for determining which tracks to choose. Because the purpose of the study was to determine if staff usage of GI during a

**Table 1: Guided Imagery Tracks Used in the Study**

Track Name	Length of Track	Web Site Where Track Was Obtained
"Meadow Visualization"	5 minutes, 50 seconds	<a href="http://prtl.uhcl.edu/portal/page/portal/COS/Self_Help_and_Handouts/Visualization">http://prtl.uhcl.edu/portal/page/portal/COS/Self_Help_and_Handouts/Visualization</a>
"The Forest"	5 minutes, 41 seconds	<a href="http://www.dartmouth.edu/~healthed/relax/downloads.html#guided">http://www.dartmouth.edu/~healthed/relax/downloads.html#guided</a>
"Trip to the Beach"	9 minutes, 42 seconds	<a href="http://www.mckinley.illinois.edu/Units/Health_Ed/relax_relaxation_exercises.htm">http://www.mckinley.illinois.edu/Units/Health_Ed/relax_relaxation_exercises.htm</a>
"A Walk in the Forest"	11 minutes, 37 seconds	<a href="http://www.amazon.com/A-Walk-in-the-Forest/dp/B0026GDC1U/ref=sr_1_5?ie=UTF8&amp;qid=1424897686&amp;sr=8-5&amp;keywords=mp3+ken+goodman">http://www.amazon.com/A-Walk-in-the-Forest/dp/B0026GDC1U/ref=sr_1_5?ie=UTF8&amp;qid=1424897686&amp;sr=8-5&amp;keywords=mp3+ken+goodman</a>
"Mountain Lake"	14 minutes, 14 seconds	<a href="http://www.amazon.com/Guided-Imagery-Mountain-Lake/dp/B005CS53FW/ref=sr_1_1?ie=UTF8&amp;qid=1424897528&amp;sr=8-1&amp;keywords=mp3+michael+olpin">http://www.amazon.com/Guided-Imagery-Mountain-Lake/dp/B005CS53FW/ref=sr_1_1?ie=UTF8&amp;qid=1424897528&amp;sr=8-1&amp;keywords=mp3+michael+olpin</a>
"Floating through Colors"	14 minutes, 40 seconds	<a href="http://www.amazon.com/Guided-Imagery-Floating-Through-Colors/dp/B005CS534S/ref=sr_1_9?ie=UTF8&amp;qid=1424897528&amp;sr=8-9&amp;keywords=mp3+michael+olpin">http://www.amazon.com/Guided-Imagery-Floating-Through-Colors/dp/B005CS534S/ref=sr_1_9?ie=UTF8&amp;qid=1424897528&amp;sr=8-9&amp;keywords=mp3+michael+olpin</a>

work break was superior to doing what workers would normally do on a break, we determined that participants should choose a track most suited for that day based on length and personal preference. A major concern during project design was difficulty finding time during the work day. If staff were asked to adhere to a set schedule but did not have time to listen to that day's track, the activity itself could induce stress or not be completed.

The control group received treatment as usual. Participants were asked to take a 10-minute break (the average of the GI track lengths) and instructed to do what they normally do during a break. These activities were completed at the same dosage and duration as the experimental group. Usage of a treatment-as-usual control group is supported in the literature on GI RCTs (Abdoli et al., 2012; Baider, Peretz, Hadani, & Koch, 2001; Haase, Schwenk, Hermann, & Miller, 2005; Maddison et al., 2012; Wynd, 2005). Because of the nature of the group tasks, a blinded design was not possible.

### Baseline Measures

The following measures were completed only at baseline.

**Job Classification.** The variable measured was level of exposure to clients (indirect service, direct service, management with less than 25% time in direct client contact, and management with more than 25% time in direct client contact).

**Demographics.** Variables measured were highest level of education, years of experience in the social services field, gender, race and ethnicity, and age.

**SRRS.** The SRRS is an inventory of 43 stressful life events. Based on its potential to induce stress, each event is assigned a numeric value (Holmes & Rahe, 1967). Cronbach's alpha is not reported for this measure. However, a study testing the reliability of the SRRS found that the rank ordering used remained consistent for both healthy adults ( $r = .096-.089$ ) and psychiatric outpatients ( $r = .091-.070$ ) (Gerst, Grant, Yager, & Sweetwood, 1978).

**BFI-10.** The BFI-10 is a 10-item version of the full scale, the BFI-44, and was used to reduce burden on participants. The BFI-44 is a personality inventory measuring five personality traits—neuroticism, extroversion, conscientiousness, openness, and agreeableness (John & Srivastava, 1999). Both the full and 10-item scales have acceptable reliability and validity (Rammstedt & John, 2007). Cronbach's alpha is not reported for the BFI-10. However, the BFI-44 has

a Cronbach's alpha of .82 (John & Srivastava, 1999), and the BFI-10's neuroticism scale, which was used as a stratification tool, has acceptable correlation to the full scale ( $\alpha = .86$ ) (Rammstedt & John, 2007).

### Baseline and Follow-Up

The following measures were completed at baseline and at the end of the four-week period. All measures have adequate validity and reliability.

**ProQOL-V.** The Pro-QOL-V is a 30-item Likert-scale questionnaire containing three subscales measuring burnout and STS (the two components of compassion fatigue) and compassion satisfaction. The questions address symptoms experienced within the last 30 days. Reliability alphas are reported as .75 for the burnout scale, .81 for the STS scale, and .88 for the compassion satisfaction scale. Stamm (2010) asserted good construct validity with over 200 published papers and reported discriminant validity between the compassion satisfaction scale and the other two scales (STS and burnout). She reported a 2% shared variance ( $r = -.23$ ) between the compassion satisfaction and the STS scales, and a 5% shared variance ( $r = -.14$ ) between the compassion satisfaction and the burnout scales (Stamm, 2010).

**PSS.** The PSS (Cronbach's  $\alpha = .78$ ) is the most widely used instrument to measure perception of stress, assessing how unpredictable, overloaded, and uncontrollable one finds his or her life within the last month. The 10 Likert-scale questions address thoughts and feelings, and can be used with any population (Cohen, Kamarck, & Mermelstein, 1983).

**PSQI, Question 6.** The sixth question on the PSQI measures general subjective sleep quality. Respondents rate their sleep as "very good," "fairly good," "fairly bad," or "very bad" (Buysse, Reynolds, Monk, Berman, & Kupfer, 1989).

### Before and After Each Activity

Participants also completed the following measure before and after each activity (listening to GI or taking a break).

**State Trait Anxiety Inventory (STAI) Six-Item Short Form.** The STAI short form was developed from the full STAI, which consists of two 20-item scales. The state anxiety scale measures current transient anxiety, whereas the trait anxiety scale measures the more enduring individual tendencies leading to anxious responses to perceived stress (Spielberger, 1983). The six-item short form of STAI was used to

reduce burden on participants who have limited free time during their work day. The short form has acceptable correlation to the full STAI, with a correlation coefficient of .95. The STAI has acceptable validity and reliability (Cronbach's  $\alpha = .82$ ) (Marteau & Becker, 1992; Speilberger, 1983).

**Break Detail Form.** To document their compliance with protocol, subjects filled out a form documenting the break length, the break activity (control) or GI track to which they listened (treatment), and whether or not the break was interrupted.

## Data Analysis

For each response variable, we calculated the average change score from pretest to posttest for each group. The STAI measurements, which involved multiple pre- and posttest measurements, were summarized as the total change over the six-scale items, averaged over the 12 time points. Unpaired *t* tests were calculated to determine the statistical significance of the difference between the two groups' mean change scores. An intent-to-treat approach was used whereby all randomized subjects were included in the analysis where possible; thus, the analysis made use of all available outcome measurements.

We surveyed the literature to determine a sample size goal for the study. Because of the small dosage of the intervention and short duration of the treatment period, we hypothesized that any changes on the measures completed before and after the four-week period would be of moderate size. We hypothesized that the largest effect would be realized through a change in anxiety as assessed by baseline and follow-up scores on the STAI short form. As a result, we powered the study for state anxiety (STAI) rather than compassion fatigue (ProQOL). Because we found no literature documenting the standard deviation of STAI change scores with GI or other short-term wellness approaches such as meditation, we decided to assign a moderate standardized effect size of .5. Using a two-tailed alpha and beta of .2, we determined that a sample size of 126 would therefore be needed to achieve statistically significant results with a moderate effect size.

## RESULTS

Table 2 represents the demographics, job characteristics, and baseline scores for both groups, including participants who did not complete the study. Both groups were similar in constitution, except in regard to race and ethnicity.

Because the randomization failed to evenly distribute the various job characteristics among the control and GI groups, we analyzed the baseline scores of all the four-week measures used in the study. There were no statistically significant differences between baseline scores of direct service staff and baseline scores of all other participants (management and indirect service staff). To further investigate, we analyzed a subsample of direct service workers completing the study. The differences between the change scores of the GI and control groups were not statistically significant but remained similar to the differences found in the analysis of the groups in their entirety. These analyses suggest that in this sample, the differences between the two groups were not likely due to group composition. However, the results should be interpreted with caution.

## STAI Short Form

Each participant completed up to 12 activities (GI or break) and completed the STAI short form before and after each activity. Each participant's mean change score of all activities was calculated, and this mean STAI change score was then used to calculate the overall group mean STAI change score. Table 3 illustrates the overall mean change score for all 12 activities of each group and the standard deviations of those change scores. On an 18-point scale, the GI group saw an average decrease of 3.56 STAI (state anxiety) points per person, whereas the control group score decreased by an average of 1.75 STAI points per person. This 1.81 point difference between the two groups was statistically significant ( $p = .001$ ). It is important to note that the GI group spent an average of 8.02 minutes per activity, whereas the control group spent an average of 14.79 minutes per activity.

## ProQOL-V, PSS, and Sleep

Before and after the four-week intervention, both groups filled out the ProQOL, the PSS, and the PSQI question 6. We calculated the change scores for each participant and compared the mean change scores of the two groups. Table 3 illustrates these mean change scores and standard deviations of the change scores. Regarding the measures completed before and after the four-week period, there was one statistically significant difference between the two groups' mean change scores. The GI group increased an average of .45 points on a

**Table 2: Demographics**

Demographic	Guided Imagery (n = 35)	Control (n = 34)	p
	n (%)	n (%)	
Gender			.742
Female	25 (71)	27 (79)	
Male	7 (20)	5 (15)	
Missing data	3 (9)	2 (6)	
Race and ethnicity			.011
African American	6 (17)	12 (35)	
White	24 (69)	19 (56)	
Multiracial	2 (6)	1 (3)	
Hispanic	0 (0)	0 (0)	
Other	0 (0)	1 (3)	
Missing data	3 (8)	1 (3)	
Age (years)			.323
18–34	16 (46)	9 (26)	
35–54	13 (37)	18 (53)	
55+	4 (11)	6 (18)	
Missing data	2 (6)	1 (3%)	
Job classification			.077
Indirect service	3 (9)	3 (9%)	
Direct service	25 (71)	15 (44%)	
Management (<25% direct service)	2 (6)	8 (24%)	
Management (>25% direct service)	4 (11)	8 (24)	
Missing data	1 (3)	0 (0)	
Highest level of education			.510
High school/associate degree	4 (11)	6 (18)	
Bachelor's/some master's work	12 (34)	9 (26)	
Master's degree	16 (46)	17 (50)	
Missing data	1 (3)	0 (0)	
	<i>M (SD)</i>	<i>M (SD)</i>	
Years of experience	11.68 (9.36)	11.43 (9.71)	
Baseline score			
Perceived Stress Scale	19.66 (5.25)	17.56 (5.99)	.126
Compassion satisfaction	38.51 (6.02)	39.47 (4.88)	.472
Burnout	22.49 (5.01)	22.59 (4.86)	.932
Secondary traumatic stress	21.69 (5.13)	20.79 (5.42)	.485
Self-reported sleep quality	2.40 (0.60)	2.56 (0.75)	.334
Big Five Inventory neuroticism scale	5.85 (1.96)	5.59 (1.97)	.593
Social Readjustment Rating Scale	319.53 (399.64)	277.80 (212.19)	.588

**Table 3: Means and Standard Deviations of Change Scores**

Measure	Guided Imagery		Control Group		p
	<i>M (n)</i>	<i>SD</i>	<i>M (n)</i>	<i>SD</i>	
State Trait Anxiety Inventory short form	-3.56 (31)	2.18	-1.75 (31)	1.42	.001**
Perceived Stress Scale	-1.83 (29)	4.16	-0.35 (29)	4.85	.217
Compassion Satisfaction	0.71 (28)	3.47	-0.10 (29)	3.41	.373
Burnout	-1.46 (28)	3.28	0.17 (29)	3.53	.075
Secondary Traumatic Stress	-1.39 (28)	3.26	-0.24 (29)	4.32	.262
Self-Reported Sleep Quality	0.45 (29)	0.74	0.03 (29)	0.82	.048*

\* $p < .05$ . \*\* $p < .01$ .

four-point rating of sleep quality, whereas the control group increased an average of .03 points on this scale. This .42 point difference between the groups' change in self-reported sleep quality was statistically significant ( $p = .048$ ).

It is noteworthy that this sample was not normal in comparison with the ProQOL's norms. According to the ProQOL norms, 25% of a sample should score low on burnout, STS, and compassion satisfaction; 50% of a sample should score average on these scales; and 25% of a sample should score high on these scales. On the compassion satisfaction scale, the sample scored as follows at baseline: 0% low, 67% average, and 33% high. At baseline, 57% of participants scored low on burnout, 43% reported average burnout, and 0% reported high burnout. Regarding baseline STS, 67% scored low, 33% reported average STS, and 0% reported high STS.

A surprising result was the increase in sleep quality. The treatment group reported the following: 7% reported very bad sleep at baseline and 0% reported very bad sleep at follow-up; 45% reported fairly bad sleep at baseline and 21% reported fairly bad sleep at follow-up; 48% reported fairly good sleep at baseline and 72% reported fairly good sleep at follow-up; 0% reported very good sleep at baseline and 7% reported very good sleep at follow-up.

There was little difference between the control group's pre and post reports: 7% reported very bad sleep at baseline and follow-up; 41% reported fairly bad sleep at baseline and follow-up; 45% reported fairly good sleep at baseline and 41% reported fairly good sleep at follow-up; 7% reported very good sleep at baseline and 10% reported very good sleep at follow-up.

Because the intervention was low dosage, low duration, and conducted during work hours, this finding was unanticipated; it is notable that such a short intervention could affect sleep to a point where only 21% of those in the treatment group

indicated poor sleep after the four weeks, as opposed to individuals in the control group, whose sleep quality remained almost unchanged.

Some treatment adherence issues must be considered. Several participants did not complete all activities because they were too busy, sick, or took vacation days. On average, each participant in the GI group completed 9.42 activities ( $SD = 2.53$ ), and the control group completed 10.34 activities ( $SD = 2.22$ ). This difference between the two groups was not statistically significant. To gain insight into what might be creating the sleep effect, a subsample of those completing nine or more activities was analyzed (see Table 4). In this subsample, the sleep trends persist; the differences between the two groups increase slightly.

## DISCUSSION

In this sample, participants who listened to GI during breaks over a four-week period achieved significant reductions in state anxiety and significant increases in sleep quality when compared with those of the control group participants. Furthermore, the GI group's beneficial results were achieved in almost half of the time. Because the intervention was implemented over a relatively short period of time and not time intensive, it was hypothesized that the greatest effect would be with short-term state anxiety, and that small decreases in compassion fatigue and perceived stress would occur. Generally speaking, this hypothesis was supported. On an 18-point scale, the GI group saw a decrease of 1.81 more STAI points than the control group. The STAI results are promising, as stress is cumulative. If short-term benefits are consistent, there may also be benefits in reducing long-term stress, such as compassion fatigue, through regular use of the intervention for longer periods of time.

The improvements in self-reported sleep quality warrant further investigation using more rigorous

**Table 4: Mean and Standard Deviations of Change Scores for Participants Completing Nine or More Activities**

Measure	Guided Imagery ( $n = 20$ )	Control Group ( $n = 25$ )	$p$
	$M$ ( $SD$ )	$M$ ( $SD$ )	
Perceived Stress Scale	-2.20 (3.44)	-0.16 (5.10)	.133
Compassion satisfaction	0.30 (3.31)	-0.08 (3.63)	.715
Burnout	-1.90 (3.29)	0.00 (3.20)	.058
Secondary traumatic stress	-0.50 (2.72)	0.32 (4.10)	.420
Self-reported sleep quality	0.55 (0.76)	0.00 (0.76)	.020*

\* $p < .05$ .

measures. Because improvement in sleep quality was unanticipated, the full PSQI was not used, to reduce burden on participants. In future studies, we recommend using the full PSQI or a noninvasive biological measure of sleep quality.

There are limitations to consider while interpreting these data. Our study was powered to detect a moderate effect size of .5, but we were unable to reach our sample size goal of 126 participants. However, we were still able to find statistically significant differences in state anxiety and sleep quality. It is possible that the differences in burnout, STS, and perceived stress may have achieved statistical significance if the sample goal was met, as their trends were similar to those trends that did reach significance. It is inconclusive whether significant results would have been achieved with a larger sample; therefore, more research needs to be conducted to determine GI's effects on these constructs.

It is possible that this sample is biased, as no participants scored high on burnout or STS, or low on compassion satisfaction. According to ProQOL norms, 25% of a sample should score within these ranges. It is suspected that there were people within this agency who did score within these ranges on these scales, but they did not participate. One supposition is that the study drew people already familiar with utilization of self-care activities. Another possibility is that those with higher levels of stress may have felt overwhelmed and unable to adhere to the study's guidelines, and this is supported by the marginally significant difference ( $p = .057$ ) in PSS baseline scores of those who did not complete (21.92) versus those who completed the study (17.93). Because the sample was not generally normative, it is inconclusive whether these results are generalizable. Further research needs to be conducted with samples that more closely mirror ProQOL's norms.

The randomization failed to evenly distribute direct service staff and supervisors among the control and GI groups. There were no significant differences in baseline scores between direct service and other employees, but we recognize that there are inherent differences between job classes, and the results should be interpreted with caution. We recommend that future studies recruit homogeneous samples or stratify by job classification.

Difficulty in treatment adherence occurred. This is partly due to the study's implementation

during the summer months when traditionally many employees take vacations. However, once those who completed less than nine activities were removed from the analysis, the differences between the two groups' mean change in sleep remained consistent, lending support to GI as the cause of the effects, rather than the vacations taken.

## IMPLICATIONS

Because of the study's limitations, the results should be interpreted with caution. This pilot study provides some support for the use GI as a promising self-care tool for mental health workers. As this study has shown, compared to the control group, the GI group had significant improvements in state anxiety and sleep quality. Further research needs to address GI's efficacy in larger samples that reflect ProQOL norms. We also suggest using more rigorous measures of sleep quality and ensuring that both groups are congruent in regard to direct service workers.

If further research supports this study's findings, GI may be a useful self-care tool for mental health agencies with minimal time and resources. Such utilization may yield significant organizational impact, as poor sleep quality correlates with negative health outcomes (Gallicchio & Kalesan, 2009). GI may have the potential to not only help workers who are experiencing sleep problems and anxiety, but also positively affect the mental health agencies that employ them and the clients that they serve. **SWR**

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**Kimberly A. Kiley, MA**, is a research and evaluation specialist, FrontLine Service, 1744 Payne Avenue, Cleveland, OH 44114; e-mail: kimberly.kiley@frontlineservice.org. **Ashwini R. Sehgal, MD**, is codirector and Duncan Neuhauser Professor of Community Health Improvement, Center for Reducing Health Disparities, Case Western Reserve University, Cleveland. **Susan Neth, LSW**, is executive director, FrontLine Service, Cleveland. **Jacqueline Dolata, MBA**, and **Earl Pike, BS**, are codirectors, Community Research Scholars Initiative, Center for Reducing Health Disparities, MetroHealth Medical Center/Case Western Reserve University, Cleveland. **James C. Spilbury, PhD**, is associate professor, and **Jeffrey M. Albert, PhD**, is professor, Department of Population and Quantitative Health Sciences, Case Western Reserve University, Cleveland.

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# Disability, Intimacy, and Sexual Health

## A Social Work Perspective

Kristen Faye Linton, Heidi Adams Rueda,  
and Lela Rankin Williams

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