Quantitative Research

Evaluation of Guided Respiration Mindfulness Therapy (GRMT) for Reducing Stress in Nurses

Shu-Chen Wang
Department of Nursing, Hualien Tzu Chi Hospital, Buddhist Tzu Chi Medical Foundation; Department of Nursing, Tzu Chi University, Hualien, Taiwan

Wen-Yu Hu
School of Nursing, College of Medicine, National Taiwan University, Taipei, Taiwan

Lloyd Lalande
School of Health Management, Tzu Chi University of Science and Technology, Hualien, Taiwan
✉ e-mail: euroite@gmail.com
website: https://lloydlalande.com

Jung-Chen Chang
School of Nursing, College of Medicine, National Taiwan University, Taipei, Taiwan

Shao-Yu Tsai
School of Nursing, College of Medicine, National Taiwan University, Taipei, Taiwan

Shu-Chuan Chang
Department of Nursing, Tzu Chi University, Hualien, Taiwan

Tzung-Kuen Wen
Dila Department of Buddhist Studies, Dharma Drum Institute of Liberal Arts, Taipei, Taiwan

jhn

Journal of Holistic Nursing
American Holistic Nurses Association
Volume XX Number X XXXX 2022 1–13

10.1177/08980101221094973
journals.sagepub.com/home/jhn

For more information on GRMT Training, visit: lloydlalande.com

Email Lloyd if you would like a copy of the full article.

Abstract

Guided respiration mindfulness therapy (GRMT) is a clinical model of breathwork that has demonstrated effective in treating depression, anxiety, and stress. This study examined the effectiveness of GRMT as a holistically oriented intervention for reducing psychological distress in nurses. Sixty-two nurses were assigned to either five sessions of GRMT or 5 sessions of a mindfulness-based intervention (MBI) comparison condition which were conducted over 5 weeks. A no-treatment control was also included. Session-by-session change in depression, anxiety, and stress, along with change in mindfulness and self-compassion were assessed. Multilevel analysis showed GRMT resulted in statistically significant reductions in overall psychological distress, anxiety, and stress levels, as well as significant increases in mindfulness and self-compassion with large to very large effect sizes. On all measures, GRMT performed better than the comparison MBI intervention which showed no significant effect on stress levels. Results suggest that GRMT can provide nurses with an effective group intervention for reducing stress, and increasing mindfulness and self-compassion which are foundational elements of self-care for the holistic nurse.

Key words: anxiety, breathwork, GRMT, guided respiration mindfulness therapy, mindfulness, nurses, stress

High levels of stress and burnout among nurses is well documented, as is the need to identify effective wellbeing-focused interventions (Friganovi et al., 2018; Maharaj et al., 2019). This need has taken on even greater importance due to the high levels of psychological distress experienced by health care workers during the Covid-19 pandemic (Batra et al., 2020). Personal distress resulting from stress not only contributes to job dissatisfaction, it also undermines a nurse's ability to provide compassionate holistically oriented care to patients.

One group of holistically oriented interventions suggested to reduce stress focuses on developing the capacity for mindfulness. This focus aligns strongly with the core holistic nursing value of self-care with its emphasis on deepening self-awareness (Frisch & Rabinowitch, 2019). Self-care practices which foster self-awareness and increase stress-management skills can help holistic nurses build a stronger experience of ontological security and safety, which in turn can provide a stable and compassionate foundation from which to facilitate care of others. This current report describes the background and results of a study evaluating an emerging clinical intervention, guided respiration mindfulness therapy (GRMT), as a stress-reduction intervention for nurses. A mindfulness-based intervention (MBI) based on the 8-week mindfulness-based stress reduction program developed by Kabat-Zinn (1982) provided a comparison condition.

The MBSR program is now well established and teaches participants formal and informal meditation practices with the aim of developing mindful awareness of the present moment, characterized as increased awareness and acceptance of sensations, thoughts, and emotions. MBIs have a high degree of variability, tend to be brief, and often adapt exercises from the full MBSR program, for example, mindful breathing and mindful eating. A considerable amount of research suggests MBSR and related MBIs are effective in improving health professionals psychological functioning (Kriakous et al., 2020; Lamothe et al., 2016; van der Riet et al., 2018).

Guided Respiration Mindfulness Therapy is a newly introduced clinical model of breathwork that is gaining recognition in mental health practice. For example, Aideyan et al. (2020) offer a practitioners' guide to breathwork for clinical mental health counselors and draw attention to GRMT as an emerging practice option. Historically, while breathwork practice with some comparable features to GRMT first gained popularity in America during the 1970s on the fringe of self-development and experiential psychotherapy, its growth and acceptance has until recently remained constrained by the lack of a clearly specified approach, no standardized training process, and neglect of research to provide an evidence base, among other concerns.

The development of GRMT with a specific focus on clinical mental health practice represents an evolution of breathwork practice. The approach provides an empirical rational for the use of its three core components (respiratory regulation, somatically focused mindfulness, and relaxation) in the treatment of depression and anxiety (Lalande et al., 2012). The approach has been operationalized in a manualized treatment protocol and a standardized clinician training program has demonstrated effective in providing therapists with basic intervention skills and competence (Lalande et al., 2016). Additionally, there appears to be good acceptance and endorsement among mental health professionals receiving training (Lalande et al., 2016) and among clinical trial participants (Lalande, 2021). Further, a clinical trial of GRMT with depression and anxiety sufferers has demonstrated its efficacy in reducing symptoms of depression, anxiety, and stress, along with increasing sense of wellbeing (Lalande et al., 2017).

Background

Faced with the pressing need to identify and implement a stress reduction intervention to improve nurses wellbeing and reduce attrition at a Buddhist hospital in east Taiwan, and encouraged by positive results of mindfulness-based intervention research, Wang et al. (2017) conducted a study to

assess the 8-week MBSR program (led by a certified MBSR trainer) in reducing nurses' stress levels. Contrary to expectations the study found no significant pre-post change in level of stress, measured with the nurse stress checklist (Benoliel et al., 1990), and no significant post-intervention difference in stress levels or mindfulness compared to a humanities course control condition and a no-treatment group. Nurses' feedback collected as part of the study suggested acceptance of MBSR was poor with training length and associated demands identified as increasing nurses' stress levels when working in an already demanding environment. This observation is supported by research showing that nurses working in shifts find the time demands of the MBSR program and its daily homework requirement to be stressful (Hallman et al., 2014; Mackenzie et al., 2006).

An additional concern which encompasses MBSR and related MBI research identified by Ospina et al. (2007) is that the vast majority of studies claim intervention effectiveness based on comparisons with a wait-list control condition and do not include a comparison to any bona fide active treatment. An examination of nursing related MBI research selected for inclusion in meta-analytic reviews clearly demonstrates this criticism also applies to nursing related studies (for example, see Smith, 2014). Meta-analyses of randomized clinical trials that have directly compared MBIs with active interventions (e.g., relaxation, exercise, or behavioral therapy) found they offer no advantage, whether specifically treating depression and anxiety (Goyal et al., 2014; Strauss et al., 2014) or more generally (Rosenkranz et al., 2019). The meta-analysis by Goyal et al. (2014), commissioned by the U.S. Agency for Healthcare Research and Quality, found MBIs had low efficacy when it came to reducing stress or improving quality of life.

Over recent years a concern coming to the attention of consumers of mindfulness-based interventions which suggests caution is the positive bias in reporting of results. Coronado-Montoya et al. (2016) found the reporting of randomized controlled trials of mindfulness-based interventions contained "exaggerated effect estimates and a rate of positive trial reports that exceeds plausibility" (p. 13). This finding is more recently confirmed in a meta-analysis of contemplative interventions for employee distress (Slemp et al., 2019). This critical analysis of mindfulness research should not be interpreted as indicating mindfulness-based interventions are not beneficial.

Guided Respiration Mindfulness Therapy

A unique feature of GRMT distinguishing it from mindfulness-based interventions is that during a GRMT session (which can be in individual or group format) the participant relaxes in a lying position with eyes closed and is guided for approximately 60-minutes by a trained facilitator in adopting an uninhibited breathing pattern while applying somatically focused mindfulness and relaxation. A primary aim of guidance in GRMT is providing support in establishing a healthy, uninhibited, "non-defensive" breathing pattern, which features expansion of the chest, totally relaxed exhalation, unbroken rhythmicity, and inhalation deeper than normal for a resting state.

As habitual rigid or defensive breathing patterns yield to more spontaneous and unrestricted breathing, the recipient experiences an increased energy flow in the body and gradual emergence of suppressed or warded off feeling states. Consistent with Buddhist practice (Ñāṇamoli, 1964), mindfulness and concentration are combined in GRMT and play an important role in the efficient integration of somatic and affective states. Mindfulness has a specific somatic focus in GRMT. This involves moment-to-moment concentrated attention applied to the most dominant sensation, along with acceptance of that experience. This further deepens contact with inner experience. A GRMT session creates an altered state of consciousness which is often experienced as profound relaxation, emptiness, and felt sense of integration of mind, body, and spirit. While the experience is unique to

each individual, and different at each session, this process is standardized and repeated at all sessions.

In an initial theoretical formulation, Lalande et al. (2012) suggest inhibited or strained breathing plays a role in the development and maintenance of depression, anxiety, and stress symptoms by dampening down energy flow and restricting awareness of uncomfortable inner experience. An intervention specific mechanism of change embodied in the first component of GRMT hypothesized to contribute to positive outcomes is replacement of inhibited breathing with a conscious breathing pattern free of inhibition which can facilitate full contact with the moment-to-moment flow of experiencing. Lalande et al. (2017) found that over the course of GRMT sessions, participants perception of their breathing as free and uninhibited, including the ability to totally relax their exhale, significantly increased. This perceived reduction in breathing inhibition significantly predicted reductions in anxiety, stress, and anxiety sensitivity.

A related mechanism that may contribute to GRMT outcomes, operationalized in the second component of the approach, is strengthening the ability to adopt the position of accepting observer of the moment-to-moment transitory flow of sensations, emotions, and thoughts, particularly those that are uncomfortable or previously hidden from view. This position is described as a 'decentered' perspective in the mindfulness literature and suggested to operate as a mechanism of change in MBIs by increasing the capacity for self-regulation (Shapiro et al., 2006). Lalande et al. (2017) found GRMT sessions did lead to a significant increase in decenteredness which was correlated with reductions in depression and stress.

Initial research into GRMT also found its practice led to self-efficacy in its use which may contribute to outcomes. Lalande et al. (2017) found an increase in overall self-efficacy using GRMT (e.g., respiratory regulation, somatic mindfulness, relaxation), developed quickly and significantly predicted reductions in depression, anxiety, and stress. More specifically, participants sense of confidence in their ability to regulate their thoughts and emotions also increased over the course of sessions and significantly predicted reductions in depression, anxiety, stress, anxiety sensitivity, and increase in overall wellbeing.

In a nursing context, features which make it worth evaluating as a holistic stress reduction intervention include: no daily homework or practice requirements; no requirement to engage in dialogue or with learning materials; no need to reveal or discuss personal issues; a strong person-centered experiential focus on inner-experience; relatively easy to learn and all training sessions repeating the same standardized process; rapid deepening of self-awareness and development of skill in regulating attention, attitude, and managing affective and cognitive states. For nurse managers, benefits of GRMT could include: flexibility in scheduling sessions; individual or group format; and a good level of participant acceptance**.**

Mindfulness practice involves an accepting, non-judgmental, and gentle attitude toward one's self. This attitude is comparable to self-compassion, defined by Neff (2003b) as "being touched by and open to one's own suffering, not avoiding or disconnecting from it, [and] generating the desire to alleviate one's suffering and to heal oneself with kindness" (p. 87). Indeed, change in self-compassion measured with the Self-Compassion Scale (SCS; Neff, 2003a) has been shown to mediate MBI reductions in psychological distress and perceived stress (Shapiro et al., 2005), predict happiness, optimism, and positive affect (Neff & Vonk, 2009), and be a better predictor of psychological health and specifically depression and anxiety symptom severity than mindfulness (Van Dam et al., 2011). With the development of self-compassion seeming to be an important contributor to MBI outcomes, an increase in self-compassion should provide an indication of the effectiveness of interventions utilizing meditation practices.

With the ongoing imperative for identification of effective and acceptable interventions for addressing nurses' stress, the primary aim of this study was to ascertain the impact on nurses' wellbeing of five sessions of GRMT, delivered over a 5-week period. The study aimed to assess change in level of overall psychological distress and more specifically, levels of depression, anxiety, and stress symptoms. The study also aimed to determine if GRMT influenced wellbeing focused measures of mindfulness and self-compassion. Additionally, with the need to establish if a shorter and less demanding MBI would be effective in reducing nurses' stress, a 5-week MBI adapted from, *A mindfulness-based stress reduction workbook* (Stahl & Goldstein, 2010) was also evaluated alongside the GRMT intervention and served as an active comparison condition.

Method

Design

A session-by-session repeated measures design was used with participants assigned to one of three conditions: a GRMT treatment group, a MBI group, and a no-treatment group. The GRMT and MBI group interventions were conducted in parallel over a 5-week period and during working hours, with GRMT conducted at the morning change of shift, and the MBI at the afternoon change of shift. Both groups had 3-hours available for the first weeks session, followed by four weekly 90-minute sessions, giving a total of 9 hours of training. The MBI had the additional requirement of daily homework practice. Outcome data for all conditions was collected on a session-by-session basis so the trend in change over 7 time points could be assessed (intake, one week after each intervention session, and at 3-month follow-up) using a multilevel approach to statistical analysis. The study was assessed as low-risk and given ethics approval by the review board of the hospital (IRB106-138-B).

Participants

Registered nurses were recruited from the Tzu Chi General Hospital in Hualien City, Taiwan. Participants responded to notifications sent through the hospital email system. Participants needed to be 20 years of age or older and working full-time as a clinical nurse. Participation was also contingent on not engaging in additional wellness activities during involvement in the study. Sixty-two nurses participated with all employed in different units, with the exception of two. The mean age was 29.7 (range 21 to 52 years), with 87% being female (N = 54). Mean age and length of service in the GRMT group were higher than that of the no-treatment control, while other demographic information showed no significant difference between groups. Time availability constraints and workplace demands meant more nurses were available to participate in the afternoon MBI sessions (N = 24) than the morning GRMT sessions (N = 14) sessions. Twenty-four participants were assigned to a no-treatment control condition. All participants completed outcome measures prior to commencing the program, before each intervention session (i.e., one week after receiving the previous session to avoid an immediate post-session affect bias), and at 3-month follow-up.

Interventions

The instructor for each intervention drafted a manualized protocol, and then discussed with the lead researcher its feasibility and strategies for maintaining intervention integrity and timing when faced with potential issues that may arise due to the nursing research context (e.g., late arrivals due to unforeseen patient emergencies).

GRMT Intervention. The group intervention was based on the GRMT Treatment Manual for Individual Therapy developed by Dr Lloyd Lalande (2007) who was also available to act as instructor for GRMT during the trial. Facilitation was in the English language with translation help provided by a nurse familiar with the intervention. Participants were provided with a brief introduction to GRMT practice guidelines and details of how in-session guidance and support would be provided.

GRMT involves the client adopting a hands-by-side lying position with eyes closed, with the facilitator then providing guidance in applying the 3-component model for an unbroken period of approximately 60 minutes. Respiratory regulation (the first component) involves adopting a specific breathing style emphasizing unbroken rhythmicity, active expansion of the chest, and passive exhalation. Somatically focused mindfulness (the second component) involves maintaining moment-to-moment contact with the physical sensation that is most dominant and a non-defensive acceptance of experience. Relaxation (the third component) involves engaging in a continuous process of recognition and relaxation of physical tension.

During a GRMT session, a variety of somatic and cognitive effects may be experienced which can include pleasurable physical and mental states and also brief confrontational experiences, (e.g., when encountering previously avoided aversive thoughts and emotions, and trauma memories).

Completion of a GRMT session often includes an experience of profoundly deep relaxation and mental calm, clarity, insight, and felt sense of integration. Time is provided for the client to reorient to normal consciousness, and for the facilitator to respond to any questions with the aim of normalizing the participant's or client's experience, but provides no additional intervention strategies. This same process is repeated at subsequent sessions. Total session time including introduction and completion is 90-minutes. There is no requirement for homework.

MBI intervention. The mindfulness-based intervention was adapted from, *A mindfulness-based stress reduction workbook* (Stahl & Goldstein, 2010), and translated into the traditional Chinese language used in Taiwan. The instructor was experienced in teaching meditative practice. The course content included an introduction to mindfulness and a range of mindfulness exercises including, mindfully eating a raisin, mindful check-in, three-minute mindful breathing, walking meditation, body scan, sitting meditation, mindful standing yoga, loving-kindness meditation, and mindful communication. After each session participants were assigned homework and instructed to record the status of their daily practice. Participants also had the opportunity to discuss their homework with the MBI instructor before the next class.

Measures

To assess intervention impact, standardized measures of psychological functioning with a long history of use were chosen.

Depression Anxiety and Stress Scale. To evaluate change in depression, anxiety, and stress symptoms, the Traditional Chinese Language version of the 21-item short-form of the Depression, Anxiety, Stress Scale (Lovibond & Lovibond, 1995) was used. The DASS-21 is a well-used instrument allowing for comparison of results to other studies. The DASS-21 uses a 4-point scale with higher scores indicating higher affective disturbance. In the current study the DASS-21 demonstrated a high level of reliability (Cronbach's $\alpha = .94$).

Mindful Attention Awareness Scale. To determine intervention effects on participants' level of mindfulness this study used the Chinese language version of the Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003) evaluated by Taiwanese researchers (Chan et al., 2011). The MAAS contains 15-items and uses a 6-point scale (1 = rarely, 6 = always). After reverse scoring, higher scores are intended to indicate increased mindfulness of overt behavior and awareness and receptivity to inner experiences (Brown & Ryan, 2003). In the current study the MAAS demonstrated a high level of reliability (Cronbach's $\alpha = .94$).

Self-Compassion Scale. To assess any intervention induced change in participants level of self-compassion the 12-item short-form of the Self-Compassion Scale (SCS-SF; Raes et al., 2011) was used. Higher scores on the 5-point scale indicate higher levels of self-compassion. The scale bases level of self-compassion on combined responses on 3 sub-scales: self-kindness versus self-judgment,

common humanity versus isolation, and mindfulness versus over-identification. In the current study the SCS-SF had a good level of reliability (Cronbach's α = .72).

Data collection and analysis

Data was collected at 7 time points for all measures. Baseline data was collected at intake and then each participant completed study measures one week after attending each of the 5 training sessions. This 1-week delay meant data was more likely to reflect actual perceived change and less likely to be distorted by any immediate influence on affect from the session. Follow-up data was collected at 3-months. Multilevel analysis (using SPSS v.21, Mixed procedure) was used to analyses individual change over time on all outcome measures. An autoregressive heterogeneous covariance structure was used on all models, which assumes intervention effects will reduce at successive time points. Multilevel analysis is increasingly used in repeated measures designs (see, Heck et al., 2014) as it is unaffected by missing data. All cases are retained in the analysis providing a larger sample and increase in accuracy of estimates, which are conservative. Descriptive statistics were used to calculate pre-post-intervention (T0-T5) within-group effect sizes using Cohen's *d*.

Results

Means and standard deviations for each measurement time point and within group pre-post change effect sizes for the GRMT and MBI groups are provided in tables 1 and 2.

Table 1: GRMT group mean, standard deviation at each time point, and pre-post effect size

	Baseline (N=14) *M (SD)*	T1 (N=14) *M (SD)*	T2 (N=14) *M (SD)*	T3 (N=11) *M (SD)*	T4 (N=7) *M (SD)*	T5 (N=6) *M (SD)*	*d*
DASS-21 Overall distress	14.36 (10.61)	11.57 (9.49)	8.38 (8.71)	9.60 (7.54)	5.14 (6.06)	3.00 (5.44)	1.34
Depression sub-scale	3.79 (3.28)	3.00 (3.16)	2.93 (4.04)	3.18 (3.37)	1.57 (2.29)	1.00 (2.44)	0.96
Anxiety sub-scale	4.86 (3.63)	3.71 (2.86)	3.00 (2.74)	4.00 (4.42)	1.71 (1.79)	0.50 (0.83)	1.65
Stress sub-scale	5.71 (4.39)	4.86 (4.22)	4.14 (4.38)	4.82 (3.45)	1.86 (2.26)	1.50 (2.34)	1.19
Mindfulness	57.57 (10.95)	54.64 (11.62)	63.54 (16.62)	60.82 (17.17)	70.00 (14.39)	73.83 (15.97)	1.18
Self-compassion	39.50 (5.09)	41.64 (6.59)	42.69 (5.49)	41.64 (6.63)	46.43 (7.50)	47.67 (5.75)	1.50

Table 2: MBI group mean, standard deviation at each time point, and pre-post effect size

	Baseline (N=24) *M (SD)*	T1 (N=24) *M (SD)*	T2 (N=23) *M (SD)*	T3 (N=21) *M (SD)*	T4 (N=19) *M (SD)*	T5 (N=17) *M (SD)*	*d*
DASS-21 Overall distress	16.54 (10.79)	13.79 (10.79)	11.43 (9.15)	9.24 (6.41)	8.05 (6.85)	8.65 (8.09)	0.82
Depression sub-scale	4.21 (3.42)	2.96 (2.95)	2.52 (2.95)	1.81 (2.29)	1.84 (2.02)	2.71 (4.13)	0.39
Anxiety sub-scale	5.58 (3.91)	4.92 (3.47)	3.70 (3.09	2.86 (2.12)	2.21 (2.07)	2.12 (1.98)	1.12
Stress sub-scale	6.75 (4.85)	5.92 (3.25)	5.22 (4.08)	4.82 (2.93)	4.00 (3.63)	3.82 (3.55)	0.68
Mindfulness	51.17 (10.64)	50.96 (10.22)	57.22 (13.51)	58.91 (9.74)	61.58 (13.89)	61.82 (13.12)	0.89
Self-compassion	37.75 (4.77)	35.78 (4.729)	37.17 (6.15)	39.23 (4.79)	38.11 (5.08)	38.12 (4.52)	0.72

Overall Psychological Distress Outcomes

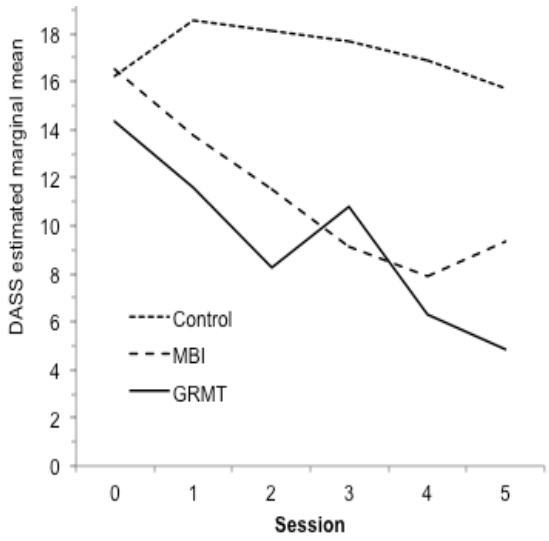
Multilevel analysis showed overall psychological distress (full-scale DASS-21 score) significantly decreased from baseline (T0) to post-intervention (T5) for both the GRMT group, $F(5, 33.67) = 3.00$, $p = .02$, and the MBI group, $F(5, 48.41) = 2.67$, $p = .03$. The trend over time in estimated marginal mean scores is represented in figure 1. At 3-month follow-up these changes had been retained for both groups. The control group showed no significant change in overall psychological distress scores from baseline to post-intervention. $F(5, 34.90) = 0.96$, $p = .45$.

Depression, Anxiety, and Stress Outcomes

For DASS-21 depression sub-scale scores, the GRMT group showed a large effect size while the MBI group showed a moderate effect size (see, table 1 and 2), however multilevel analysis indicated this trend toward decreased depression scores was not statistically significant for either group.

For anxiety scores, multilevel analysis showed a statistically significant reduction from baseline to post-intervention for both GRMT, $F(5, 20.70) = 5.90$, $p = .002$, and MBI, $F(5, 63.07) = 4.05$, $p = .003$. Very large effect sizes (table 1 and 2) were observed for both GRMT ($d = 1.65$), and the MBI ($d = 1.12$).

Figure 1. Change in overall psychological distress



For stress outcomes, multilevel analysis indicated a statistically significantly reduction for the GRMT group from intake to post-intervention, $F(5, 34.26) = 3.30$, $p = .01$, with descriptive data (table 1) indicating a very large observed effect size of $d = 1.19$. The MBI group showed a medium pre-post effect size for stress reduction of $d = 0.68$ (table 2), however, this was not statistically significant in the multilevel analysis, $F(5, 46.10) = 1.17$, $p = .33$.

At three-month follow-up both the GRMT and MBI groups maintained the significant results obtained post-intervention (T5). The no-treatment control group showed no significant change in DASS-21 depression, anxiety, or stress sub-scale scores.

Mindfulness Outcomes

Multilevel analysis of mindfulness scores measured on the MAAS (figure 2) showed a positive trend over time with a significant increase from baseline to post-intervention for both the GRMT group, $F(5, 17.30) = 15.15$, $p < .01$, and the MBI group, $F(5, 37.54) = 5.06$, $p < .01$. The observed effect size for GRMT (table 1) was very large ($d = 1.18$), and large for the MBI group ($d = .89$) (table 2). For GRMT, 12 out of 15 individual items on the MAAS scale showed a statistically significant increase, while the MBI resulted in significant change on 10 items. There was no significant change in mindfulness scores for the no-treatment control group.

At 3-month follow-up gains in mean mindfulness scores were maintained and not significantly different from post-intervention (T5) for both the GRMT and MBI group, although they had reduced slightly from the T5 mean of 73.83 to 73.33 ($SD = 12.42$) in the case of GRMT, and from 61.82 to 59.82 ($SD = 11.15$) for MBI.

Two items on the MAAS scale focus on awareness of somatic experience. Item 5 aims to capture change in awareness of "physical tension or discomfort" with results showing a significant increase ($p = .007$) for the GRMT group but not for the MBI group ($p = .139$). Item 1 aims to capture change in awareness of emotional states, and results showed for the GRMT group this significantly increased, ($p = .013$), with less but still significant change for the MBI group ($p = .045$).

Self-compassion Outcomes

Figure 2. Change in mindfulness

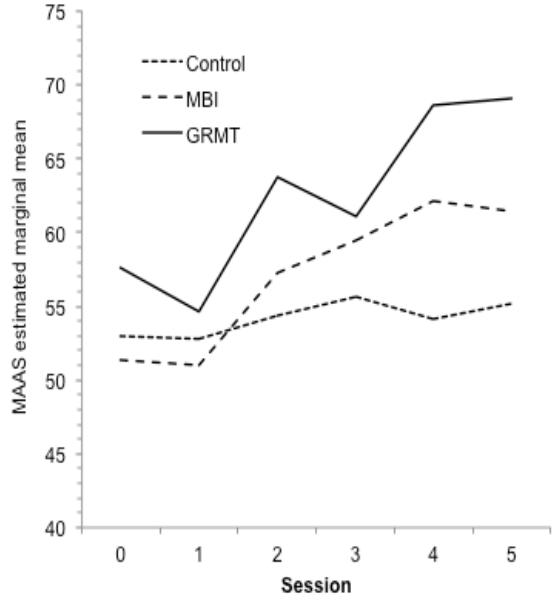
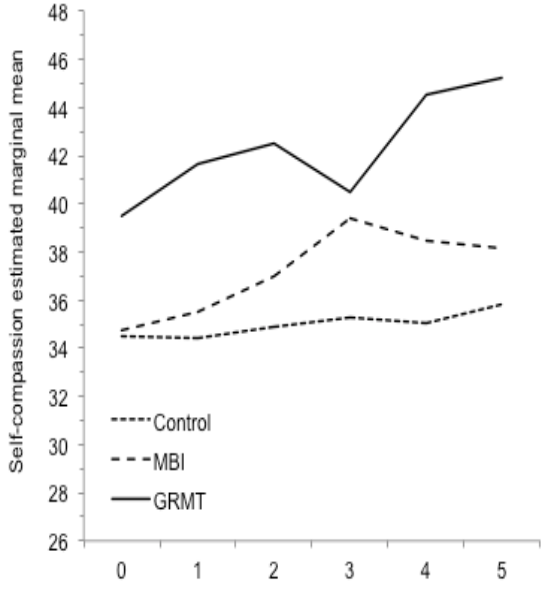


Figure 3. Change in self-compassion



Multilevel analysis showed self-compassion scores (figure 3) increased significantly from baseline to post-treatment for both the GRMT group, $F(5, 13.11) = 4.79$, $p = .01$, and the MBI group, $F(5, 38.56) = 5.14$, $p < .01$, but not for the no-treatment control group. The observed effect size for GRMT was, $d = 1.50$, and for MBI $d = .72$. At baseline the GRMT group had a significantly higher self-compassion mean than the MBI group, $t(36) = -2.88$, $p < .01$, and control group. At 3-month follow-up both the GRMT and MBI group self-compassion scores had slightly increased from post-intervention (T5) levels, although not significantly.

Discussion

This study is the first time the potential of GRMT, the clinical model of breathwork developed by Dr Lloyd Lalande, has been examined as an intervention for reducing nurses' psychological distress, specifically in terms of stress, depression, and anxiety, and in increasing mindfulness and self-compassion. A secondary aim was to evaluate a brief MBI intervention based on the well-established mindfulness-based stress reduction (MBSR) program, which also served as a comparison condition. Results indicated that both interventions led to statistically significant reductions in nurses' overall psychological distress, and an increase in mindfulness and self-compassion, with some important differences.

Guided Respiration Mindfulness Therapy

There was a strong effect from experiencing the five once-weekly GRMT sessions on reducing nurses' stress levels. GRMT also had a strong positive effect on reducing nurses' anxiety levels. The very large effect sizes for stress and anxiety symptom reduction observed in this study were also observed by Lalande et al. (2017) in their larger clinical sample of depression and anxiety sufferers. If a strong stress and anxiety reduction effect is a feature of GRMT it may provide the necessary potency to help nurses let go of any internalized effects that come from working with patients and others who are often hurting and feeling confused, anxious, alienate, and even terrified.

While previous research cited above suggests the respiratory component of GRMT plays an important role in therapeutic effects produced, this was not a focus in the current study so no claims can be made in this regard. However, the data does provide some confidence that the second component of GRMT (e.g., somatically focused mindfulness) which is aimed at increasing

awareness and acceptance of inner experience (including stress and anxiety related states) does function as intended. GRMT sessions did increase nurses' level of awareness and receptivity to inner experiencing, as indicated by a large and significant increase on the MAAS scale and specifically the scale items that directly address somatic awareness. This in turn may have contributed to the large observed increase in self-compassion as higher levels of mindfulness are associated with increased self-compassion (Shapiro et al., 2007). As there was no mention of self-compassion in the GRMT intervention it seems reasonable to suggest that sustaining awareness and acceptance of an intensified inner experience over a one-hour period while relaxing contributed to its increase. An intervention that can reliably increase self-compassion in nurses' working in high stress environments may be particularly valuable as research suggests self-compassion is an important predictor of psychological health (Van Dam et al., 2011). There was no significant effect on depression scores for the GRMT group (or the MBI group), however these were already low at baseline.

Of interest in the data is the temporary increase in distress and reduction in mindfulness and self-compassion scores that took place after the third session for the GRMT group. One possible explanation for this is that as an advanced form of meditation, GRMT provides direct observation of deeper levels of self and actual experience which may involve contact with rejected or repressed material, and for some participants this exposure type effect may have led to heightened awareness of painful emotions or current level of actual distress, which was then reflected in measure responses. All deep meditative processes have the possibility of liberating unprocessed emotion relating to, for example, traumatic memories (DelMonte, 2012). Although this possibility was presented to participants prior to participation in the GRMT intervention, it highlights the importance of providing a clearly communicated cognitive framework which provides a sense of safety to hold potentially distressing experiences and help facilitate their integration.

Mindfulness-Based Intervention

The mindfulness-based intervention developed for this study was intended to be less demanding on time and attention and hence more acceptable to nurses than a previously evaluated full 8-week MBSR program led by a certified MBSR facilitator in the same hospital which showed no significant effect on nurses' stress levels (Wang et al., 2017). Results in the current study, however, indicated the MBI did not significantly reduce nurses' stress levels. This may, at least in part, be because the MBI did not appear to help nurses increase their awareness of feelings of physical tension or discomfort, as indicated by no significant change on scale item 5 of the MAAS, and marginally significant change on item 1. It could be argued that important stress reduction elements where removed in the briefer MBI. However, this lack of impact on stress levels is consistent with the findings of the Wang et al. (2017) study discussed above, and consistent with results from the meta-analytic investigation of meditation programs by Goyal et al. (2014). Nurses working in relentlessly demanding, high-stress hospital environments may require an approach with a higher stress reduction impact capable of breaking through stress and establishing contact with deeper inner experience.

With the exception of the stress outcome, and despite the criticisms of MBIs raised above, results do suggest that a brief 5-session MBI can produce positive outcomes in a nursing context that are consistent with those described in the mindfulness literature. The MBI was effective in producing a moderate and statistically significant reduction in nurses' level of anxiety, consistent with results of a meta-analysis by Hofmann et al. (2010) which included various forms of MBIs and found they produced a moderate effect size (Hedges' g) of 0.63 for anxiety. Nurses in the MBI group also showed a significant increase in mindfulness and self-compassion scores.

Practice Implications

This study suggests that nurses experiencing stress can benefit from GRMT and that it offers an effective option when the specific aim of reducing nurses' stress levels is a high priority.

An important consideration in choosing holistic wellness interventions is level of complexity and extent of attentional demands placed on nurses. GRMT practice has a low level of complexity and places no additional demands on nurses' time or attention, with no requirement for daily homework practice. Implementation of GRMT is also relatively straightforward as all training sessions repeat the same standardized experiential process.

GRMT involves intense and repetitive guided practice of a specific set of self-awareness and self-regulation skills which can provide nurses with an immediate experience of mental calm, relief from stress and anxiety and an increase in compassion for one's self. It has long been recognized that skill acquisition leading to positive feedback can provide a sense of coping self-efficacy in confronting and exercising control over stressors (Bandura, 1982). Potentially, nurses can intentionally and inconspicuously apply these skills at any time. Observing breathing and making breathing pattern changes to reduce inhibition; observing and accepting the physical sensation most salient in the moment; and identifying and releasing physical tension, are all GRMT skills that can be implemented at any time to help remain present to and accepting of one's own inner experiencing, and to actively respond to internal indicators of stress.

Limitations

This study does provide an initial indication that GRMT may be an effective holistic intervention in a nursing context, however, the lack of randomization and small and unequal sample sizes stand out as important limitations that urge caution when interpreting the findings. The GRMT and MBI interventions took place in different time offerings of morning or afternoon. This did impact nurses availability and it is unknown to what extent this may have impacted outcomes.

Conclusion

Both the GRMT and MBI interventions teach participants mindfulness skills, albeit through different processes. Meditative and contemplative practices are recognized as playing an important role in helping holistic nurses integrate mind-body-spirit and improve their capacity to compassionately care for themselves and others (for example, see, Dossey et al., 2005).

While the MBI was moderately effective in reducing nurses' anxiety and increasing mindfulness and self-compassion – both foundational elements in personal transformation, caution seems warranted when recommending it as a stress reduction intervention in a high stress nursing environment.

The results of this study provide the first empirical indication that GRMT can be an effective intervention in a holistic nursing context, with a particularly strong impact on stress, along with anxiety reduction and increased mindfulness and self-compassion. GRMT has the important advantage of ease of learning with minimal demand on time and attention. Overall, the person-centered nature of GRMT and its strong stress reduction effect makes it a good fit with holistic nursing. This study provides a good foundation for further more rigorous evaluation of GRMT within a nursing context.

References

Aideyan, B., Martin, G. C., & Beeson, E. T. (2020). A practitioner's guide to breathwork in clinical mental health counseling. *Journal of Mental Health Counseling*, *42*(1), 78-94. https://doi.org/https://doi.org/10.17744/mehc.42.1.06

Bandura, A. (1982). Self-efficacy mechanisms in human agency. *American Psychologist*, *37*(2), 122-147.

Batra, K., Singh, T. P., Sharma, M., Batra, R., & Schvaneveldt, N. (2020). Investigating the Psychological Impact of COVID-19 among Healthcare Workers: A Meta-Analysis. *International Journal of Environmental Research and Public Health*, *17*(23), 9096. https://www.mdpi.com/1660-4601/17/23/9096

Benoliel, J. Q., McCorkle, R., Georgiadou, F., Denton, T., & Spitzer, A. (1990). Measurement of stress in clinical nursing. *Cancer Nursing*, *13*(4), 221-228.

Brown, K., & Ryan, R. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology*, *84*(4), 822-848.

Chan, J.-H., Lin, Y.-C., & Huang, C.-L. (2011). Psychometric properties of the Chinese translation of Mindful Attention Awareness Scale (CMAAS). *Psychological Testing*, *58*(S), 235-260. https://doi.org/10.7108/PT.201104.0090

Coronado-Montoya, S., Levis, A. W., Kwakkenbos, L., Steel, R. J., Turner, E. H., & Thombs, B. D. (2016). Reporting of positive results in randomized controlled trials of mindfulness-based mental health interventions. *PLoS ONE*, *12*(4). https://doi.org/10.1371/journal.pone.0153220

DelMonte, M. M. (2012). Mindfulness and awareness: Constructivist, psychodynamic and Eastern perspectives. *International Journal of Mental Health and Addiction*, *10*(3), 311-329.

Dossey, B. M., Keegan, L., & Guzzetta, C. E. (Eds.). (2005). *Holistic nursing: A handbook for practice* (4 ed.). Jones and Bartlett Publishers.

Friganovi, A., Selic, P., Ilic, B., & Sedic, B. (2018). Stress and burnout syndrome and their associations with coping and job satisfaction in critical care nurses: A literature review. *Medicina Academica Mostariensia 6*(1-2), 21-31.

Frisch, N. C., & Rabinowitch, D. (2019). What's in a definition? Holistic nursing, integrative health care, and integrative nursing. *Journal of Holistic Nursing*, *37*(3), 260-272. https://doi.org/10.1177/0898010119860685

Goyal, M. G., Singh, S., Sibinga, E. M. S., Gould, N. F., Rowland-Seymour, A., Sharma, R., Berger, Z., Sleicher, D., Maron, D. D., Shihab, H. M., Ranasinghe, P. D., Linn, S., Saha, S., Bass, E. B., & Haythornthwaite, J. A. (2014). Meditation Programs for psychological stress and well-being: A systematic review and meta-analysis. *JAMA International Medicine*, *174*(3), 357-368. https://doi.org/10.1001/jamainternmed.2013.13018

Hallman, I., O'Connor, N., Hasenau, S., & Brady, S. (2014). Improving the culture of safety on a high acuity inpatient child/adolescent psychiatric unit by mindfulness-based stress reduction training of staff. *Journal of Child Adolese Psychiatric Nursing*, *27*(4), 183-189.

Heck, R. H., Thomas, S. L., & Tabata, L. N. (2014). *Multilevel and longitudinal modeling with IBM SPSS* (2nd ed.). Routledge.

Hofmann, S. G., Sawyer, A. T., Witt, A. A., & Oh, D. (2010). The effect of mindfulness-based therapy on anxiety and depression: A meta-analytic review. *Journal of Consulting and Clinical Psychology*, *78*(2), 169-183. https://doi.org/10.1037/a0018555

Kabat-Zinn, J. (1982). An outpatient program in behavioral medicine for chronic pain patients based on the practice of mindfulness meditation: Theoretical considerations and preliminary results. *General Hospital Psychiatry*, *4*(1), 33-47.

Kriakous, S. A., Elliott, K. A., Lamers, C., & Owen, R. (2020). The effectiveness of mindfulness-based stress reduction on the psychological functioning of healthcare professionals: A systematic review. *Mindfulness*, *12*(4), 1-28. https://doi.org/https://doi.org/10.1007/S12671-020-01500-9

Lalande, L. (2007). *Guided respiration mindfulness therapy for depression and anxiety: Treatment manual for individual therapy*. Unpublished therapy treatment manual.

Lalande, L. (2021). Depression and anxiety sufferers experience of change after guided respiration mindfulness therapy. (Unpublished manuscript).

Lalande, L., Bambling, M., King, R., & Lowe, R. (2012). Breathwork: An additional treatment option for depression and anxiety? *Journal of Contemporary Psychotherapy*, *42*(2), 113-119. https://doi.org/10.1007/s10879-011-9180-6

Lalande, L., King, R., Bambling, M., & Schweitzer, R. (2016). Guided respiration mindfulness therapy: Development and evaluation of a brief therapist training program. *Journal of Contemporary Psychotherapy*, *46*(2), 107-116. https://doi.org/DOI 10.1007/s10879-015-9320-5

Lalande, L., King, R., Bambling, M., & Schweitzer, R. (2017). An uncontrolled clinical trial of guided respiration mindfulness therapy (GRMT) in the treatment of depression and anxiety. *Journal of Contemporary Psychotherapy*, *47*(4), 251-258. https://doi.org/10.1007/s10879-017-9360-0

Lamothe, M., Rondeau, E., Malboeuf-Hurtubise, C., Puval, M., & Sultan, S. (2016). Outcomes of MBSR or MBSR-based interventions in health care providers: A systematic review with a focus on empathy and emotional competencies. *Complementary Therapies in Medicine*, *24*, 19-28. https://doi.org/10.1016/j.ctim.2015.11.001

Lovibond, P. F., & Lovibond, S. H. (1995). The structure of negative emotional states: comparison of the depression anxiety stress scales (DASS) with the beck depression and anxiety inventories. *Behaviour Research and Therapy*, *33*(3), 335-343.

Mackenzie, C. S., Poulin, P. A., & Seidman-Carlson, R. (2006). A brief mindfulness-based stress reduction intervention for nurses and nurse aids. *Applied Nursing Research*, *19*(2), 105-109. https://doi.org/10.1016/j.apnr.2005.08.002

Maharaj, S., Lees, T., & Lal, S. (2019). Prevalence and Risk Factors of Depression, Anxiety, and Stress in a Cohort of Australian Nurses. *International Journal of Environmental Research and Public Health*, *16*(1), 61. https://www.mdpi.com/1660-4601/16/1/61

Ñāṇamoli, B. (1964). *Mindfulness of breathing (ānāpānasati); Buddhist texts from the Pali canon and extracts from the Pali commentaries* (B. Ñāṇamoli, Trans.; 2 ed.). Buddhist Publication Society.

Neff, K. D. (2003a). Development and validation of a scale to measure self-compassion. *Self and Identity*, *2*(3), 223-250.

Neff, K. D. (2003b). Self-compassion: an alternative conceptualization of a healthy attitude towards oneself. *Self and Identity*, *2*(2), 85-101.

Neff, K. D., & Vonk, R. (2009). Self-compassion versus global self-esteem: Two different ways of relating to oneself. *Journal of Personality*, *77*(1), 23-50. https://doi.org/ https://doi.org/10.1111/j.1467-6494.2008.00537.x

Ospina, M. B., Bond, T. K., Karkhaneh, M., Tjosvold, L., Vandermeer, B., Liang, Y., Bialy, L., Hooton, N., Buscemi, N., Dryden, D. M., & Klassen, T. P. (2007). *Meditation practices for health: state of the research. Evidence report/technology assessment No. 155*.

Raes, F., Pommier, E., Neff, K., & Van Gucht, D. (2011). Construction and factorial validation of a short form of the self-compassion scale. *Clinical Psychology and Psychotherapy*, *18*(3), 250-255.

Rosenkranz, M. A., Dunne, J. D., & Davidson, R. J. (2019). The next generation of mindfulness-based intervention research: What have we learned and where are we headed. *Current Opinion in Psychology*, *28*, 179-183.

Shapiro, L. S., Astin, J. A., Bishop, S. R., & Cordova, M. (2005). Mindfulness-based stress reduction for health care professionals: Results from a randomized trial. *International Journal of Stress Management*, *12*(2), 164-176.

Shapiro, S. L., Brown, K. W., & Biegel, G. M. (2007). Teaching self-care to caregivers: Effects of mindfulness-based stress reduction on the mental health of therapists in training. *Training and Education in Professional Psychology*, *1*(2), 105-115.

Shapiro, S. L., Carlson, L. E., Astin, J. A., & Freedman, B. (2006). Mechanisms of mindfulness. *Journal of Clinical Psychology*, *62*(3), 373-386.

Slemp, G. R., Jach, H. K., Chia, A., Loton, D. J., & Kern, L. M. (2019). Contemplative interventions and employee distress: A meta-analysis. *Stress and Health*, *35*(3), 227-255. https://doi.org/10.1002/smi.2857

Smith, S. A. (2014). Mindfulness-based stress reduction: an intervention to enhance the effectiveness of nurses' coping with work-related stress. *International Journal of Nursing Knowledge*, *25*(2), 199-130.

Stahl, B., & Goldstein, E. (2010). *A mindfulness-based stress reduction workbook* New Harbinger Publications, Inc.

Strauss, C., Cavanagh, K., Oliver, A., & Pettman, D. (2014). Mindfulness-based interventions for people diagnosed with a current episode of an anxiety or depressive disorder: A meta-analysis of randomized controlled trials. *PLoS ONE*, *9*(4), 1-13. https://doi.org/10.1371/journal.pone.0096110

Van Dam, N. T., Sheppard, S. C., Forsyth, J., & Earleywine, M. (2011). Self-compassion is a better predictor than mindfulness of symptom severity and quality of life in mixed anxiety and depression. *Journal of Anxiety Disorders*, *25*(1), 123-130.

van der Riet, P., Levett-Jones, T., & Aquino-Russell, C. (2018). The effectiveness of mindfulness meditation for nurses and nursing students: An integrated literature review. *Nurse Education Today*, *68*, 201-211.

Wang, S. C., Wang, L. Y., Shih, S. M., Chang, S. C., Fan, S. Y., & Hu, W. Y. (2017). The effects of mindfulness-based stress reduction on hospital nursing staff. *Applied Nursing Research*, *38*, 124-124.