

Quantitative Research

Healing Touch: A Strategy for Acute Care Nurses' Stress Reduction

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The purpose of the study is to determine whether administering healing touch (HT) is more effective than deep breathing (DB) for reducing acute care nurses' stress during a shift. A randomized cluster trial assessed 150 nurses' vital signs and Visual Analog Scale for Stress (VASS) levels pre, post, and at follow-up to achieve a power of .7 and medium effect size. Open-ended questions following the intervention enriched quantitative findings describing the experience, facilitators, and barriers to potential use in nursing. The generalized estimating equation 1 (GEE1) comparisons of mean change over time, found that nurses in the HT intervention, had significantly lower VASS stress scores at posttreatment (-0.95 , $p = .0002$) and at follow-up (-0.73 , $p = .0144$) than the DB group, and the respiratory rate (RR) rate differences were nearly significant at post-intervention and significant at follow-up, respectively (1.36 , $p = .0568$ and -2.28 , $p = .0011$), indicating lower RR after HT. These findings support the use of HT as an effective stress reduction strategy as a relevant strategy to sustain a viable nurse work force post-COVID-19.

Keywords: *healing touch; biofield energy; nurse stress*

Introduction

Nurses' occupational stress is a key contributor to high incidence of morbidity and mortality for nurses who work in the acute health care environment (Benfante et al., 2020; Hasan et al., 2018). The negative impact of workplace stress on nurses and the health care system was magnified during the recent COVID-19 pandemic, with mental health distress and burnout well documented (American Nurses Foundation, 2021). Nurses' increased stress correlates with poor health, decreased quality of patient care, and financial loss for health care institutions (Duffield et al., 2016; Roberts et al., 2012;

Vasconcelos et al., 2016). Strategies to buffer workplace stress are multifaceted, but self-care strategies and integrative therapies that reduce stress are effective recommendations according to the American Nurses Association. One such intervention, healing touch (HT), is a safe, low-cost, and effective biofield energy

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modality. Several studies reflect that the use of HT leads to a significant reduction of stress. In one study, 71 women undergoing breast biopsies who received HT treatments were found to have statistically significant drops in state and trait anxiety, for state anxiety $F(2, 142) = 10.94, p < .001$, which continued into the next day and for trait anxiety $F(2, 142) = 5.15, p < .007$ on the day following (Goldberg et al., 2016). An integrative review assessing the effects of biofield energy treatments such as HT and Reiki found these therapies increase relaxation, decrease stress and anxiety, and improve mood (Mangione et al., 2017). HT and Reiki are similar energy modalities.

HT works with energy fields that surround and permeate the body (Anderson et al., 2017a). Further, HT involves a practitioner administering a sequence of light touch on or above the body while focusing on compassion for the recipient. In the 1970s, a nurse, Janet Mentgen, developed HT techniques for practical use in nursing, based on ancient healing arts, utilizing the body's energy fields (Anderson et al., 2017b) which are described by Hippocrates as vitalism (Oxford Dictionary, 2015) and more recently in modern medicine (Brennan, 1987; Feinstein & Eden, 2008; Krieger, 2017). Energy healing appears as "chi" in ancient China in 2598 BCE (Lechti, 1998) and "prana" in the Hindu tradition. Yet, there is a paucity of research with robust design documenting HT administered to nurses for stress reduction and self-care. Indirect measurements of the effect of biofield energy are measured routinely in health care as vital signs.

Purpose

The purpose of this study was to explore the effect of HT on nurses' stress in clinical environments. The purpose of this study aligns with the American Holistic Nurses Association, (2018), the American Nurses Association, (2018), and the National Center for Complementary and Integrative Health (NCCIH, 2016) which recommend the use of holistic stress reduction strategies to relieve nurses' stress.

Background and Significance

Nursing Stress

The COVID-19 pandemic has intensified nurse stress in clinical environments (Benfante et al., 2020; Sovold et al., 2021). Studies indicate that stress on

nurses impacts their mental (Sampaio et al., 2020; Stelnicki, et al., 2020) and physical health (Shaukat et al., 2020). Among the studies reviewed, nurses were disproportionately affected (Shaukat et al., 2020). The evidence of negative impact of nurses' stress is grounded in robust historical research. A landmark study investigating mortality patterns of nurses found that nurses are more likely to die before the age of 65 years than other occupations in that same time period (Peipins et al., 1997). Studies in the same frame supported these findings (Ader et al., 1991; Aiken et al., 2001) and began correlating elevated levels of nurses' stress with mental illnesses such as depression, anxiety, and decreased well-being (Aikin et al., 2008; Li et al., 2022). Subsequent systematic and integrative reviews correlated nurses' elevated stress perception with nurses' physical and mental health resulting in poor quality of patient care and increased rates of nurse sick days and turnover, (Adams et al., 2019; Letvak et al., 2012) resulting in significant financial loss for health care institutions (Halter et al., 2017; Roberts et al., 2012). The National Institute of Occupational Safety and Health (NIOSH) in conjunction with the Centers for Disease Control (CDC) & Prevention began advocating for less stressful working conditions for health care workers (CDC, 2021; NIOSH, 2008). Since the COVID-19 pandemic numerous additional resources for health care workers' self-care appear on the CDC/NIOSH website (CDC, 2021). Recommendations for improving hospital environments and suggestions for nurses' self-regulation of diet and exercise in the early 2000s (CDC, 2021) did not reflect improvement in Nurses' perceptions of stress according to ANA survey results in 2001, 2011, and 2021 (ANA, 2011; ANA, 2021). The ANA recommendations for improving nurses' stress encourage holistic nursing strategies such as HT. The negative impact that COVID-19 is having on nurses' stress prompted the CDC and NIOSH to intensify their advocacy of nurses' self-care (CDC, 2021; NIOSH, 2021).

HT

There are few rigorous studies addressing HT as a holistic nursing modality and its effect on nurses' stress (Anderson & Taylor, 2011). In 2004, Wardell and Weymouth conducted a systematic review of HT literature. Results indicated improvements in stress, pain, anxiety, healing, and physiological markers, with recommendations for improving consistency and structure

of subsequent HT studies. Since 2004, more randomized controlled trials (RCTs) and quasi experimental studies appeared in the literature, establishing HT as a conduit to improved patient outcomes (Engebretson & Wardell, 2007; Goldberg et al., 2016). A systematic review of RCTs on energy treatments, including HT and similar modalities, found that two-thirds of the studies demonstrated statistically significant evidence of effect, however, not all of the studies had robust methodology (Hammerschlag et al., 2014). Quasi-experimental studies and RCTs consistently yielded positive effects for stress and/or anxiety reduction for adult and pediatric populations (Anderson et al., 2017). An integrative review found robust evidence for HT as a statistically significant mediator of stress and anxiety reduction (Mangione et al., 2017). More recent studies investigate Reiki, a similar energy modality, as an effective modality to reduce stress (Billot et al., 2019; McManus, 2017). A systematic review on the effectiveness of non-touch biofield interventions revealed positive effects and, as in earlier reviews suggest, there is a need for more robust studies (Matos et al., 2021).

HT and Nurses

A 2010 quasi-experimental and a 2017 qualitative study found that HT reduced nurses' stress as they administered HT (Tang et al., 2010). The qualitative study found that HT reduced stress for both nurse and HT recipient (Anderson et al., 2017) but none of the studies assessed nurses receiving HT as a self-care strategy for reducing occupational stress. More research is needed to determine the effectiveness of HT as a self-care strategy for acute care nurses' stress reduction and its qualitative potential for facilitating a less stressful work environment.

Significance

Research, past and present, supports the relationship between nurses' occupational stress and poor mental and physical health, and less than optimal well-being, for nurses, patients, and health care institutions (Aiken et al., 2001, 2002; Gershon et al., 2007; Gartner et al., 2010; Li et al., 2022; Vasconcelos et al., 2016; Vandenbroeck et al., 2017). Research also supports the relationship between HT and stress reduction for both those who give and receive the treatment (Tang et al., 2010; Anderson et al., 2017), yet there is a lack of

randomized studies exploring nurses use of HT during a work shift in an acute care hospital, to alleviate stress and promote nurses' self-care.

Theoretical Framework

The Science of the Unitary Human Being (SUHB) by Martha Rogers conceptualizes the human being as being greater than the sum of its parts, framing the human being as biofield energy (Rogers, 1986). This study investigates the indirect effect of biofield energy manipulation with HR on stress reduction, grounding it in Roger's theory.

Rogers views the interaction of human and environmental biofields as the source of a continuous evolutionary process spiraling forward in time. This continuous energetic interaction between the human being and the environment is the health determinant (Rogers, 1970; Rogers, 1986). Rogers' theory supports this study's hypothesis that energetic interactions of the independent variables: (HT or stress reduction education and deep breathing [DB]) affect human stress response (human biofield).

The underlying principle of HT asserts the positive intention and gentle hand movements of the HT practitioner balance and changes the recipient's biofield energy and decreases stress perception and physiological response measured as energy units (Rather & Johnson, 2014; Hammerschlag et al., 2015; Dossey & Keagan, 2016). The SUHB provides a framework for understanding the effect of biofield manipulation via HT on stress and health. According to nurse scholars, SUHB is the most appropriate theory to describe the underpinnings of HT (Fawcett, 2003; Dossey & Keagan, 2016).

Methods

Design

A cluster RCT study design with a brief exploratory descriptive component was employed. Randomization of the 16 matched pairs was done using the Research Randomizer application (Research Randomizer, 2020).

Sampling

One hundred and fifty nurses working in a (220 bed) pediatric tertiary care hospital in the southern United States were recruited and completed the study. There were no withdrawals from the study and all who consented completed the study. The

nurses were recruited from 16 randomized matched pair units resulting in 75 in the HT intervention group and 75 in the comparison group.

Nursing units were randomized to either the HT intervention or comparison intervention, DB. Study participants in the HT intervention group received a 4 to 7-minute HT session while participants in the DB comparison group sat quietly for the same amount of time, in the same setting, while reading information on stress management self-care and then DB. The number of participants ($n = 150$) exceeded the threshold for the recommended ($n = 128$) to achieve adequate power using the PASS 16 program for medium effect size, .70 power, and an alpha of .05, (Erdfelder et al., 1986) utilizing an intra-class correlation coefficient (ICC) of .145 (Thompson et al., 2012).

Setting

The study was conducted during a 12-hour day work shift, with nurse participants taking an approximate 15-minute approved break for participation in the study intervention. Nursing units included acute care, critical care, perioperative, and inpatient dialysis care. The setting for both the HT intervention and the comparison DB stress management intervention was a quiet room on or near the nursing unit. All participants in both groups sat in a chair during the intervention. The study took place June 2020 to September 2020 during the first and second community waves of COVID-19.

Measures

Demographic survey data was collected to determine age, gender, and years of work experience. Heart rate (HR), blood pressure (BP), and respiratory rate (RR) were used to measure physiological biofield energy. Vital signs were taken by the same researcher throughout the study. A hospital calibrated BP cuff was used to measure HR and BP. Visualization of breaths per minute was recorded by the same researcher using the same clock with a second hand.

The Visual Analog Scale for Stress (VASS) score was used to measure psychological biofield energy. The VASS is a 10-cm line with 1-cm increments between 0 and 10. Zero was the anchor for “no stress at all” and 10 anchored “the most stress ever experienced.” The VASS has been validated by Lessage et al., (2012), who included the

Psychological Scale for Stress (PSS-14) and the Hospital Anxiety and Depression (HADS) state anxiety scores when evaluating the VASS. They found a 7.0 measurement on the VASS identified as having the best sensitivity/specificity ratio (0.74 and 0.93), respectively. A Pearson correlation coefficient confirmed concept validity of the scale when compared with VASS and Hospital HADS subscale scores for anxiety, depression, and total scores with a Pearson's r of 0.66, 0.45, and 0.65, respectively, consistent with earlier acceptable findings for the VASS's clinical use (Lessage et al., 2012). Overall reliability and validity of the VASS is generally considered acceptable for assessing stress in a clinical environment (Hasson & Arnetz, 2005; Lessage & Berjot, 2011; Lessage et al., 2012).

Following the recording of the second set of vital signs, participants recorded their answers to three open-ended exploratory descriptive questions (Table 1). These were used to explore and identify the nurse participants' perceptions of the interventions and nurses' knowledge of HT and DB. Content analysis and thematic development were used to describe findings. The third set of vital signs and VASS scores were recorded 1–4 h after the second set of vital signs were recorded.

Procedure

After receiving Institutional Review Board (IRB) and all necessary hospital approvals, the nursing units were randomized to either HT intervention or DB comparison groups. The respective nursing unit managers were asked for permission to place flyers and directly approach the nurses on their unit to ask if they would like to participate in a stress

Table 1. Brief set of Exploratory Descriptive Questions

Question	Rationale/Knowledge deficit
1. Describe how you felt experiencing HT or DB?	Provides richer description of quantitative data.
2. Would you consider using this HT or DB technique for self-care?	Gives insight into nurses' perceptions regarding usefulness of interventions.
Why or why not?	Uncovers potential barriers.
3. Were you aware that HT/DB is within your nursing scope of practice?	Gives insight regarding understanding of practice scope.

Note: Questions are answered by participant's post-intervention. DB = deep breathing; HT = healing touch.

management study. At the time of recruitment, nurses were unaware of which treatment they would receive (HT or DB).

Prior to starting the intervention, all participants were given a color-coded data collection packet; HT intervention received pink paper packets and the comparison DB group received blue. Participants first completed demographic data and baseline HR, BP, RR, and VASS scores were collected. The researcher recorded vital signs in the packet and the participants were instructed to self-record their VASS score and turn the page over each time to blind the score from the researcher. This technique was followed for each of the three vital sign and VASS score recordings as well as for the answers to the exploratory descriptive questions.

Following collection of the baseline data, the 4 to 7-minute HT intervention or DB comparison intervention began with the participant seated in the quiet room. The HT intervention was administered by a Certified Healing Touch Practitioner (CHTP) using the “Noel’s Mind Clearing” technique found in the Healing Beyond Borders (HBB) HT program student handbook (Anderson et al., 2017). The DB comparison intervention was introduced with a paragraph of instructions given to the participant to read and then practice DB over the same 4 to 7-minute time. See Figure 1 for a map of the study protocol.

Following the completion of the second data entry, each participant answered the three brief exploratory descriptive questions. The first open-ended question asked participants to describe their experiences with either HT or DB, followed by two yes or no questions and comments to ascertain awareness of HT or DB use in nursing scope of practice and use for self-care (Table 1). The data collection packets were sealed in an envelope self-labeled by the study participants and was redistributed to them for the last data collection 1–4 h post-intervention, in the same setting as the intervention. After

completing the last vital signs and VASS score, envelopes were discarded, and the de-identified data collection packets were placed in a sealed box. The process was repeated until 150 nurses completed the study (Figure 1). At the completion of the study, the generalized estimating equation 1 (GEE1) analysis was performed. At no point in time was the participants’ VASS score identifiable to the investigator or CHTP other than as aggregate data for research findings’ dissemination. Participants received a small gift of stress relief hand-sanitizer and lotion when the data collection packet was completed.

Data Analysis

Quantitative. GEE1 was used to determine if there was a significant difference in change over time, between the HT intervention and DB comparison groups for both the physiological and psychological dependent variables (Fain, 2017; McDaniel et al., 2013). The GEE1 is used with cluster and repeated measures data. It involves a series of equations estimating parameters for clustered subjects to minimize bias (Huang et al., 2016). Mean comparisons were also conducted for the individual dependent variables with significant change noted in the GEE1.

Qualitative. The researcher transcribed the data from the study packets and recorded data in an EXCEL spreadsheet using a separate column for each question. Each question had a separate sub-column for HT and DB. Terms and expressions were copied onto an EXCEL spreadsheet where two researchers read and reread content to identify common terms to delineate themes, sub-themes, and an overarching theme. Questions two and three had a binary yes or no response that was summed.

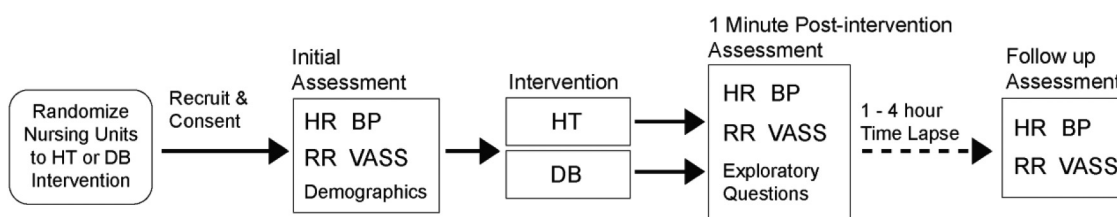


Figure 1. Procedural flowchart.

Note. BP = blood pressure; HR = heart rate; RR = respiratory rate; VASS = Visual Analog Scale for Stress.

Results

Demographics

Demographic data revealed a preponderance of female participants (*n* = 150). Age ranged from 22 to 62 years with a mean age of 36.99 and a mode of 24 years. The average years of nursing reported was 6.46 years with a mode of 1 year. These data reveled a sample mainly of younger nurses in their 20s with less than 10 years of experience (*n* = 114, 76%) (Table 2).

Quantitative Results

Quantitative results demonstrated a statistically significant improvement in stress reduction both physiologically and psychologically. The GEE1 comparisons found that nurses in the HT intervention had significantly lower VASS scores at posttreatment ($-0.95, p = .0002$) and at follow-up ($-0.73, p = .0144$) than the DB comparison group data.

Table 2. Demographic Data

Demographic	Range	Mean	Median	Mode
Age	22–62	36.99	28	24
Years of experience	<1–31	6.46	3	1
Gender				
F = 140	M = 10			
Demographic characteristics				
Characteristic	Frequencies	Percentage (%)		
Age in years				
22–29	84	56		
30–39	42	28		
40–49	12	8		
50–59	9	6		
60–62	3	2		
Gender				
Female	140	93		
Male	10	7		
Years of experience				
0–9	114	76		
10–19	20	13		
20–29	13	9		
30–31	3	2		

Note. Age and years of experience are measured in years, < 1 = less than 1 year of experience, F = female; M = male. All percentages are based on participant total (*n* = 150).

The RR differences were nearly significant at post-intervention and were significant at follow-up, (1.36, *p* = .0568 and $-2.28, p = .0011$, respectively), indicating improved stress levels among participants. It was also noted that VASS and RR scores also improved for the DB comparison intervention group at a non-significant level (Table 3).

Descriptive data shows the changes in mean and differences in mean change between HT and DB groups. While significant changes were reflected in the GEE 1 analysis for RR and VASS for the HT group only, it is notable that the mean changes in (SBP) between baseline and post-intervention and follow-up for the HT group ($-4.5472; -0.56$) and DB group ($-5.1066; -1.2266$). Difference in mean HR for the HT group decreased between baseline and post-intervention and follow-up ($-0.6533; -1.89$) while the DB group increased ($+0.2577; + 0.67$) (Table 4).

Qualitative Results

The exploratory descriptive component revealed an overarching theme of relaxation for nurses in both groups with a greater use of adjectives describing relaxation in the HT intervention group. This correlates to the quantitative findings that the HT group had a more statistically significant decrease in stress on the VASS immediately following the intervention and 1–4 h post-intervention.

Participants in the HT group made statements expressing extreme relaxation and lifting of stress during the HT intervention. Examples of participant statements and most common descriptors for each intervention group are summarized in Table 3. For the HT group, the most commonly occurring descriptive phrase was “Very relaxing,” implying a deep sense of relaxation. In contrast, the most common wording for the DB group was “relaxed, calmer” without the adverb ‘very.’ implying a relative state. The next most commonly occurring descriptors for the HT group was the sense that one was being lifted out of stress or having stress removed from their body, “as if stress floated away”, an almost out of body, passive experience, “like stress was being pulled from my brain,” and “soothing relief.” The DB group’s next most common descriptive phrases, “reduced tension,” “nice to step away,” and “hard to quiet my mind but did,” invoked a thinking process, implying that the participant was actively reorganizing their thoughts or focusing to relax themselves, an active state of

Table 3. Mean Differences in Change From Baseline Between Healing Touch (HT) and Deep Breathing (DB)

Dependent Variable	Posttreatment			Follow-up		
	Mean	P-value	Wald	Mean	P-value	Wald
Physiological						
SBP	0.56	.7332	0.3409	0.67	.3881	0.863
HR	-0.91	.2792	-0.0820	-1.23	.3828	-0.8727
RR	-1.36	.0568	-1.905	-2.28	** .0011	-3.2690
Psychological						
VASS	-0.95	***.0002	-3.728	-0.73	*.0144	-2.447

Note. DB = deep breathing; HR = heart rate; RR = respiratory rate; SBP = systolic blood pressure; VASS = Visual Analog Scale for Stress.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 4. Changes in Mean and Differences in Mean Change Between HT and DB Groups

Dependent variable	Mean at baseline	Mean at posttreatment	Change in mean	Mean at follow-up	Change in mean
SBP					
DB group	122.8933	117.7867	-5.1066	121.6667	-1.2266
HT group	125.6133	121.0667	-4.5472	125.0533	-0.56
Diff. in change			-0.5594		+0.667
HR					
DB group	76.8533	77.10667	+0.2577	76.18667	+0.67
HT group	76.08	75.42667	-0.6533	74.18667	-1.89
Diff. in change			+0.911		+2.56
RR					
DB group	17.4533	14.93333	-2.52	17.41333	-0.04
HT group	17.84	13.96	-3.88	15.52	-2.32
Diff. in change			-1.36		-2.28
VASS					
DB group	4.88	2.98667	-1.89	3.16	-1.72
HT group	5.43	2.58667	-2.84	3.00	-2.43
Diff. in change			-0.95		-0.71

Note. DB = deep breathing; HR = heart rate; HT = healing touch; RR = respiratory rate; SBP = systolic blood pressure; VASS = Visual Analog Scale for Stress.

decreasing one's stress. An overarching theme of "Stress Relief" emerged for both groups with the HT group having a more profound experience of stress relief (Figure 2).

Most nurses answered yes to question two, "would you consider using this HT or DB technique for self-care?" Nurses asserted they would use either intervention for self-care or for their patients ($n = 148$). Comments accompanying the two no answers revealed that participants did not feel there was adequate time in the shift to use either HT or DB for self-care. Question three asked if the participant was aware that HT and DB were within their scope of practice. Ninety

participants responded in the negative and 60 stated that they did know it was within their scope of practice.

There was a difference in negative comments based on group assignment. For the HT group, two participants stated they were skeptical, but both immediately began to feel relaxed. For the DB group, there were seven negative comments reporting an increase in anxiety, an inability to stop thinking, and becoming more stressed as they thought of unfinished tasks. One hundred and thirty-eight participants from both groups expressed a need for opportunities for stress relief and/or education on the use of both HT and DB exercises (Figure 3).

<i>Study Question One Responses of Common Phrase Meanings</i>		
Overarching Theme	<u>Stress Relief</u>	
	<u>HT</u>	<u>DB</u>
Phrases	Very Relaxed Sense of calm As if Stress floated away Like stress was being pulled from my brain Soothing relief	Relaxed Calmer Reduced tension Nice to step away Hard to quiet my mind but did
Note. HT = Healing Touch, DB = Deep Breathing		

Figure 2. Study question one responses of common phrase meanings.

Discussion

This randomized cluster trial found a statistically significant decrease in RR immediately post-intervention and at follow-up, representing improvement in physiological measurement of stress. Relief of stress is well supported in the literature review as a means for improving nurses’ health for decreasing incidence of medical errors and for improving the financial well-being for health care institutions (Jones, 2005; Milliken et al., 2007; Roberts et al., 2012; Roberts & Grubb, 2013). More recent studies have demonstrated that stress management in nurses decreases nurse sick days and nurse turnover rates which are recognized as costly for health care institutions (Magtiby et al., 2017; Vandenbroeck et al., 2017; Yang et al., 2017).

This study supports multiple other studies where HT and similar touch therapies have demonstrated significant stress relief for a variety of populations (Lu et al., 2016; MacLeod Dyess et al., 2018; Özcan Yüce & Taşcı, 2021; Roufail et al., 2018). This study supports the findings of stress relief by Foley-Hauslauden et al., (2016), who found significant reductions in postoperative patients’ pain, resulting in fewer narcotics after receiving HT, and reductions in patient anxiety. Also, two pediatric studies reported significant decreases in pain for a variety of disease states in pediatric patients receiving HT and similar energy modalities (Cotton et al., 2014; Wong et al., 2013). Both studies also noted reductions in patient stress.

In the qualitative portion of the study, the first exploratory question was “Describe how you felt experiencing HT or DB?” Nurses in this study described both the HT and DB intervention as relaxing with a subtle and constant difference in the quality of relaxation. HT intervention participants

specifically reported passive stress relief where participants felt stress was being lifted from their body. This is consistent with other qualitative studies where participants reported perceptions of HT giving them a sense of calm (Anderson et al., 2017). Earlier Tang et al., (2010) found that HT gave nurse leaders a sense of well-being whether they were giving or receiving it. Dossey and Keagan (2016) recognize HT as a valuable tool for nurses’ self-care, contributing to a less stressful environment at an U.S. east coast children’s hospital. In the qualitative portion of Running and Hildreth’s (2017) quasi-experiment participants noted HT as passively relieving their stress by taking away stressful thoughts as was found in this study.

In response to the second exploratory descriptive question, “Would you consider using this (HT or DB) for self-care?” both groups indicated they would like to use these interventions again to relieve stress. Participants expressed desire to have more stress relief interventions offered during a work-shift is consistent with the literature. Multiple studies concurred with the identified need to support the health and well-being of acute care nurses and other health care workers, patients, and health care institutions (Magtiby et al., 2017; Peregino, 2016; Roberts & Grubb, 2013; Vandenbroeck et al., 2017; Yang et al., 2017). Studies have proposed stress reduction workplace strategies to reduce nurses’ stress and improve productivity, and financial well-being of health care institutions (Magtiby et al., 2017; Roberts et al., 2016) and help stabilize the workforce (Yang et al., 2017). Multiple studies support the use of HT and similar biofield modalities for reducing workplace stress and improving well-being (Anderson et al., 2017; Dossey & Keagan, 2016; Runnings & Hildreth, 2017; Tang et al., 2010) supporting this study’s findings.

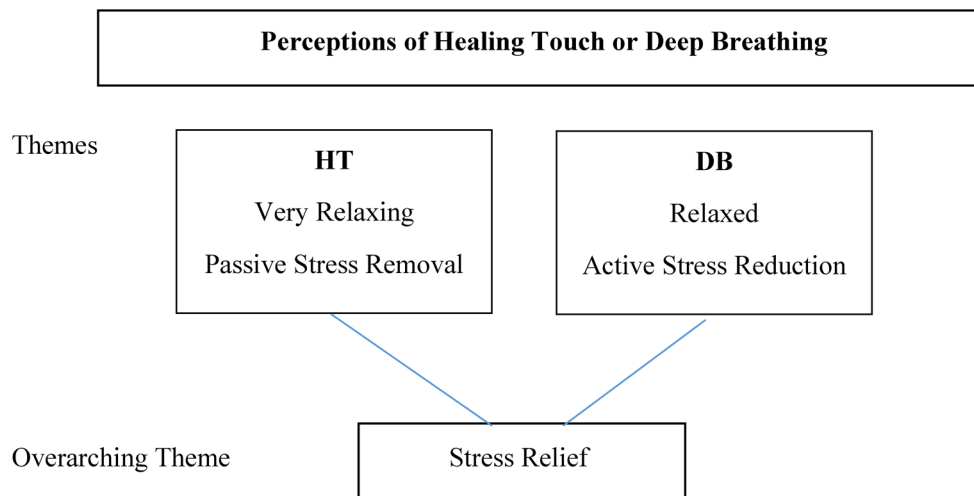


Figure 3. Thematic analysis of study question one.

The results of this study support the need for stress reduction strategies for nurses in the acute care workplace. This study's implications for reducing stress in nursing practice align with recommendations from key nursing and medical organizations (ANA, 2021; National Academy of Medicine [NAM], 2021). These initiatives reflect the recommendations suggested by this study. They include (1) assess workplace stress; (2) educate nurses on the implications of acute and chronic stress; (3) educate nurses on the use of effective complementary and integrative stress reduction strategies such as HT in health care institutions; and (4) provide opportunities during a workday to engage in stress-relieving activities (ANA, 2021).

This study supports systematic assessment and recognition of stress in the work environment and incorporation of stress management activities into nurses' workday routine in health care institutions. Nursing practice recommendations are supported by research, education, and policy recommendations that align with the NA and the American Holistic Nurses Association (AHNA) recommends decreasing nurse stress to improve the health and well-being of our nation's nurses through the use of complimentary and holistic integrative therapies such as HT (American Holistic Nurses Association [AHNA], 2018). The National Academy of Medicine (NAM) also includes in its vision for future nursing practice: "The importance of nurse well-being and resilience in ensuring the delivery of high-quality care and improving community health" (NAM, 2021, p.1).

Limitations

Four limitations were noted for this study. First, the Hawthorne Effect of Reactivity to Observation was controlled using more than one type of measurement, for the involuntary physiological stress response (HR, BP, and RR), as well as a subjective psychological stress response (VASS) and an attention-matched and content-related intervention were used in the comparison group. Second, potential prior RN bias regarding HT or DB could not be addressed, however, randomized cluster design helped alleviate potential bias created by posttreatment discussion between participants receiving different interventions. Third, short time frame between intervention and measurement was partially addressed by introducing an additional data assessment 1–4 h post-intervention to provide a small but significant opportunity for capturing long-lasting effects. Fourth, generalizability of sample to population is limited to acute care hospital settings. Randomization of units to intervention group improved generalizability of the study to other similar populations.

Recommendations for Practice and Research

Administrators and leaders of health care institutions employing acute care nurses are encouraged to implement programs designed to integrate stress reduction strategies within the workplace environment.

Programs to periodically assess stress and provide supportive interventions such as HT and DB are appropriate options and are low cost and effective. The cost of providing opportunities to decrease nurses' stress is minimal in contrast to the billions of dollars lost annually from nurses' stress (Roberts et al., 2013). HT programs have the potential for decreasing the incidence of illness and enhancing well-being in nurses, resulting in fewer incidence of medication errors, sick days, burnout, and staff turnover (Gershon et al., 2007; Halm, 2017) translating to improved financial well-being for health care institutions (Jones, 2005; Milliken et al., 2007; and Roberts et al., 2013; Roberts, et al., 2016). HT was more effective than DB for reducing nurses' stress during a work shift. HT is a relatively low cost and low time intensive intervention that could be easily established in health care institutions. Considering the well documented stressful impact the COVID 2021 pandemic has placed on nurses and health care workers (Croghan et al., 2021; Crowe et al., 2021; Stelnicki et al., 2020), it is imperative to begin implementing stress management strategies for all nurse in the workplace (Centers for Disease Control & Prevention, 2021). This study provides one successful strategy for nurse stress reduction, recognizing the many nuances and preferences necessary for effectively reducing nurses' stress moving forward.

Recommendations for future research include the need for more intervention research RCTs to determine effectiveness of stress reduction modalities (including HT and DB) for patients and nurses with the use of qualitative and mixed methods to enrich and inform quantitative studies. Additionally, there is a need to identify sources of workplace stress and effective workplace practices to reduce stress and to assess the effectiveness of development and implementation of stress reduction programs. Once effective strategies for nurse stress reduction are established, comparative effectiveness research strategies can be assessed for best practices.

Conclusion

Stress in clinical environments can lead to poor physical and mental health outcomes for nurses and patients, as well as fostering decreased financial well-being for health care institutions (Roberts et al., 2016). The COVID-19 pandemic has intensified nurses' stress and its sequelae (Stelnicki et al.,

2020) and results of this study support the use of HT and DB exercises for reducing nurses' stress while at work. These holistic strategies offer a low cost and effective means of addressing the immediate need for nurses' stress relief. Further studies regarding the use of HT are necessary to elucidate the broader scope of factors related to nurses' stress that are beyond the scope of this study.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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