

Feasibility and effect of chair massage offered to nurses during work hours on stress-related symptoms: A pilot study

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ABSTRACT

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This study assessed feasibility and effect of weekly, 15-min chair massages during work for 38 nurses. Mean Perceived Stress Scale-14 (PSS-14), Smith Anxiety Scale (SAS), linear analog self-assessment scale (LASA), and symptom visual analog scale (SX-VAS) scores were tracked at baseline, 5 weeks, and 10 weeks. Of 400 available massage appointments, 329 were used. At 10 weeks, mean PSS-14 score decreased from 17.85 to 14.92 ($P = .002$); mean SAS score, from 49.45 to 40.95 ($P < .001$). Mean LASA score increased from 42.39 to 44.84 ($P = .006$); mean SX-VAS score, from 65.03 to 74.47 ($P < .001$). Massages for nurses during work hours reduced stress-related symptoms.

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1. Introduction

The interest in and recognition of the physical and psychological impact of work-related stress on health care employees are growing.¹ Tension and stress have rapidly become common occupational hazards for nurses today. Nurses in our in-patient psychiatric unit work 12-h shifts. Several studies have shown that headaches, shoulder tension, insomnia, fatigue, and muscle and joint pain are often a part of nurses' work days.^{2,3} As these stress-related symptoms become chronic, they often lead to work days missed and can become precursors to physiological illness. In addition, stress has been linked to burnout,⁴ which is increasingly recognized as contributing to work dissatisfaction and absenteeism and may lead to nurses leaving hospital-based practices.^{2,5} Thus, untreated stress may be contributing to the ongoing shortage of nurses, and thus, measures to improve nurses' well-being are needed, both to improve quality of life for the employee and to aid employers in retaining nurses as integral, productive partners in patient care. Massage is a possible intervention that could help reduce stress experienced by nurses working in the hospital

environment. Several studies evaluating massage therapy at the workplace have been reported.^{1,6–11} These studies have looked at the usefulness of massage therapy in impacting stress symptoms. Massage therapy has been noted to decrease levels of anxiety and fatigue, which is essential to maintaining an employee's efficient care in a dynamic clinical environment. Most of the studies that evaluated massage in the workplace have used chair massage: it is easy to set up, does not need a great deal of space, and can be provided in semiprivate areas because the participant remains clothed. A 2006 report on a small study indicated that chair massage can be effective in reducing stress perception for nurses in a hospital setting, at least in the short term.¹² Katz et al¹³ reported some short-term positive effects on stress-related symptoms and concluded that further studies are indicated to examine the efficacy of workplace-based massage therapy programs.

The purpose of the present study was to assess the feasibility of chair massage provided during the work hours of nurses in inpatient and outpatient settings and its effect on stress-related symptoms.

2. Methods

This single-arm study was performed between October 15, 2010, and December 24, 2010, at Mayo Clinic. The study was approved by the Mayo Clinic Institutional Review Board and registered in the National Institutes of Health clinical trials registry as NCT01504763.

Abbreviations: LASA, linear analog self-assessment scale; PSS-14, Perceived Stress Scale-14; SAS, Smith Anxiety Scale; SX-VAS, symptom visual analog scale.

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2.1. Population studied

An invitational e-mail was sent to 203 nurses in an inpatient psychiatric unit and an outpatient pain rehabilitation unit who worked a 12- or 8-h shift. The first 40 respondents were enrolled; 2 were excluded because of missing enrollment data. Exclusion criteria included acute musculoskeletal symptoms; work restrictions; treatments for a malignancy; pregnancy; recent head, neck, shoulder, or back surgery; and current sinus infection, earache, or vascular migraine.

Participants were expected to use their regularly scheduled break or work with their coworkers to cover their workload during their massage break, or both, and to sign up on a centralized scheduling book.

2.2. Intervention

A 15-min chair massage once a week for 10 weeks was provided by 1 of 3 certified massage therapists available 3 days a week between 10:00 AM and 6:00 PM. A total of 400 massage appointments were available.

Three certified massage therapists with training in relaxation and stress relief performed the chair massages in a private room. Music was offered and used at the participant's preference. The participant remained clothed for the session, resting in a sitting, semikneeling position, leaning forward with torso and arms supported and the face resting in a face cradle. Before the start of each treatment, the therapist did a brief assessment of the participant's symptoms. The study was designed to allow the massage therapist to individualize the session techniques on the basis of each participant's request and symptoms identified. For example, if the priority symptom identified was stress, the therapist adjusted the techniques to affect the parasympathetic nervous system, such as gradually slowing the pace and providing light, slow compression or strokes. If the priority symptom identified was pain, tightness, or stiffness, compression and stretch techniques, joint mobilization, trigger-point pressure, or acupressure was used, depending on tissue response. The last few minutes of each session were focused on stimulating the nervous system to wake up and refresh so the participant was alert and ready to go back to work.

2.3. Instruments used

Linear analog self-assessment (LASA) scale,¹⁴ Perceived Stress Scale-14 (PSS-14), Smith Anxiety Scale (SAS), and symptom visual analog scale (SX-VAS) were used at baseline, 5 weeks, and 10 weeks.

The LASA scale is numbered 0 to 10 and was used to assess overall quality of life; overall mental, physical, emotional, and spiritual well-being; and level of social activity.

The PSS-14 is a 14-item, self-reported unidimensional instrument developed to measure perceived stress. Respondents report the prevalence of an item within the last month on a 5-point scale, ranging from never to very often. PSS-14 has reliability in test and retest, adequate internal consistency, and concurrent and predictive validity.¹⁵ Scores of the PSS-14 range from 0 to 56; the higher scores are indicative of more perceived stress. In the present study, these scores were calculated for each nurse.

The SAS is a 22-item self-report tool that differentiates between cognitive and somatic anxiety symptoms, which are similar to most stress symptoms.¹⁶ The final score is the sum of the scores of the 22 questions, and each question has a range from 1 ("strongly disagree") to 5 ("strongly agree"). This scale has been found to be sensitive to relaxation interventions.¹⁶

The SX-VAS scale is numbered 0 to 10 and was used to assess the current level of anxiety, relaxation, insomnia, alertness, fatigue,

tension/muscular discomfort, and pain; the frequency of headaches; and overall mood, energy level, and job satisfaction.

Participants were also given the opportunity to submit comments about their massage experience.

2.4. Statistical analysis

Mean and standard deviation of LASA, PSS-14, SAS, and SX-VAS scores were calculated at baseline, 5 weeks, and 10 weeks. Paired *t* test was used between any 2 time points. Generalized linear model analysis was used as an overall test. Two-sample *t* test was used to compare the difference of 2 time points between the sexes, inpatient and outpatient settings, and nurses working an 8-h shift vs a 12-h shift. A *P* value less than .05 was considered statistically significant.

3. Results

Forty nurses were recruited for this study, of whom 2 did not complete the baseline questionnaires and were excluded. The median age of the 38 participants (5 men and 33 women) was 47 years (range, 21–65 years). Six nurses worked a 12-h shift and 32 worked an 8-h shift; 22 worked in the inpatient setting and 16 in the outpatient setting. All participants completed the 4 instruments used at baseline, 5 weeks, and the end of the study (10 weeks). Of 400 available massage appointments, 329 were used (mean [SD], 8.66 [2.32]; range, 2–10 massages per person).

Stress- and anxiety-related symptoms for the entire study population improved, as shown in Fig. 1 and Table 1. The mean baseline LASA score increased from 42.39 to 44.54 ($P = .006$) at 5 weeks and from baseline to 44.84 ($P = .006$) at 10 weeks. The mean baseline PSS-14 score decreased from 17.85 to 15.29 ($P = .005$) at 5 weeks and from baseline to 14.92 ($P = .002$) at 10 weeks. The mean baseline SAS score decreased from 49.45 to 43.95 ($P = .001$) at 5 weeks and from baseline to 40.95 ($P < .001$) at 10 weeks. The mean baseline SX-VAS score increased from 65.03 to 71.27 ($P = .001$) at 5 weeks and from baseline to 74.47 ($P < .001$) at 10 weeks.

There was no significant difference between the sexes or between working in the inpatient setting and the outpatient setting. However, nurses working a 12-h shift reported significantly more benefit from massages between week 5 and week 10, as measured by LASA ($P = .004$) and SX-VAS ($P = .05$) (Table 2), than nurses working an 8-h shift.

Among the 38 nurses, 35 had positive comments about their chair massages in regard to better sleep and a reduction of pain,

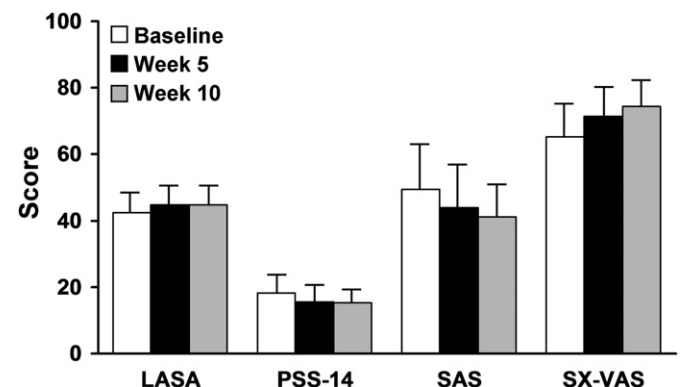


Fig. 1. Results of assessment scales used at baseline, 5 weeks, and 10 weeks of chair massage for relief of work-related stress in nurses. Linear analog self-assessment scale (LASA), Perceived Stress Scale-14 (PSS-14), Smith Anxiety Scale (SAS), and symptom visual analog scale (SX-VAS) were used to tabulate changes in quality of life among nurses working in inpatient psychiatric and outpatient pain rehabilitation units in response to massage therapy. Error bars show standard deviation.

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