An Observational Study of Massage in Women Veterans Attending a Women's Health Clinic

Allison Mitchinson, MPH BCTMB[1], Erika L. Trumble, MPH[1], Carol E. Fletcher, RN,PhD[1]

[1] Veterans Health Administration, U.S. Department of Veterans Affairs, Ann Arbor, MI USA

ABSTRACT

INTRODUCTION – Research has shown that massage can reduce pain and anxiety in post-surgical, palliative and cancer patients.[1-3] Gynecologic exams and procedures can be stressful and anxiety provoking. Massage may be effective in ameliorating pain and anxiety and increasing relaxation in women visiting a gynecology clinic.

OBJECTIVE – The purpose of this observational study was to examine the relationship between massage and wellbeing (pain, anxiety, shortness of breath, sense of relaxation, inner peace) in women veterans receiving care at a Women's Health clinic at a VA hospital.

METHODS –Women veterans were asked whether they would like a relaxation massage as part of their visit. Massages were scheduled for 60 minutes and given by licensed volunteer massage therapists. Effleurage massages were provided to the back, neck, hands/arms, legs/feet in a private space. Women rated their pain intensity, pain unpleasantness, anxiety, shortness of breath, relaxation and sense of peace pre and post massage on a 0-10 numeric rating scale. Demographics and data on chronic pain, opioid use and mental health diagnoses were abstracted from the medical record.

RESULTS - Results are based upon the first massage received by 96 unique individuals. Fifty three percent were 40 years old or younger, 63% were Caucasian, 32% married. Sixty four percent were scheduled for an invasive procedure, e.g. pelvic exam, biopsy. Seventy six percent had chronic pain, 53% had a diagnosis of depression. Mean scores for pain intensity decreased by 1.83 points, pain unpleasantness 1.99, and anxiety by 2.42 points. Relaxation increased by 4.17 points and sense of peace by 3.57.

CONCLUSION - Massage may help to reduce pain and anxiety in women veterans coming for a gynecologic health appointment. Further research should be done on the benefits of massage in this population.

BACKGROUND

The Department of Veteran Affairs is changing the way health care is conceptualized and delivered by implementing a holistic, whole person model of care known as Whole Health. Whole Health empowers the patient to take charge of their own health and incorporates the use of conventional medicine and Complementary and Integrative Heath (CIH) approaches such as massage therapy, yoga, acupuncture, tai chi, and meditation. As part of the Whole Health program at the VA Ann Arbor Healthcare System, a wellbeing program was developed and implemented beginning in 2017 to offer relaxation massages to female Veterans attending the Women's Health (WH) clinic. Volunteer massage therapists recruited from the community provided the massages. The WH clinic is a specialty clinic providing women with gynecologic care including inserting/removing intrauterine devices or implants, colposcopy and endometrial biopsy.

Women visiting a gynecology clinic often experience anxiety and pain related to invasive procedures and/or exams. Anxiety may occur from fear of a cancer diagnosis.[4] Research suggests that receiving massage therapy can impact pain and anxiety. Studies done by our study team have shown that effleurage massage can reduce pain and anxiety in post-surgical and palliative care populations but were conducted using predominately male veteran populations.[1,2]

METHODS

Veterans attending the WH clinic were called in advance by clinic staff and scheduled for sixty minute massage appointment slots either before or after their clinic appointment depending on therapist and slot availability. Therapists were instructed to provide relaxation massage using Swedish techniques with moderate pressure. Massages lasted between 30 and sixty minutes and were limited to the back, neck, head/face, arms, hand, legs.

To measure the response to massage, participants were given a form by the volunteer massage therapists before the massage and asked to rate symptoms on a 0-10 numeric rating scale. Symptoms included pain (intensity and unpleasantness), anxiety, shortness of breath, sense of relaxation and inner peace. After the massage the women were reminded to fill out the scales again as the therapist left the room. These data were included in the massage note as clinical outcomes and entered into the electronic medical record along with any comments provided by the veteran.

METHODS CONTINUED

This retrospective study was approved by the local IRB and permission was given to review the medical records of women participating in the WH massage program from October 1, 2017 to June 30, 2018. Data on symptom scores, demographics, history of chronic pain, mental health diagnoses, and opioid use were abstracted from the medical record by a nurse researcher (coauthor CF).

Means and medians were calculated for short-term changes in symptoms scores. Due to skewness seen in the short-term changes, significance was tested using a nonparametric sign test. Significance was adjusted using Bonferroni method to protect the overall type I error level at 5% from multiple testing. We also assessed for differences in symptom changes between 3 subgroups, 1) those with chronic pain versus without, 2) those with anxiety diagnosis vs those without, and 3) those with a PTSD diagnosis versus not using an unadjusted general linear model. Data were analyzed using SPSS.

RESULTS

Fifty-one women (53%) were aged 21-40, 32 (33%) were 41-60, and 13 (14%) were 61 or older. Sixty-five were Caucasian (68%), 19 (20%) African American, while 12 (12%) were other or racially unknown. Seventy-seven (80%) had had a previous massage. Thirty-three (34%) were married. Seven (7%) were currently on prescription opioids. Diagnostically 79 (76%) had chronic pain, 24 (23%) had migraine headaches, and 68 (65%) had one or more mental health diagnoses including 23 (22%) with PTSD, 55 (53%) with depression and 36 (35%) with anxiety. Prior to massage the mean score for pain intensity was 3.86, mean anxiety was 3.80. Mean scores for pain intensity decreased by 1.83 points, pain unpleasantness 1.99, anxiety by 2.42 points and shortness of breath by 0.68. Relaxation increased by 4.17 points and sense of peace by 3.57. All changes in symptoms were statistically significant (Table 2). Anxiety in women diagnosed with PTSD decreased by 3.57 points compared to 2.08 in those without PTSD (p=.004)

DISCUSSION & CONCLUSIONS

After receiving a relaxation massage, women veterans experienced decreased pain intensity, pain unpleasantness and anxiety while experiencing increased relaxation and feelings of inner peace. These changes parallel those seen in a palliative care population primarily composed of male veterans. However, the women experienced greater changes in relaxation and feelings of inner peace afterwards. This research suggests that massage therapy may be a useful treatment for women experiencing high rates of anxiety related to gynecologic procedures.

Most of the women in this population suffer from chronic pain and more than half were diagnosed with a mental health condition. Research has shown that women veterans have higher rates of chronic pain than their male counterparts.[5] In addition, women veterans with musculoskeletal conditions are more likely to carry a diagnosis of depression and anxiety compared to male veterans.[6] Further research is needed to study the effectiveness of massage therapy in treating pain and anxiety in women veterans with chronic pain and mental health conditions like PTSD. Furthermore, VA Whole Health programs should consider targeting women veterans for massage therapy services.

REFERENCES

1. Mitchinson AR, Kim HM, Rosenberg, J, Geisser M, Kirsh M., Cikrit D, Hinshaw D. Massage as adjuvant therapy in the management of acute postoperative pain: A randomized controlled trial. Arch Surg. 2007;142(2):1158-1167.
2. Mitchinson A, Fletcher CE, Kim HM, Montagnini M, Hinshaw DB. Integrating massage within the palliative care of Veterans with advanced illnesses: An outcome study. Am J Hosp Pall Med, 2014; 31(1):6-12.
3. Cassileth, B, and Vickers, A. Massage therapy for symptom control: outcome study at a major cancer center. J Pain & Symp. Manage 2004; 28(3): 244-249.
4. Galaal KA, Deane K, Sangal S, Lopes AD. Interventions for reducing anxiety in women undergoing colposcopy. Cochrance Database Syst Rev, 2007; Jul 18.
5. Haskell SG, Heapy A, Reid MC, Papas RK, Kerns RD. The prevalence and age-related characteristics of pain in a sample of women veterans receiving primary care. J Women's Health, 2006, 15(7):862-9.
6. Higgins DM, Fenton BT, Driscoll MA, et al. Gender differences in demographic and clinical correlates among veterans with musculoskeletal disorders. Women's Health Issues 27-4 (2017) 463–470.

"It really helps you feel better both mentally and physically."

Table 1: Patient Demographics and Diagnoses

Total N	**96**
Age (years)	**N** / **%**
21-40	51 / 53%
41-60	32 / 33%
61+	13 / 14%
Race	
Caucasian	65 / 68%
African American	19 / 20%
Other	5 / 5%
Refused to Answer/ Unknown	7 / 7%
Previous Massage (Yes)	77 / 80%
Opiate Use	
Current	7 / 7%
No	86 / 90%
Previously	3 / 3%
Chronic Pain Diagnosis	79 / 82%
Migraine Diagnosis	24 / 25%
Mental Health Diagnosis	68 / 71%
PTSD Diagnosis	23 / 24%
Depression Diagnosis	55 / 58%
Anxiety Diagnosis	36 / 38%
Type of Procedure Performed During Visit	
*One or more Invasive**	67 / 70%
*One of more Non-invasive***	6 / 6%
None	23 / 24%

*Invasive procedures include: pelvic exam, removal or insertion of IUD, removal or insertion of implant, I&D, biopsy & colposcopy.
**Non-invasive procedures include: groin exam, injections, & breast exams.

"This is the most relaxed I've been in a long time."

Table 2. Short-Term Change in Symptom Scores in all Patients After Massage

						95% CI of the mean	
Symptoms	N	Mean[a]	SD	Median[b]	IQR	Lower Limit	Upper Limit
Pain intensity	95	1.83	1.85	1	3	1.45	2.21
Pain unpleasantness	95	1.99	1.85	2	2	1.61	2.37
Anxiety	95	2.42	2.17	2	2	1.98	2.86
Shortness of breath	95	0.68	1.84	0	0	0.31	1.06
Relaxation	95	4.17	2.20	4	3	3.72	4.62
Inner Peace	93	3.57	2.05	3	3	3.15	3.99

Abbreviations: CI, confidence interval; IQR, interquartile range; SD, standard deviation.

[a]All changes are calculated so that large positive values correspond to large improvement in symptom.

Note: IQR is calculated as 75th percentile minus 25th percentile.

[b]For every symptom, a one-sided sign test for median change scores being greater than 0 gave a P value <.001; P value < .0083 corresponds to evidence for a significant short-term improvement, adjusting for multiple comparisons.

"I would like to see this service offered more often."

Table 3. Mean Short-Term Changes in Symptom Scores by Diagnosis of Chronic Pain, Anxiety & PTSD

	PAIN INTENSITY		PAIN UNPLEASANTNESS		ANXIETY[A]		SOB		RELAXATION		INNER PEACE	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
CHRONIC PAIN DIAGNOSIS												
Yes (N = 76)	1.87	1.75	2.13	1.85	2.44	2.21	0.74	1.88	4.08	2.32	3.74	2.08
No (N = 17)	1.65	2.29	1.35	1.73	2.35	2.03	0.41	1.70	4.59	1.50	2.82	1.74
ANXIETY DIAGNOSIS												
Yes (N = 36)	1.92	1.68	2.08	1.70	2.69	1.92	0.56	1.76	4.33	2.11	3.78	2.10
No (N = 56)	1.81	1.96	1.95	1.97	2.29	2.31	0.78	1.91	4.05	2.28	3.41	2.03
PTSD DIAGNOSIS												
Yes (N = 23)	1.65	1.75	1.91	1.73	3.57	2.17	1.26	2.20	4.57	2.31	3.39	2.06
No (N = 71)	1.92	1.89	2.04	1.89	2.08	2.05	0.51	1.70	4.03	2.18	3.61	2.06

Abbreviations: SD, standard deviation; PTSD, Post-Traumatic Stress Disorder; SOB, Shortness of Breath

[A]There were no significant differences in score changes between groups except for anxiety change in those with PTSD with a p-value of 0.004, adjusting for multiple comparisons.

"This is a fantastic service that works toward the wellness of the 'whole' person."