Evaluation of The Spurgeon Method® as a Manual Therapy Protocol to Improve Shoulder Range of Motion and Function for Postmastectomy Patients

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Study design: A single-group pretest–posttest interventional mixed-methods study with longitudinal follow-up.

Introduction: After breast cancer surgery, women often experience reduced range of motion in the shoulder and chronic pain that negatively affect mental and physical quality of life and ability to complete daily activities.

Purpose: To assess The Spurgeon Method® for improving shoulder range of motion and performance of activities of daily living in postmastectomy women.

Methods: Women recovering from breast cancer surgery were recruited from local oncology clinics, cancer centers, and breast cancer support groups. Participants had The Spurgeon Method® performed once a week for 6 weeks. This manual therapy involves a protocol to improve lymphatic drainage and address fascial restrictions in the muscles of the back, neck, shoulders, and chest. Before and after each session, shoulder abduction, external rotation, and flexion were measured. The Quick Disabilities of the Arm, Shoulder, and Hand (QuickDASH) questionnaire was used to assess perceived changes in ability to complete daily activities and pain. The range of motion and QuickDASH outcomes were compared between the first and last sessions.

Results: Thirty-three women participated in the study: mean (standard deviation) age = 54.1 (10.2) years, range 35–78 years. Participants demonstrated improved range of motion in all planes of motion (all $p < 0.03$). QuickDASH scores for perceived ability to complete daily activities and pain also improved from the first session to the last (both $p < 0.001$).

Conclusions: Results suggest The Spurgeon Method® improved the ability of women post mastectomy to complete activities of daily living with less pain and difficulty. Given this preliminary evidence, this supports the use of targeted techniques to address restrictions commonly experienced by patients after breast cancer surgery. Occupational and physical therapists, massage therapists, and other rehabilitative professionals should consider the use of this protocol to restore range of motion of the shoulder to improve the patient's quality of life.

KEYWORDS: Breast cancer; mastectomy; oncology rehabilitation; shoulder range of motion; manual therapy; occupational therapy; The Spurgeon Method®

INTRODUCTION

In 2025, the American Cancer Society predicted that there would be over 315,000 new cases of breast cancer in women in the United States.(1) Although advances in treatment and early detection have increased the 5-year survival rate of breast cancer to 90%,(1) many survivors experience long-term treatment effects, side effects that occur during and beyond treatment and late effects that occur after treatment ends.(2) For example, those with mastectomies or partial mastectomies may have reduced range of motion (ROM) in the

shoulder, loss of functionality or ability to perform activities of daily living, chronic pain, and increased risk of shoulder pathologies and lymphedema.[3]

Surgical procedures for the treatment of cancer would benefit from rehabilitation of the upper extremities. For example, a common side effect of mastectomies, sentinel lymph node biopsies, and axillary lymph node dissections is axillary web syndrome (AWS). This syndrome causes palpable cording in the axillary area, and its effects can extend distally from the medial arm to the antecubital space and then across the forearm to the base of the thumb. Often, these effects are palpable in the remaining breast tissue and abdominal wall.[4] In a study investigating 193 patients with AWS after breast cancer surgery,[4] 28.1% of women developed AWS, and 11.4% of those had reduced shoulder ROM. It has been observed that AWS usually develops 1–5 weeks after surgery, but can resolve within months.[5] But, AWS has been reported as a potential precursor for the development of lymphedema in the upper extremity of the affected side.[4] Swelling caused by the protein-rich lymph that has accumulated in the arm has also been shown to reduce ROM in the shoulder, affecting a patient's ability to perform activities of daily living.[6] In the profession of occupational therapy, activities of daily living include self-care tasks, such as bathing, dressing, grooming, oral hygiene, toileting, and sexual activity.[7] These symptoms can lead to cellulitis or lymphangitis, which may result in serious systemic infection.[6] The risk of developing lymphedema increases with time and is a lifelong concern for patients who have had breast cancer surgery.[6]

Given the pain associated with breast cancer surgery, patients may be reluctant to stretch or move the shoulder complex through the full ROM. Women aged 50–59 years who underwent breast cancer surgery have the highest prevalence rate of developing adhesive capsulitis, and subsequent breast reconstruction further increases this risk.[8] Adhesive capsulitis is a condition of the shoulder that involves inflammation of the joint capsule, which can lead to thickening of the surrounding tissue, which causes pain with movement of the shoulder. Unfortunately, these symptoms can persist for years if they are not treated.[9] Residual pain and lack of ROM may cause these patients to reduce or eliminate activities they once enjoyed, which can negatively affect activities of daily living. A study by Miedema et al.[10] used the Quick Disabilities of the Arm, Shoulder, and Hand (QuickDASH) questionnaire to evaluate the upper extremity function of women at 6 and 12 months after breast cancer surgery and found a reduction in activities that required full ROM of the shoulder or more force through the shoulder.[10] In total, 74% of participants reported some form of arm morbidity in the categories of pain, ROM restrictions, or lymphedema.[10] In another study, the pectoralis minor muscle was measured at intervals after breast cancer surgery. As the pectoralis minor shortened, the position of the scapula became internally rotated, and patients reported feeling chest tightness. This finding was correlated with reduced ROM and functionality in the shoulder.[11] Reduced ROM could also be explained by fascial restrictions and fibrosis of the connective tissue due to radiation or surgical intervention.[12] Fascial restrictions can include tightness or adhesions of fascia to surrounding tissues, which can limit ROM. Pain and decreased ROM of the shoulder in individuals who have undergone breast cancer surgery impact their ability to perform functional activities.[11]

Another negative effect of breast cancer surgery is pain. Often, chronic pain related to the side effects of surgery can persist for much longer than expected for routine surgical healing. A longitudinal study of post-surgical breast cancer patients reported a 55% rate of persistent pain after 6 months, and 23% of those participants rated their daily pain level as moderate to severe. Pain was reported in the chest wall area, axilla, shoulder, and arm. Moderate to severe pain was also reported by 31% of participants at 6–12 months after surgery, by 26% at 12–24 months after surgery, and by 15% at 24–48 months after surgery. The study also evaluated the interference of pain with activities. Sleep, enjoyment of life, mood, and work tasks had higher negative impacts from pain. Mental quality of life was also affected, and participants with higher pain ratings had higher levels of depression, anxiety, and stress.[13] Myofascial pain syndrome (MPS) has also been a recognized complication post breast cancer surgery.[14] MPS is regional pain in palpable taut bands of skeletal muscles that involve the fascia and can refer pain elsewhere. One study found that 44.8% of women who underwent unilateral surgery with axillary lymph node

dissection developed MPS upon a 1-year follow-up.[14]

There is an underutilization of cancer rehabilitation in breast cancer survivors.[15] Lower level of education is a risk factor for long-term effects of cancer including chronic pain, insomnia, and fear of recurrence.[2] Two meta-analyses found that pain education for cancer survivors and caregivers could decrease pain intensity, with one study indicating the educational interventions had a significant impact on the worst pain.[16,17] Studies have shown that manual therapy can decrease chronic musculoskeletal pain[18] and improve ROM and quality of life in female breast cancer survivors.[19,20] A systematic review found that massage therapy in breast cancer survivors with mastectomy encompassed a wide array of therapies including, but not limited to, complex decongestive therapy, myofascial release, stretching and strengthening exercises, manual massage, and other soft-tissue pain relief methods with different frequency, duration of sessions, and techniques. These interventions have enhanced upper limb mobility and yielded psychosocial benefits.[21] This demonstrates the importance of health-care providers to consider education of pain and referral for therapies to assist with long-term and late treatment effects.

Studies have investigated a variety of rehabilitative interventions, including exercise, stretching, manual therapy, lymphatic drainage, myofascial release, and scar massage, to reduce these negative effects, but results are variable and postmastectomy sequelae research is limited.[22] Few research studies have established an exact protocol that specifies the order of techniques, the repetitions for each technique, and the duration of treatment. To our knowledge, only The Spurgeon Method® consisting of massage and manual lymphatic drainage provides a specific protocol to address the morbidities associated with breast cancer surgery.[23] Clinically, it was found that this method was beneficial in reducing pain, increasing function, and improving ROM. Therefore, the purpose of the current study was to assess the use of The Spurgeon Method® of massage for improving shoulder ROM and self-reported performance of activities of daily living in postmastectomy women by implementing a study to measure outcomes of these patients.

While the study included postmastectomy patients and therefore these individuals had little to no remaining breast tissue, The Spurgeon Method® was never intended to act exclusively on glandular breast tissue. Instead, the method targets the muscles, fascia, and lymphatic structures of the upper thorax. The technique specifically includes massage of the pectoralis major and minor, serratus anterior, intercostals, and axillary region as these tissues are frequently impacted by surgery, radiation, and postural adaptations.

METHODS

Design

The current study used a longitudinal mixed-methods approach to evaluate the effectiveness of The Spurgeon Method® in postmastectomy women. Participants had The Spurgeon Method® treatment once a week for 6 weeks. Before and after each treatment session, shoulder abduction, external rotation, and flexion were measured for objective changes in ROM. The QuickDASH questionnaire was used to assess changes in the ability to complete daily activities and pain by comparing the level of perceived disability between the first and last sessions. After the last session, participants were asked to provide written qualitative comments about the experiences of The Spurgeon Method® to identify potential themes of impact from the treatment. The local institutional review board approved the study, and participants provided informed consent before participation in the study.

Participants

Study participants were recruited from local oncology clinics, cancer centers, and breast cancer support groups in the southern Nevada area. These locations were provided with flyers that advertised the study. To be included, participants had to be at least 3 weeks postmastectomy surgery to allow for healing of the incision site. Potential participants were excluded if they were currently undergoing chemotherapy or radiation treatments or if they had diagnosed shoulder pathologies with a recommendation of surgery, such as a torn rotator cuff. Individuals were not compen-

sated for their participation. Participants could withdraw from the study at any time.

All of the participants experienced some degree of loss of ROM. None of the participants had adhesive capsulitis, two had AWS, and two had scar adhesions. The first participant with AWS had a single mastectomy 3 years prior to study without reconstruction, received chemotherapy and radiation treatments, had 10 axillary lymph node dissections, and developed lymphedema on the affected side. The second participant with AWS had a double mastectomy with reconstruction with implants 1 year prior to study, did not receive chemotherapy or radiation treatments, had three sentinel lymph node biopsies, and did not develop lymphedema up to the time of the study. Both of the participants with scar adhesions had mastectomies without reconstruction with one participant having a double mastectomy and the other having a single mastectomy. Both received chemotherapy and radiation treatments and both had more than eight axillary lymph node dissections. The participants with AWS demonstrated over 50° loss of shoulder flexion ROM in the affected side at the beginning of the study. All of the participants with chronic pain or lymphedema also experienced reduced ROM.

If an individual were within the early post-surgical period, the technique would require explicit clearance from their surgeon or physician before initiating The Spurgeon Method®. In routine practice, this intervention is not performed until all surgical incisions are healed, which typically occurs at approximately 2 weeks post-operatively, although individual healing times may vary. The technique itself is not forceful in nature and differs from some forms of massage that apply deeper or more vigorous pressure. It is always adapted to the patient's presentation, with careful consideration of tissue integrity, comfort, and safety. These safeguards are intended to ensure that the intervention is both appropriate and beneficial at any stage of recovery.

Study Protocol

The manual therapy protocol of the current study involved The Spurgeon Method®, where soft-tissue mobilization is used to improve lymphatic drainage and fascial restrictions in the muscles of the back, neck, shoulders, and chest. The Spurgeon Method® encourages lymphatic flow through pumping, muscle release techniques, and loosening scar tissue with a protocol that specifies order, duration, and repetition.[23] Participants completed one treatment session of this method every week for 6 weeks at a health and wellness clinic. Each treatment session took approximately 40 min to complete. The Spurgeon Method® was developed by Sally Spurgeon, a breast cancer survivor and health-care professional with certifications in therapeutic massage and bodywork, medical massage, and complete decongestive therapy for lymphedema. Treatments were provided by one occupational therapy doctoral student who is also a licensed massage therapist and was trained and certified in the techniques of The Spurgeon Method®.

Before the first treatment session, demographic information about study participants was collected. Specifically, the primary investigator asked about age, type of mastectomy (bilateral, unilateral, or partial), time since surgery, type of reconstruction (none, implants, or expanders), symptoms of lymphedema (none, affected side, bilateral, or other), and any therapy that was completed after surgery (none, physical therapy, occupational therapy, massage therapy, or other).

Before and after each treatment session with The Spurgeon Method®, the primary investigator measured abduction, external rotation, and flexion in both shoulders in degrees with a universal goniometer. These ROM measurements were included in the study to evaluate mobility changes in the affected and unaffected upper extremities after manual therapy. The inter-rater and intra-rater reliability for the universal goniometer are moderate to excellent with intraclass correlation coefficient values ranging between 0.66 and 0.966.[24]

Before the first treatment session and after the last session, participants completed the QuickDASH questionnaire.[25] This assessment was included in the study to evaluate self-reported changes in the performance of daily activities and pain after manual therapy. The questionnaire contains 11 items to measure upper extremity physical function and symptoms, including pain, and uses a 5-point Likert scale. It has established validity for its concept-retention approach and construct validity with regard to pain, the ability to function, and the ability to work that were

similar to the full DASH. Test–retest reliability is also consistent with the DASH.[26]

The study procedure included a 40-min manual therapy session using The Spurgeon Method®, measurement of ROM, and the QuickDASH questionnaire if applicable for the visit, totaling approximately 1 h for each session. At the end of the 6 weeks, the primary investigator also asked participants to provide written comments about their experiences receiving The Spurgeon Method®. Participants were informed that providing these qualitative comments was voluntary.

Statistical Analysis

Demographic characteristics were summarized using frequency and percentage or mean and standard deviation (SD), as appropriate. ROM measurements in both shoulders (abduction, external rotation, and flexion) before and after each session and QuickDASH scores (total score and pain subscale score) before the first session and after the last session were summarized using mean and SD. We calculated the change between these outcomes from the first to last session as the mean difference and associated 95% confidence interval (CI). Shapiro–Wilk tests were used to verify that change scores met normality assumptions. Dependent samples *t*-tests were used to compare changes for ROM and QuickDASH outcomes only between the first and last of the six treatment sessions of The Spurgeon Method®. Effect sizes were calculated using Cohen's *d*. Data were analyzed using SPSS version 28 (IBM Corp., Armonk, NY), and significance was defined as $\alpha = 0.05$ (two-tailed). For analyses with multiple comparisons, we used a Bonferroni correction and an adjusted $\alpha = 0.004$.

To analyze qualitative comments about experiences with The Spurgeon Method®, three study investigators individually analyzed and coded comments. The investigators then met to discuss the coding. Using a collaborative process, common themes were identified, and all investigators agreed on their inclusion.

RESULTS

Thirty-three women were included in the current study, but three withdrew before completing all treatment sessions. Of the 30 participants included in our analysis, the mean (SD) age was 54.1 (10.2) years and ranged from 35 to 78 years. The mean (SD) time since their breast cancer surgery was 3.8 (3.3) years and ranged from 7 months to 15 years. The most common type was bilateral mastectomy (n = 23, 76.7%) (Table 1). More than half of the participants (n = 17, 56.7%) chose no reconstruction after their mastectomy and over a third (n = 11, 36.7%) had reconstruction with implants. One participant that had expanders had plans for an autologous reconstruction. More than half of the participants (n = 17, 56.7%) had no symptoms of lymphedema, while eight participants (26.7%) were diagnosed by their physician with lymphedema of the upper extremity on the affected side.

TABLE 1. Demographic Characteristics of Postmastectomy Women Participating in the Current Study (N = 30)

Demographic Characteristic	*N (%)*
Type of mastectomy	
Bilateral	23 (76.7)
Unilateral	3 (10.0)
Partial	4 (13.3)
Type of reconstruction	
None	17 (56.7)
Implants	11 (36.7)
Expanders with scheduled surgery	2 (6.7)
Type of lymphedema	
None	17 (56.7)
Affected side	8 (26.7)
Bilateral	3 (10.0)
Other[a]	2 (6.7)
Therapy completed post-surgery	
None	21 (70.0)
Physical therapy	3 (10.0)
Occupational therapy	0 (0)
Massage therapy	5 (16.7)
Other[b]	1 (3.3)

Percentages may not add to 100% because of rounding.

[a]Other affected areas were the trunk and axillary area.

[b]The other identified manual therapy was wall-walk exercises.

Twenty-one participants (70.0%) did not receive any information about therapy, five participants (16.7%) were referred to massage therapy, and none were referred to occupational therapy.

The participants were not asked specific details about their reconstruction surgeries, and there was no medical record review to determine these details at the time of the study. Of the 30 participants, 25 had axillary lymph node dissection and 4 had sentinel lymph node biopsies. Most of the participants could not recall how many lymph nodes were removed. The participants with symptoms of lymphedema had a single or double mastectomy with six out of eight having chemotherapy and radiation treatments on the affected side. One participant with symptoms of lymphedema did not have chemotherapy or radiation and one had only chemotherapy. Details regarding the stage of lymphedema or previous treatments and compression garment compliance were not recorded at the time of the study.

Quantitative Outcomes

ROM measurements in both shoulders before and after each treatment session are presented in Table 2. Mean differences in ROM in both shoulders before and after the first and last treatment sessions are presented in Table 2. Participants had

TABLE 2. Range of Motion in Both Shoulders Before and After Treatments with The Spurgeon Method®

Range of Motion	*Mean (SD)*		*Mean Difference (95% CI)*	*p-Value*[a]	*Cohen's d*
	Session 1	*Session 6*			
Abduction					
Left					
Before	144.9 (28.2)	172.0 (10.2)	27.1 (17.3–36.8)	<0.001	1.04
After	158.7 (19.4)	176.3 (6.8)	17.6 (11.4–23.9)	<0.001	1.05
Right					
Before	142.3 (21.9)	170.4 (10.3)	28.1 (20.4–35.9)	<0.001	1.36
After	158.2. (18.5)	176.1 (5.8)	17.9 (11.7–24.1)	<0.001	1.08
External rotation					
Left					
Before	76.7 (16.1)	83.9 (10.6)	7.2 (2.1–12.3)	0.007	0.53
After	82.6 (15.1)	87.6 (5.9)	5.0 (0.5–9.5)	0.03	0.41
Right					
Before	77.0 (17.1)	86.5 (8.8)	9.5 (5.1–13.9)	<0.001	0.80
After	83.7 (14.6)	87.7 (6.3)	4.1 (0.7–7.4)	0.02	0.46
Flexion					
Left					
Before	148.4 (16.5)	162.0 (12.1)	13.5 (8.1–19.0)	<0.001	0.93
After	153.8 (11.0)	165.5 (11.2)	11.7 (7.3–16.1)	<0.001	0.99
Right					
Before	145.0 (14.5)	161.4 (12.3)	16.4 (11.6–21.1)	<0.001	1.29
After	153.3 (13.3)	165.9 (12.0)	12.6 (9.1–16.0)	<0.001	1.37

[a]p-Values were calculated using a Bonferroni correction and adjusted to a significance level of p = 0.004.

CI = confidence interval; SD = standard deviation.

improved ROM in shoulder abduction, external rotation, and flexion in both shoulders (all $p < 0.03$). For abduction, the mean (SD) ROM was 144.9° (28.2°) in the left shoulder and 142.3° (21.9°) in the right shoulder before the first session. After the last session, it was 176.3° (6.8°) in the left shoulder and 176.1° (5.8°) in the right shoulder. For external rotation, the ROM was 76.7° (16.1°) in the left shoulder and 77.0° (17.1°) in the right shoulder before the first session. After the last session, it was 87.6° (5.9°) in the left shoulder and 87.7° (6.3°) in the right shoulder. For flexion, the ROM was 148.4° (16.5°) in the left shoulder and 145.0° (14.5°) in the right shoulder before the first session. After the last session, it was 165.5° (11.2°) in the left shoulder and 165.9° (12.0°) in the right shoulder.

The mean (SD) QuickDASH scores were 32.6 (19.7) before the first session and 13.3 (13.2) after the last session; the mean (95% CI) change score was −19.32 (−24.2 to −14.4, $p < 0.001$, Cohen's $d = -1.5$). The QuickDASH pain scores were 2.8 (1.1) before the first session and 1.5 (0.7) after the last session; mean change score was −1.37 (−1.7 to −1.0, $p < 0.001$, Cohen's $d = -1.5$).

Qualitative Outcomes

Fifteen (50.0%) participants provided written comments about their experiences with The Spurgeon Method®. The most commonly identified themes were the benefits of The Spurgeon Method® (29 comments) and ROM (23 comments). Other identified topics included functionality (11 comments), tightness (10 comments), pain (6 comments), and not being previously informed about side effects after breast cancer surgery (6 comments).

A selection of written comments is provided in Table 3. Many comments related to the benefits of The Spurgeon Method® highlighted better quality of life and sleep. One participant wrote, "It has made a drastic difference for me. You made my world a better place." Another said, "I get a good night's sleep." Regarding ROM, one participant wrote, "Once I started this therapy, I noticed a huge difference in movement." Another indicated that the increased ROM allowed them to "sleep with my arms under my pillow above my head." Similarly, participants reported changes in functionality and improvements in daily activities. One participant stated "I'm now able to reach higher for items in my home." Others highlighted that better functionality allowed them to regain their independence. For example, one wrote, "Being able to complete normal daily tasks has helped me gain my independence."

Comments related to identified topics of tightness, pain, and not being previously informed about side effects after breast cancer surgery tended to stress negative experiences before participation in the study (Table 3). Before the study, one participant "was experiencing tightness in my chest area and under my right arm area" and "was unable to take a really deep breath because of the tightness in my chest." Regarding pain, another participant wrote, "My underarm and chest area is starting to build scar tissue. It hurts to move it. It hurts to sleep on it. It hurts to stretch it." Participants also expressed a general frustration about the lack of information regarding manual therapy rehabilitation options and recovery expectations after breast cancer surgery. One participant wrote, "Post mastectomy there was no physical therapy. In fact, not one doctor mentioned how to relieve the pain or movement restrictions that I was suffering with."

DISCUSSION

Participants demonstrated statistically significant improvements in shoulder abduction, external rotation, and flexion in bilateral shoulders after 6 weeks of sessions using The Spurgeon Method®. Statistically significant improvements were also observed in QuickDASH functional activity and pain scores between the first and last sessions, indicating a reduction in perceived disability and pain following treatment. Qualitative comments by participants supported these quantitative findings. Overall, these findings support the feasibility of using The Spurgeon Method® of manual therapy to improve ROM, improve self-reported performance of activities of daily living, and decrease pain in patients recovering from breast cancer surgery. For patients receiving rehabilitative care by occupational therapists, physical therapists, massage therapists, and other rehabilitative professionals, The Spurgeon Method® could be introduced early in the treatment plan to reduce fascial restrictions and muscle tightness, increase ROM, reduce pain, and possibly improve

TABLE 3 (Part 1 of 2). Participant Themes and Comments on Experiences with The Spurgeon Method® in the Current Study

Identified Theme	*Example Comments*
Benefits of The Spurgeon Method® (29 written comments)	"Release tension and stretch the breast [chest] muscles." "I believe that the breast massage will benefit others who happen to have breast problems." "I believe this technique could be a game changer for all who suffer from the side effects of a mastectomy." "I have an increased amount of healing.... With each week of therapy, I began to see a difference." "I feel my posture has improved tremendously." "I'm able to breathe deeper and take in more air when I practice deep breathing." "It has made a drastic difference for me. You made my world a better place." "Having therapy for the last 6 weeks has not only given me my strength and mobility back, but it has brought so much joy back into my life, a sense of accomplishment, and pride." "After every therapy session, I walked out feeling refreshed and relaxed. I felt myself getting stronger physically and mentally. This has been an amazing 6 weeks, and it has improved my life dramatically." "I think this procedure is extremely beneficial." "When I work out at the gym, I have more strength in my chest muscles." "I feel that the movement of my scar tissue has helped my skin to reattach to my body correctly and more evenly." "I was less congested, too. I could breathe better after sessions." "In the past 6 weeks, the scar tissue has softened up. My chest, back, arm, and neck areas have loosened up to where I'm beginning to feel normal again. My deep breaths are much better." "I get a good night's sleep." "I wake up feeling not as in pain as I was in before therapy."
Range of motion (23 written comments)	"I noticed a huge difference in movement." "My range of motion has increased." "I can even turn my neck from side to side without any issues." "I have achieved greater flexibility, and I have improved my range of motion." "I sleep with my arms under my pillow above my head; my range of motion is much greater." "I didn't realize the effect of range of motion until I started getting measured every week." "I can now reach further out to the side and over my head." "When I started, I felt like I wasn't the best candidate because I had good range of motion, but when I was asked to stop moving my arm when I felt pain, I was surprised at the deficit I had and didn't realize how much the pain was limiting my life and decisions to be active."
Functionality (11 written comments)	"I'm now able to reach higher for items in my home." "I'm able to pick up my children without pain and discomfort in my arms and chest." "Things I had to depend on others to do for me I can now do myself." "I feel I would be much stiffer and unable to accomplish even normal tasks if not for the treatments I have been receiving." "A lot less pain when I reach for things above my head." "Being able to complete normal daily tasks has helped me gain my independence." "I can do more of the things I love, which require lifting, stretching, and more." "I can now reach items on the top shelf in my kitchen cabinet, where before I couldn't quite reach the shelf." "I can carry things in both arms that I couldn't do before." "It has taken some of the stress of 'what did cancer do to me' off and helps me remember what I can do." "Confidence to do things without pain."

TABLE 3. Participant Themes and Comments on Experiences with The Spurgeon Method® in the Current Study

Identified Theme	*Example Comments*
Tightness (10 written comments)	"Suffering with tightness, like a rope squeezing the chest with spasms.... Once I started this therapy, I noticed a huge difference in movement, and the tightness in the chest was not an issue." "I'm now able to stretch my arms higher and wider without feeling like ligaments and tissue are being pulled from within." "The tightness I used to feel in my chest every morning that I woke up is completely gone."
Pain (6 written comments)	"Pain in my neck has decreased." "I experienced excruciating pain in my neck and shoulder. After one treatment, I felt tremendous relief." "I have less pain."
Not previously informed about side effects after breast cancer surgery (6 written comments)	"Postmastectomy, there was no physical therapy. In fact, not one doctor mentioned how to relieve the pain or movement restrictions that I was suffering with." "If this was a postsurgery for a shoulder, you would get physical therapy to get the movement back." "The treatment was not as uncomfortable as I thought it might be." "There are [sic] a lot of things people don't tell you about.... My ability to sleep comfortably is a thing of the past. It hurts to move. It hurts to sleep on it. It hurts to stretch it." "I was not informed nor did I know about the benefits of this treatment to help with range recovery." "It is more common than I realized to have these side effects after mastectomy and lymph removal."

Fifteen of the 30 study participants provided written comments. The comments have been edited slightly for clarity.

the ability to perform activities of daily living. However, additional studies, such as randomized control trials, are needed to verify our results.

In the current study, participants presented with positive improvements in ROM measurements during each treatment session and between the first and last session. They demonstrated improved ROM after each session, but typically lost some of that progress before the next session. With each subsequent treatment session, this regression between sessions lessened, leading to improved retention in ROM over time. However, there was still difficulty achieving the full ROM of 180° for shoulder flexion and abduction for most participants. After the last session, the ROM was on average 166° for shoulder flexion in both shoulders, 176° for shoulder abduction, and 88° for external rotation (full ROM is 90°) in both shoulders. This difference may be attributable to the increased amount of stretch needed in the pectoralis major muscle for full ROM in flexion. After radiation treatments, the skin and underlying tissues lose some elasticity, which may affect the ability of the pectoralis major to fully stretch in flexion. However, we did not evaluate potential correlations between reduced ROM and radiation treatment, nor did the authors inquire with participants about whether their pectoralis major muscle was surgically impacted. Future studies should consider investigating the effects of postmastectomy treatment on ROM outcomes.

The physical and mental recovery from breast cancer is different for each patient. Therefore, manual therapy professionals treating this population should be prepared to assist these patients with appropriate manual therapy techniques, but also possess psychosocial skills to address their mental health. Cancer can lead to a higher chance of psychiatric disorders, such as depression, anxiety, and adjustment disorders, with a study finding high anxiety or depression prevalent in 40% of patients with breast cancer.[26] Not only can diagnosis lead to these impacts, but the adverse effects of the therapies, such as loss of energy, fatigue, pain, etc., can impair functions of daily living and lead to a psychological toll.[27] A study identi-

fied quality-of-life concerns, including physical symptom burden and disrupted daily activities as one of the themes when having 44 women with metastatic breast cancer write essays about their thoughts and feelings regarding their illness, indicating the importance of being able to address these issues with patients facing breast cancer.[28] As treatment progresses, patients may become accustomed to chronic pain and loss of range of ROM, eventually requesting assistance from family members or developing adaptive strategies to complete activities of daily living. In the current study, during the first two treatment sessions, study investigators discussed the measured ROM gains with participants. To maintain those improvements, investigators also stressed the importance of attempting to perform functional activities independently before modifying the activity or asking for assistance. Because most participants had used compensatory techniques for an extended period, some participants were surprised at how much activity they could perform within a pain-free ROM after treatment with The Spurgeon Method®. Qualitative comments support these positive outcomes and highlight the daily side effects experienced by these patients after breast cancer surgery. Our results suggest treatment with The Spurgeon Method® can lead to better quality of life.

There is an underutilization of cancer rehabilitation in breast cancer survivors.[15] Patients who have had breast cancer surgery need more information about rehabilitation options, lymphedema symptoms and risks, and expectations of recovery. However, there is a lack of knowledge about cancer rehabilitation, limited access to services, and suboptimal adherence.[14] Knowledge and early treatment can help reduce symptoms of post-surgical sequelae and make them more manageable.[29]

To evaluate patient education in relation to treatment recommendations after breast cancer surgery, we asked participants whether any type of manual therapy had been mentioned during their cancer treatment. More than two-thirds did not receive any information about manual therapy for addressing side effects of cancer treatment. Of those who did receive information about manual therapy, one participant received wall-walk exercises, three were referred to physical therapy, and five were referred to massage therapy. None were referred to occupational therapy. The reported lack of information may be attributed to our study setting. Our participants were recruited from the same local area, which has a limited number of oncologists who may be unaware of therapy options for their patients. This study's finding of reduced access to rehabilitation services post mastectomy is supported by similar results in other areas of health care. For example, women are often undertreated for pain, are more likely to live with a disability longer without receiving rehabilitation services than men, and are less likely to receive a referral for and complete cardiac rehabilitation.[30-32] Therefore, to achieve the best therapy outcome for these patients, a proactive approach is necessary to educate medical professionals in the community about how manual therapy can be used to alleviate chronic side effects associated with breast cancer surgery. This education should also include descriptions of the benefits of the various manual therapy options. For example, medical professionals could refer patients to occupational therapy to improve daily functioning and quality of life after breast cancer surgery.

The current study had a few limitations. Although our results showed statistically significant improvements in shoulder ROM and in QuickDASH scores, applicability of these findings may be limited by the short duration of the study. For example, 6 weeks of treatment sessions once a week may be inadequate to address more severe upper extremity conditions, such as adhesive capsulitis, AWS, or scar adhesions, and to demonstrate long-term efficacy. In general, these types of conditions require additional treatment sessions or more manual therapy techniques to fully restore ROM. The participants were recruited from a single region in coordination with local oncologists, cancer centers, and breast cancer support groups. As such, our findings and results may not be generalizable to other populations or settings. Similarly, our study only included postmastectomy women, so findings may not apply to postmastectomy men or to other populations after similar upper extremity surgeries. It is unknown whether measured changes are the result of our intervention or due to the passage of time. Additionally, the primary

investigator performed the treatment and completed the goniometric assessments, which have the potential for bias. Future longitudinal studies should be conducted with larger patient populations and with a control group to determine the effects of The Spurgeon Method® over time compared to current post-surgical practices.

CONCLUSION

The current study evaluated the effects of using The Spurgeon Method® in postmastectomy women on ROM of upper extremities and perceived performance on activities of daily living. Additional research with an appropriate control group should be conducted to obtain additional evidence about the effectiveness of our protocol. Future studies could also compare The Spurgeon Method® to other manual therapy methods, such as stretching, and exercise programs. Outcomes of such comparisons may be beneficial for developing effective treatment plans that address the side effects and pathologies associated with breast cancer treatment. With the 5-year survival rate for breast cancer at 90%,[1] cancer survivors need an evidence-based therapy option to recover from breast cancer surgery and the side effects of treatment.

Results of the current study suggest that The Spurgeon Method® significantly improved shoulder ROM in women after mastectomy. Additionally, there were significant differences for the QuickDASH functional activity and pain scores between the first and last treatment sessions. Our results also suggest that many patients received little education about manual therapy treatment options after breast cancer surgery and few were referred to manual therapy. Because these patients often experience pain and decreased ROM and functionality after surgery, postmastectomy women would likely benefit from treatments, such as The Spurgeon Method® and referrals to occupational therapy, physical therapy, massage therapy, or to other rehabilitative professionals. Overall, our preliminary findings support the use of targeted techniques to address restrictions commonly experienced by patients after breast cancer surgery. However, more training and research on manual therapy treatment options are necessary.

CONFLICTS OF INTEREST

The authors report the following conflicts of interest: Sally Spurgeon (the fifth author) is the owner of Therapie, a massage therapy clinic that specializes in postmastectomy massage. Ms. Spurgeon developed The Spurgeon Method technique for postmastectomy massage and teaches courses on the performance of this protocol. At the time this study was conducted, Cynthia Veazey (the first author), a licensed massage therapist and a Doctor of Occupational Therapy student, provided treatment to clients at The Caring Place at Nevada Childhood Cancer Foundation and did not receive payment for these treatments.

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