

## RELIEF OF RESIDUAL LIMB PAIN WITH MASSAGE THERAPY: A CASE STUDY

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### ABSTRACT

Limb loss is a life challenging experience and required a holistic approach to restore patients physically, psychologically, emotionally and spiritually. One of the common horrible experiences among amputees is residual limb pain. Massage therapy has been shown to benefit people who have had amputation surgery, managing chronic pain, enhancing performance, alleviating depression, and improving quality of life. This case study was to assess the effectiveness of massage therapy in the relief of residual limb pain. A total of Nine (9) amputees were involved in this study. These patients are the amputees who were currently experiencing different levels of residual limb pain. Patients were given adequate information regarding how to express their pain levels using the scale of 1-4, 0 indicating no pain, 1 indicating mild pain, 2 indicating moderate pain, 3 indicating severe pain, 4 indicating excruciating pain. Each patient's pain levels were assessed with this scale.

Massage therapy was initiated for 15 minutes for seven days. Their pain levels of participants were assessed based on their perceived change in pain levels on the same scale. Before the application of the massage therapy, 7 patients reported severe pain in the residual limb while the remaining 2 patients reported moderate pain. After a period of seven days application of massage therapy, their pain levels were assessed using the same scale. 3 participants graded their pain level as 1 indicating mild pain while the other 6 patients graded their pain levels as 0 indicating no pain. Further massage therapy was given, for two days, to the two patients who reported mild pain after the initial massage therapy. Their pain level was assessed after the therapy; the two patients reported no pain. This case study has shown that the massage therapy can be an important measure to manage residual limb pain among amputated patients.

**KEYWORDS:** Massage Therapy, Residual Limb, Pain, Amputee

### INTRODUCTION

Residual limb pain is the pain experienced at the distal end of affected limb that remains after amputation. The causes of residual limb pain are numerous, such as: tissue damage during surgery, mechanical factors such as poor prosthetic fit, an unprotected neuroma, rubbing of the skin and joint dysfunctions. Additional factors which may contribute to or be the source of the residual limb pain are referred pain from tight muscles (i.e. trigger points), muscle spasms, adhered scars, poor circulation and swelling. As noted, soft tissues and muscles that are tight, restricted or dysfunctional can be effectively treated with massage therapy, thus providing pain relief to the amputee client.<sup>[1]</sup> Highly effective pain management has been one of the key areas where nursing profession has been relevant. Massage therapy is not just for relaxation purposes alone, it can also be beneficial for relief from pain.

Many describe massage therapy as a specific technique while others describe it as a general category of massage and many methods such as deep tissue massage, myo-fascial release and trigger point therapy as well as osteopathic

techniques, and many more can be used to work with various medical conditions. Massage was first discovered as a complementary therapy in China and later in India and Egypt<sup>[2]</sup>. Massage can be applied to single or multiple body parts or to the entire body on single or multiple occasions. Many researchers have developed strong interest in assessing its effectiveness in pain management, and most studies have shown improvement in pain outcomes<sup>[3][4][5][6]</sup>.

A study conducted by Cuts hall and colleague showed a significant reduction in pain, anxiety and tension levels among cardiac surgical patient after massage<sup>[7]</sup>. Le Blanc-Louvry and his team conducted a research on effectiveness of massage therapy and found out that there was a decrease in post-operative pain and ileus after mechanical massage of the abdominal wall<sup>[8]</sup>. So many other studies in true experimental and quasi experimental designs have shown a positive effectiveness of massage on pain levels<sup>[9][10][11][12]</sup>. The effects of massage on residual limb pain level has not really been explored among health providers.

Research indicates that massage can reduce pain and pain intensity in patients with metastatic bone pain on an immediate, intermediate and long term time frame.<sup>[13]</sup> Massage can reduce the incidence and frequency associated with headache pain.<sup>14</sup> Massage relieves postoperative pain.<sup>[15], [16],[17], [18],[19],[20]</sup> Massage reduced back and leg pain in pregnant women.<sup>[21]</sup> Massage decreased pain, distress, tension, and anxiety in children and adolescents with chronic pain.<sup>[22]</sup> Massage is recommended for children with cancer and “growing pains”.<sup>[23], [24]</sup> Massage relieves chronic pain, chronic pain of moderate to severe intensity and those with myalgia.<sup>[25], [26], [27]</sup>

Massage reduces pain and improved the quality of life for adult cancer patients.<sup>[28], [29]</sup> Massage improves subjective perception of and function for those with Carpel Tunnel Syndrome.<sup>[30]</sup> These studies have utilized both experimental and quasi-experimental to explore their findings. None of these researches were conducted to assess the effectiveness of massage therapy on residual limb pain. Hence the need to assess how effective massage therapy would be in the relief of residual limb pain.

## METHODOLOGY

This is a case study on the effectiveness of massage therapy on the relief of residual limb pain among amputees. A total of 9amputated patients, who were currently experiencing pain from the residual limb, were involved in this study. Due consent was gained from the patient after extensive explanation was made.

## PROCEDURE

The demographic data of patients, such as age, gender, reasons for amputation, were collected. Patients were given adequate information regarding how to express their pain levels using the scale of 1-4, 0 indicating no pain, 1 indicating mild pain, 2 indicating moderate pain, 3 indicating severe pain, 4 indicating excruciating pain. Each patient's pain levels were assessed with this scale. Massage therapy was initiated for 15 minutes for seven days. Their pain levels of participants were assessed based on their perceived change in pain levels on a scale of 0-4, 0 indicating no pain, 1 indicating mild pain, 2 indicating moderate pain, 3 indicating severe pain, 4 indicating excruciating chest pain.

## RESULTS

Before the application of the massage therapy, 7 patients reported severe pain in the residual limb while the remaining 2 patients reported moderate pain. After a period of seven days application of massage therapy, their pain levels

were assessed using the same scale. 3 participants graded their pain level as 1 indicating mild pain while the other 6 patients graded their pain levels as 0 indicating no pain. Further massage therapy was given, for two days, to the two patients who reported mild pain after the initial massage therapy. Their pain level was assessed after the therapy, the two patients reported no pain.

## DISCUSSIONS

Massage therapy has been advocated for long in healthcare. This case study has shown that the massage therapy can be an important measure to manage residual limb pain among amputated patients. A growing body of research shows massage therapy can be an effective part of pain relief and management. Several studies have proved this <sup>[3][4][5][6]</sup>, few have examined its effectiveness in the relief of residual limb pain among amputees.

This study was delimited by the small sample size which reduces the generalizability of the findings and its effective application to the management of chest pain in chronic bronchitis. Also as part of the limitations, pain level assessment is subjective making it really difficult to be assessed by another person. Therefore the values applied are as they were expressed by the patient and we could not question what they feel as pain.

## CONCLUSIONS, RECOMMENDATIONS AND IMPLICATION FOR NURSING

Residual limb pain is the pain felt in the remaining portion of the affected limb after amputation. The causes of residual limb pain are numerous and include tissue damage during surgery, poor prosthetic fit, an unprotected neuroma, rubbing of the skin, and joint dysfunctions.

Additional causes or contributing factors are swelling, poor circulation, adhered scars, muscle spasms or referred pain (pain felt in an area of the body that is not the actual source of the pain). All of these can be effectively treated with massage therapy. Amputated patients usually experience some of these pains ranging from mild to severe. In some cases it could be excruciating. This case study provides an insight regarding the effective management of residual limb pain with massage in amputated patients. If this therapy is confirmed by future studies, it may have a significant role to play clinically. Nurses can adopt this simple technique in order to relieve residual limb pain experienced by patient who have undergone amputation.

### Competing Interest

We do not have any competing or conflicting interest to declare.

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