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The Application of Hand Massage for Pain Management in Post-Laparotomy Patient; A Case Study

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Abstrak

Nyeri pasca laparotomi merupakan salah satu masalah utama dalam praktik keperawatan yang sering dialami pasien pascaoperasi. Nyeri yang tidak ditangani dengan baik dapat menyebabkan ketidaknyamanan, gangguan tidur, peningkatan stres fisiologis, keterbatasan mobilitas, dan keterlambatan penyembuhan luka. Manajemen nyeri yang efektif merupakan bagian penting dalam meningkatkan kenyamanan pasien dan mempercepat pemulihan. Selain pendekatan farmakologis, beberapa penelitian menunjukkan bahwa intervensi non-farmakologis seperti pijat tangan dapat menjadi manajemen nyeri yang efektif, aman, dan mudah diterapkan. Penelitian ini bertujuan untuk mengidentifikasi luaran pasien setelah menerima terapi pijat tangan menggunakan baby oil dalam mengurangi nyeri pasca laparotomi. Desain penelitian menggunakan pendekatan studi kasus kuantitatif deskriptif. Subjek penelitian adalah seorang pasien pasca laparotomi di RSUD dr. Soebandi, Jember, yang mengalami nyeri sedang, diukur dengan *Numeric Rating Scale* (NRS). Pasien diberikan asuhan keperawatan, dan salah satu intervensinya adalah pijat tangan, serta pemberian obat pereda nyeri. Intervensi pijat tangan diberikan dua kali sehari selama empat hari berturut-turut, dengan setiap sesi berlangsung selama 10 menit. Skala nyeri pasien diamati setiap hari. Hasil studi kasus menunjukkan penurunan nyeri dari skala 6 pada hari pertama menjadi skala 3 pada hari keempat. Pasien mengatakan bahwa setiap kali diberi obat pereda nyeri, nyeri masih terasa, tetapi pijatan justru meredakannya. Oleh karena itu, terapi ini dapat dianggap sebagai terapi yang efektif dan intervensi keperawatan komplementer yang aplikatif dalam mengelola nyeri pasca-laparatomi.

Kata kunci: pasca laparatomi; skala nyeri; manajemen nyeri; pijat tangan

Abstract

Post-laparotomy pain is one of the major problems in nursing practice frequently experienced by patients after undergoing surgical procedures. Poorly managed pain can lead to discomfort, sleep disturbances, increased physiological stress, limited mobility, and delayed wound healing. Effective pain management is an essential part of enhancing patient comfort and accelerating recovery. In addition to pharmacological approaches, several studies showed that non-pharmacological interventions such as hand massage can serve as effective, safe, and easily applicable pain management. This study aims to identify patient's outcome after receiving hand massage therapy using baby oil in reducing pain in post-laparotomy. The research design employed a descriptive quantitative case study approach. The subject was a single post-laparotomy patient at dr. Soebandi Hospital, Jember, experiencing moderate pain, as measured by the Numeric Rating Scale (NRS). The patient was given nursing care, and one of the interventions was hand massage, as well as pain relief medication. The hand massage intervention was

administered twice daily for four consecutive days, with each session lasting 10 minutes. The patient's pain scale was observed daily. The results of the case study showed a decrease in pain from a scale of 6 on the first day to a scale of 3 on the fourth day Patient said that everytime he got pain medication, he still feel the pain, but the massage made it better. Therefore, this therapy can be considered as an effective therapy and applicable complementary nursing intervention in managing post-laparatomy pain.

Keywords: hand massage, laparotomy, pain management; pain scale

INTRODUCTION

Liver abscess is an infection of the liver caused by pyogenic bacteria or parasites such as Entamoeba histolytica, which can lead to hepatic tissue damage and pose a risk of serious complications if not promptly treated (Novia & Cahyadi, 2018; Bria, 2024). In cases where the abscess does not respond to conservative therapy, surgical interventions such as laparotomy are often necessary to directly remove the abscess and prevent the spread of infection. Post-laparotomy patients are at high risk of experiencing nursing problems, one of which is acute pain resulting from surgical trauma, abdominal muscle incision, and manipulation of intra-abdominal organs during the procedure (Matatula & Nikijuluw, 2025; Amelia, 2020). Poorly managed postoperative pain can disrupt patient comfort, delay wound healing, limit daily activities, and increase both physiological and psychological stress, ultimately affecting the overall recovery outcome (AZ et al., 2022; Blumlein & Griffiths, 2022). Therefore, effective pain management is a crucial aspect of nursing care. Pain management approaches consist of two main types: pharmacological and non-pharmacological. Non-pharmacological interventions such as hand massage are considered effective, safe, and feasible for implementation by healthcare providers or even the patient's family.

Hand massage is a gentle massage technique applied to the hands that induces relaxation by stimulating the nerves and enhancing the release of endorphins, thereby significantly reducing pain perception (Larasati & Oktaviani, 2021; Yaban, 2019). Previous studies have shown that this therapy can reduce pain levels in post-laparotomy patients and improve comfort during the recovery period (Bercy & Desmarnita, 2023; Amelia, 2020; Nisa et al., 2023). However, in the Mawar Ward of dr. Soebandi Regional General Hospital, Jember, hand massage interventions have not been widely adopted in pain management practices, which remain predominantly reliant on pharmacological analgesics. Based on this context, the present study aims to study aims to identify patient's outcome after receiving hand massage therapy using baby oil in reducing pain in post-laparotomy patients diagnosed with liver abscess, as an effort to strengthen evidence-based complementary nursing practices that focus on improving patient comfort and accelerating the recovery process.

METHODS

This study employed a quantitative method with a descriptive case study design and a pre-experimental pre-posttest approach. The research was conducted in the Mawar Ward of dr. Soebandi Regional General Hospital, Jember, involving a 36-year-old male patient who was hospitalized after undergoing laparotomy due to a liver abscess. The subject was selected purposively based on the following inclusion criteria: conscious, cooperative, no sensory or motor impairments in the upper extremities, and able to verbally communicate pain. The subject was given nursing intervention particularly regarding the nursing diagnosis; acute pain. Data collection was carried out through nursing assessment, and focusing on direct observation and measurement of pain intensity using the Numeric Rating Scale (NRS), a numerical scale ranging from 0 to 10, which is clinically categorized into mild pain (1–3), moderate pain (4–6), and severe pain (7–10).

The intervention consisted of hand massage therapy administered over four consecutive days, twice daily (noon and evening), with each session lasting 10 minutes, five minutes of massage for each hand using baby oil. The massage technique followed a standardized operating procedure (SOP), involving gentle, rhythmic, and structured strokes on the palms, backs of the hands, and fingers. Pain intensity was measured through nursing evaluation: 1) formative evaluation, that held on after every session of hand massage everyday and; 2) summative evaluation, that held on the last day of nursing intervention. The NRS measurement data were then analyzed using descriptive quantitative methods to assess changes in pain intensity before and after the intervention. The analysis compared the NRS scores between those in the assessment and those, after intervention to to identify patient's outcome after receiving hand massage therapy as a non-pharmacological therapy in postoperative pain management. This study received approval from the hospital and informed consent was obtained from the patient as part of ethical research practices.

RESULTS

Pain was measured using the Numeric Rating Scale (NRS) before and after the intervention, which was administered over four consecutive days. The intervention was given twice daily, in the morning and evening, with each session lasting 10 minutes. The pain scale scores during the intervention period are presented in figure 1.

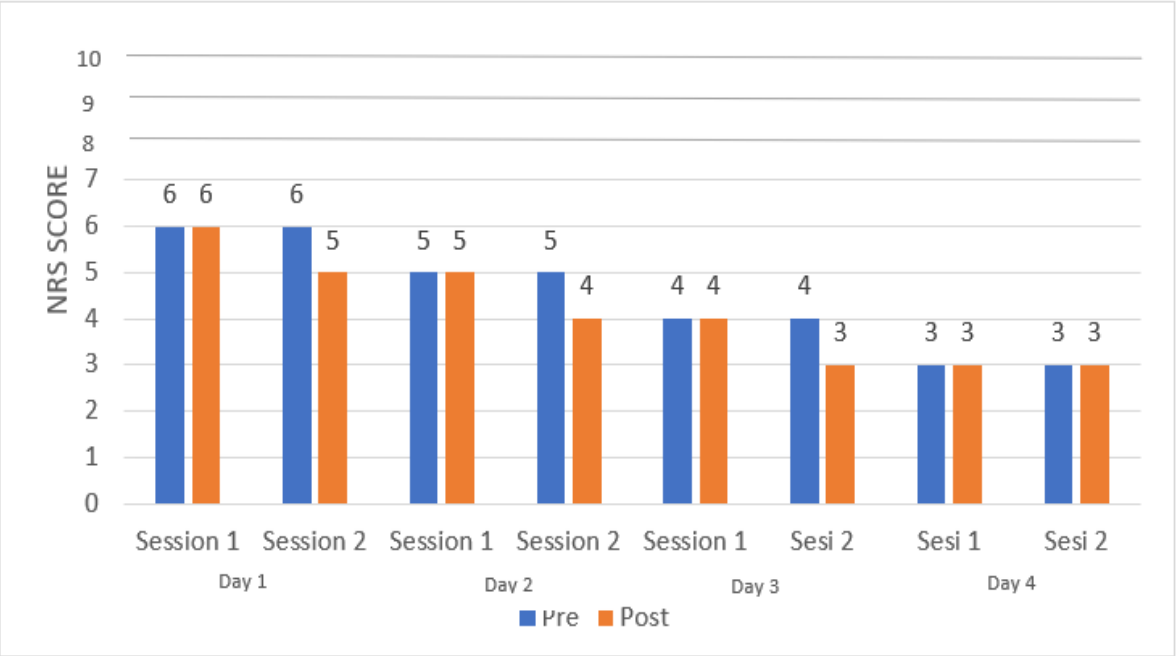

Figure 1. Graph of Pain Score During Hand Massage Intervention

The observed decrease in pain scores over the four-day intervention period indicates a gradual shift from moderate to mild pain. This downward trend was consistent, with no recurrence or increase in pain intensity following each intervention session, both in the afternoon and evening. The stability of pain scores on the third and fourth days suggests that the patient maintained a higher level of comfort as the therapy progressed. The measured decrease from a score of 6 to a score of 3 indicates that the hand massage intervention was associated with a reduction in pain levels in the post-laparotomy patient. These findings suggest that non-pharmacological interventions such as hand massage can have a positive impact on pain experienced by patients during the recovery phase.

DISCUSSION

The results of this study show a gradual decrease in pain intensity in a third-day post-laparotomy patient with a liver abscess following the implementation of hand massage therapy. The initial pain score of 6 (moderate pain) decreased to 3 (mild pain) after four consecutive days of intervention. The reduction began on the first day and continued progressively through the third day, stabilizing on the fourth day. No increase in pain intensity was observed, indicating that the relaxation effect of this therapy is both consistent and sustained.

Physiologically, hand massage works through several mechanisms. Mechanical stimulation of the skin through gentle touch and rhythmic pressure can activate non-nociceptive A-beta nerve fibers, thereby inhibiting the transmission of pain impulses through the Gate Control Theory (Melzack & Wall,

1965). Additionally, therapeutic touch promotes the release of endorphins natural analgesic compounds in the body that also induce a calming effect. From a psychological perspective, hand massage fosters a sense of relaxation, reduces anxiety, and creates a feeling of being cared for, all of which contribute to increased patient comfort. When patients feel more relaxed, their pain tolerance threshold tends to increase. This is especially important in postoperative pain management, which encompasses both physical and psychosocial dimensions.

The findings of this study is consistent with the results of Bercy & Desmarnita (2023), who reported that hand massage significantly reduced pain intensity in post-laparotomy patients. Similarly, Amelia (2020) demonstrated that administering hand massage twice daily over three days could reduce postoperative abdominal pain scores by up to 40%. Nisa et al. (2023) also found that hand massage improved sleep quality and comfort in post-laparotomy patients compared to a control group that received only pharmacological analgesics. Furthermore, Larasati & Oktaviani (2021) emphasized that hand massage is an effective, efficient, and low-risk complementary nursing intervention that can be applied to manage both acute and chronic pain.

The findings of this study support the conclusion that simple interventions such as hand massage can have a meaningful clinical impact, especially when applied consistently and in accordance with standard procedures. Based on the results obtained, it can be deduced that hand massage therapy has the potential to be integrated as a complementary nursing intervention in postoperative pain management. It is a practical intervention that nurses can perform easily, requires no complex equipment, causes no side effects, and can be used alongside pharmacological therapies for a synergistic effect (Rahmawati, 2020). These findings indicate that hand massage may be an effective method for reducing pain perception in postoperative patients, particularly when administered regularly. The pain reduction effect also suggests that this therapy offers not only temporary relief but also sustained comfort when implemented over a short and intensive period.

In this study, the patient not only received hand massage as a pain control measure, but also received pain medication. However, the pain scale has not been decrease significantly only with medication. The pain scale showed significant decrease after given complementary intervention using hand massage. This showed that combining hand massage and pain medication can be an effective part of pain management, as massage can improve pain and anxiety while medication provides a different form of relief. However, it's crucial to approach this combination with caution, as some pain medications can mask pain, potentially leading to over-massaging, and certain medications like blood thinners increase the risk of bruising from massage (Islamy, et.al, 2022).

Hand massage can be integrated into the intervention of nursing care in surgical wards as part of a holistic approach to pain management and as an adjunct to pharmacological interventions such as analgesics (Pramesti, 2020). This intervention may also involve family members in patient care, thereby

promoting family empowerment during the recovery process. Based on the findings and their alignment with existing theories and prior studies, the researcher concludes that hand massage therapy is effective in reducing pain in post-laparotomy patients and is acceptable within the context of this study.

The researcher believes that non-pharmacological interventions such as hand massage hold significant clinical value and can be broadly implemented, particularly in nursing practices that prioritize a humanistic and minimally invasive approach. Although this study involved only a single subject as a case study, the results demonstrated a clear and consistent pattern, which can serve as a foundation for further research using experimental designs and larger samples. The researcher also sees great potential for hand massage to become a standard intervention in postoperative pain management, particularly for patients who are sensitive to the side effects of analgesic medications.

CONCLUSION

Based on the results of the study, it can be concluded that hand massage therapy is effective in reducing pain intensity in third-day post-laparotomy patients diagnosed with a liver abscess. The decrease in pain scores from moderate to mild occurred gradually and remained stable over the four-day intervention period, with no recurrence of pain intensity after therapy was administered. This indicates that hand massage provides a sustained relaxation effect and supports patient comfort during the postoperative recovery phase.

The effectiveness of this therapy aligns with physiological theories related to pain perception modulation through touch stimulation, and is further supported by previous studies showing similar outcomes. This intervention has been proven to be safe, simple, and easy to implement in clinical settings especially as part of a complementary nursing approach that addresses not only physical but also psychological aspects of patient care.

Therefore, hand massage can be considered a feasible non-pharmacological pain management strategy to be integrated into nursing practice, particularly for postoperative patients with similar conditions. However, the application of hand massage when combining with pain medication should be with caution to prevent any adverse event.

REFERENCES

Amelia, W., & D. M. (2020). Efektifitas hand massage terhadap skala nyeri pada pasien post operasi laparatomi. Jurnal Kesehatan Midwinerslion, 5(1), 96–105.

AZ, R., Tarwiyah, T., & Maulani, M. (2022). Pengaruh teknik relaksasi genggam terhadap skala nyeri pasien post operasi. JINTAN: Jurnal Ilmu Keperawatan, 2(1), 27–32. https://doi.org/10.51771/jintan.v2i1.216

Bercy, A., & Desmarnita, U. (2023). Complementary therapy: Foot and hand massage on reducing post laparotomy pain levels with adenomyosis (case study). Journal Center of Excellent: Health Assistive Technology, 1(2), 59–64. https://doi.org/10.36082/jchat.v1i2.1292

Blumlein, D., & Griffiths, I. (2022). Shock: Aetiology, pathophysiology and management. British Journal of Nursing, 31(8), 422–428. https://doi.org/10.12968/bjon.2022.31.8.422

Bria, M. D. (2024). Pendekatan Diagnosis dan Tatalaksana Abses Hepar Piogenik pada Rumah Sakit Perifer: Sebuah Laporan Kasus. Jurnal Sehat Indonesia (JUSINDO), 6(02), 603- 609.

Islamy, M. R. F., Purwanto, Y., Romli, U., & Ramdani, A. H. (2022). Spiritual healing: A study of modern sufi reflexology therapy in Indonesia. Teosofi: Jurnal Tasawuf Dan Pemikiran Islam, 12(2), 209-231.

Larasati, P., & Oktaviani, M. (2021). Asuhan keperawatan pada pasien post operasi laparatomi hernia inguinalis. Jurnal Kesehatan, 1–7.

Matatula, C. N., & Nikijuluw, H. (2025). *Abses Hepar : Analisis Kasus dan Tinjauan Penanganannya*.

Melzack, R., & Wall, P. D. (1965). GateControl-Pain mechanisms - a new theory. In *Science* (Vol. 150, Issue 3699, pp. 971–979). https://www.canonsociaalwerk.eu/1846_anesthesie/Canon Palliatieve Zorg - Ontstaan van anesthesie - Science – melzackandwallgatecontroltheory

Nisa, R. L. C., Margaretha, S., Maryati, S., & Mujiyani, S. A. (2023). Efforts to reduce the scale of pain post laparotomy with hand massage therapy. *Proceeding International Conference on Health Polytechnic Ministry of Health Surabaya, 2*(2).

Novia, J., & Cahyadi, A. (2018). Gangguan Fungsi Hati pada Pasien Abses Hati Amebadengan Lama Perawatan di Rumah Sakit Atmajaya. Journal Of The Indonesian Medical Association, 68(2), 72-75.

Pramesti, P. S. (2020). *[Efektivitas Hand Massage dalam Mengurangi Ketegangan Fisik dan Emosional pada Pasien]*. [Jenis publ.: skripsi/dokumen internal].

Rahmawati, N. (2020). Terapi pijat tangan sebagai intervensi mandiri perawat. Jurnal Keperawatan Terapan, 8(2), 45–52.

Yaban, Z. S. (2019). Usage of non-pharmacologic methods on postoperative pain. International Journal of Caring Sciences, 12(1), 529–541.