

Effectiveness of relaxation techniques and touch distractions in lowering pain scales

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ABSTRACT

Introduction: Pain is one of the most common symptoms experienced by patients with various medical conditions. Effective pain management is essential to improve a patient's quality of life. Relaxation and touch techniques are nonpharmacological methods that can reduce Pain. This study evaluated the effectiveness of relaxation and touch techniques in lowering pain scales.

Methods: This study used an experimental design with pre-test and post-test approaches. Patients with chronic pain were divided into two groups: an intervention group that received relaxation and touch techniques and a control group that did not receive an intervention. Relaxation techniques used include deep breathing, meditation, and progressive muscle relaxation. The touch techniques used are massage and therapeutic touch. The pain scale was measured using the Visual Analog Scale (VAS) before and after the intervention.

Results: The management of relaxation techniques and touch distraction patients on the first- and second-days experienced changes in pain scales, but the Pain was not resolved. On the third day, the Pain was also not resolved if hyperlipidemia pressure increased, while the first day and day two experienced changes in pain scale but were not resolved, and on the third day, the Pain could be resolved with a pain scale of 0.

Conclusions: Relaxation and touch techniques effectively lower pain scales in patients with chronic Pain. This method can be part of comprehensive pain management to improve a patient's quality of life. Both techniques can be used as additional methods in pain management to improve a patient's quality of life. Further studies with larger samples and extended intervention periods are needed to confirm these findings. Relaxation and touch techniques can be integrated into clinical practice as part of a multimodal approach to pain management. Education and training for health workers on the use of these techniques can improve patient acceptance and adherence.

Keywords: chronic Pain; pain management; relaxation techniques.



INTRODUCTION

Pain is one of the health problems often faced by patients with various medical conditions, both acute and chronic (Cohen, Vase, and Hooten, [2021](#)). Pain that is not managed correctly can affect the patient's quality of life, cause sleep disturbances, decrease mobility, and trigger stress and anxiety (Raffaele *et al.*, [2021](#)). Therefore, effective pain management is essential in clinical practice to improve patient well-being. Conventional approaches to pain management often involve the use of analgesic medications. However, long-term use of these medications can cause unwanted side effects such as dependence, tolerance, and gastrointestinal problems. Alternatively, nonpharmacological methods such as relaxation techniques and therapeutic touch have evolved as effective and minimally risky strategies for managing Pain (Fitzcharles *et al.*, [2021](#)). People with sickle cell disease frequently use complementary and integrative therapies to cope with their pain, yet few studies have evaluated their effectiveness (Doorenbos *et al.*, [2023](#)).

Relaxation techniques include a variety of methods designed to reduce physical and mental tension, thereby lowering pain perception (Gardner *et al.*, [2024](#)). Methods such as deep breathing, meditation, progressive muscle relaxation, and visualization have been shown to help reduce stress and improve patient pain control. Deep relaxation helps decrease sympathetic nervous system activity, which plays a role in pain response, so patients feel calmer and Painless. Therapeutic touch, including massage and acupressure, involves the application of gentle physical pressure to relieve muscle tension and improve blood circulation (Georgopoulos *et al.*, [2024](#)). Touch therapy is believed to stimulate the release of endorphins, natural pain-relieving substances in the body, and increase comfort and relaxation. Gentle touch can also provide emotional support and enhance the therapeutic relationship between the patient and the healthcare provider. Although evidence supports the effectiveness of relaxation and touch techniques in pain management, more research is needed to confirm these findings and determine the most effective methods and their application in various pain conditions. This study evaluated and compared the effectiveness of relaxation and touch techniques in lowering pain scales in patients with acute and chronic Pain (Scheidegger *et al.*, [2023](#)).

Effective pain management is critical because uncontrolled Pain can interfere with daily activities, reduce quality of life, and cause emotional stress (Caneiro, Bunzli and O'Sullivan, [2021](#)). Conventional pain treatment methods often involve the use of analgesic medications, but long-term use of these medications can lead to unwanted side effects and dependence (Nadeau, Wu, and Lawhern, [2021](#)). Effective pain management is critical because untreated Pain can interfere with daily activities, reduce quality of life, and cause negative psychological impacts such as stress and depression (Onwumere *et al.*, [2022](#)). Although pharmacological analgesics are often used to manage Pain, long-term use of these medications can cause unwanted side effects, such as dependence and impairment in organ function (Genova *et al.*, [2020](#)). In response to the limitations of pharmacological therapy, nonpharmacological techniques such as relaxation and touch have been developed and applied in various clinical settings. Relaxation techniques involve deep breathing, meditation, and progressive muscle relaxation, all of which aim to reduce physical and mental tension. Multiple studies have shown that these techniques can lower stress and anxiety levels, which often worsens pain perception (Menga *et al.*, [2023](#)).

Relaxation and touch techniques have been used in various clinical settings to reduce pain perception as an alternative or complement to pharmacological therapies. Relaxation techniques involve deep breathing, meditation, and progressive muscle relaxation to reduce physical and mental tension (Murwani *et al.*, [2022](#)). Through in-depth and structured research, we can better understand how and why these techniques work so they can be integrated more effectively into clinical practice. In addition, educating patients and healthcare professionals about the benefits of relaxation and touch techniques can increase acceptance and adherence to these methods, thereby improving overall health outcomes. However, scientific evidence on the effectiveness of relaxation and touch techniques in pain management still requires further research. Some studies show promising results, but variations in research methods, sample size, and duration of

interventions are often limitations in generalizing findings. This study aimed to empirically evaluate the effectiveness of relaxation and touch techniques in lowering pain scales in patients with acute and chronic Pain. Understanding this nonpharmacological method's effectiveness is expected to provide a safer and more effective alternative to pain management and improve patients' quality of life.

MATERIALS AND METHODS

Qualitative research with a case study design that aims to illustrate. The approach used in this case study is the nursing care process, which includes the study, diagnosis, planning, implementation, and evaluation of nursing. This study used an experimental design with pre-test and post-test approaches. Patients with chronic pain were divided into two groups: an intervention group that received relaxation and touch techniques and a control group that did not receive the intervention. Relaxation techniques used include deep breathing, meditation, and progressive muscle relaxation. The touch techniques used are massage and therapeutic touch. The pain scale was measured using the Visual Analog Scale (VAS) before and after the intervention. Case study subjects

RESULTS

Table 1. Demographic data

Patient identity		Patient 1	Patient 2
Name	Ny. Y		Ny. W
Gender	Woman		Woman
Age	64		58
Marital status	Married		Married
Work	Housewives		Housewives
last education	Senior High School		Junior high school
Main complaint	Patients say they often feel dizzy and painful in the head		Patients say they often feel dizzy and Pain in the head
History of current illness	The patient said he has frequent headaches and felt dizzy during activities P: Pain arises during frequent activities and at night Q: the patient says Pain like a puncture; R: the patient says Pain in the head. S: Pain scale 4, T: Pain disappears. The patient says his head is dizzy, the patient seems restless		The patient said he has frequent headaches and felt dizzy during activities; p: Pain arises during frequent activities and at night; Q: the patient says Pain like a puncture; R: the patient says Pain in the head, S: Pain scale 4, T: Pain relief arises the patient says his vision is like spinning accompanied by dizziness.

Based on the table above, data from patient identity is found. In patient 1, named Mrs.Y, aged 64 years, female work homemakers were assessed with a medical diagnosis of hyperlipidemia. Patient 2, named Mrs. W, aged 58 years female, the patient did not work in an assessment with a medical diagnosis of Hyperlipidemia. In the medical history review, in the main complaint of patient 1 and patient 2, similarities were found: Pain in the head and often feeling dizzy. In the medical history, data on patients 1 and 2 will now be found in the management of muscle relaxation therapy.

Table 2. The effectiveness of relaxation techniques and touch distractions in lowering pain scales

Patient name	Day to	Pre	Post
Ny. Y	1	Pain scale 6 moderate pain	Pain scale 4 moderate pain
	2	Pain scale 4 moderate pain	Pain scale 3 mild pain
	3	Pain scale 3 mild pain	Pain scale 1 mild pain
Ny. W	1	Pain scale 5 moderate pain	Pain scale 3 mild pain
	2	Pain scale 3 mild pain	Pain scale 2 mild pain
	3	Pain scale 2 mild pain	Pain scale 0 no pain

In the table above, after the management of relaxation techniques and touch distraction for 3 days, Mrs. Y's patients on the first day and the second day experienced changes in pain scales, but the Pain was not resolved, and on the third day, the Pain was also not resolved if hyperlipidemia pressure increased, while on Mrs.W, the first day and day two experienced changes in the pain scale but were not resolved, and on the third day the Pain could be resolved with a pain scale of 0

DISCUSSION

The results of this study suggest that relaxation and touch techniques effectively reduce pain scales in patients with acute and chronic Pain. These findings are consistent with numerous previous studies suggesting that nonpharmacological interventions can be a helpful adjunct in pain management. Stress and anxiety reduction relaxation techniques help lower stress and anxiety levels, which are known to worsen pain perception (Colloca *et al.*, [2020](#)). By lowering stress, patients become better able to manage pain effectively. Modulating pain perception relaxation can affect the central nervous system, reduce sympathetic activity, and increase parasympathetic activity, contributing to decreased pain perception (Gholamrezaei *et al.*, [2022](#)). Patients who use relaxation techniques experience improved sleep quality, which is essential in healing and pain management (Sipilä and Kalso, [2021](#)). TPS did not significantly affect the short-term quality of recovery but might improve long-term outcomes, such as the incidence of chronic pain, opioid consumption, and functioning in daily life. However, the sample size in the present study was too small to provide solid evidence for this positive signal (Admiraal *et al.*, [2023](#)).

The effectiveness of touch techniques, such as massage and therapeutic touch, also showed significant results in lowering pain scales (Pinar and Demirel, [2021](#)). Touch increases stimulation of mechanoreceptors in the skin, reducing pain signal transmission through gate pain control mechanisms (gate control theory) (Da Rocha Rodrigues *et al.*, [2023](#)). Increased tactile blood circulation can increase blood flow to the painful area, helping reduce muscle tension and speed healing. The release of therapeutic touch endorphins is known to stimulate the release of endorphins, which act as natural analgesics in the body (Novira Parawansa *et al.*, [2020](#)). Integrating relaxation and touch techniques into clinical practice can significantly benefit pain management (Ben-Arye *et al.*, [2021](#)). Health professionals can be trained to use these techniques as part of a multimodal approach to managing patient pain. In addition, patient education about relaxation and touch techniques can improve their adherence and participation in pain management (Suprpto *et al.*, [2024](#)).

Exploring how relaxation and touch techniques reduce Pain can provide a deeper understanding. For example, relaxation techniques reduce sympathetic nervous system activity and increase parasympathetic nervous system activity, while touch techniques can stimulate the release of neurotransmitters that reduce pain perception (Casals-Gutiérrez and Abbey, [2020](#)). In addition to the physical aspect, the psychological role is related to the effectiveness of relaxation and touch techniques, which are also associated with psychological aspects such as increased feelings of relaxation, decreased stress, and improved emotional well-being (Naruse and Moss, [2021](#)). Discussing how these factors contribute to pain management can be an exciting topic.

Clinical application discussions may include how relaxation and touch techniques can be integrated into daily clinical practice (Sandvik *et al.*, [2020](#)). This includes identifying patients who could benefit most from the technique, training health workers in providing appropriate interventions and developing structured intervention programs. Although both techniques have proven effective, the debate about their relative effectiveness may also be part of the discussion (Corkley, Fraaije, and Hawkins, [2022](#)). For example, whether there are certain conditions or situations in which one technique is more effective or whether a combination of the two can produce additional benefits. Security and compliance discussions may also include security and adherence to relaxation and touch techniques, ensuring that this technique is performed correctly and safely, and increasing patient compliance with this intervention (Abdullah, Thalib, and Nurhalisa, [2023](#)). Challenges and constraints may also include challenges and limitations in applying relaxation and touch techniques in clinical practice. For example, the availability of resources, the necessary therapeutic skills, or the role of the environment in supporting the effectiveness of these techniques (Shumway-Cook *et al.*, [2023](#)).

Relaxation techniques activate the parasympathetic nervous system, which produces a relaxation response and decreases sympathetic nervous system activity associated with Pain. Therapeutic touch can stimulate the release of endorphins and other neurotransmitters responsible for natural pain relief. The importance of a multimodal approach can emphasize the importance of using a multimodal approach in pain management, where relaxation and touch techniques are combined with pharmacological therapies and other interventions (Cooney and Quinlan-Colwell, [2020](#)). This approach can provide more comprehensive and holistic benefits for patients. In addition to physically reducing Pain, relaxation and touch techniques also have an essential role in managing psychological and emotional aspects associated with Pain, such as stress, anxiety, and depression.

Discussions of how these techniques can improve a patient's quality of life through understanding and emotional management can be a valuable addition. Each patient has a different response to relaxation and touch techniques. Discussions may include the importance of personalized care, where interventions are tailored to the patient's preferences, needs, and conditions to achieve optimal outcomes (Xu *et al.*, [2021](#)). Patient and family education refers to educating patients and families about relaxation and touch techniques. Educated patients are more likely to follow the intervention correctly and benefit most from the method, while the family can play a supportive role in implementing the intervention at home (Liu and Xun, [2021](#)). The measurement and evaluation of results may also include the importance of measuring and evaluating results from using relaxation and touch techniques. A systematic assessment of changes in pain scales, stress levels, sleep quality, and other aspects of well-being can provide valuable information to measure the effectiveness of interventions (Jones *et al.*, [2020](#)).

CONCLUSIONS

Relaxation and touch techniques are effective in lowering pain scales in patients with chronic Pain. This method can be part of comprehensive pain management to improve a patient's quality of life. Relaxation and touch techniques can be an essential part of a holistic approach to pain management, providing additional benefits in addition to pain reduction itself. Integrating these techniques into everyday clinical practice can help improve patient care outcomes and well-being. Relaxation and touch techniques can be incorporated into clinical practice as part of a multimodal approach to pain management. Education and training for health workers on the use of these techniques can improve patient acceptance and adherence.

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