Original Article

Reducing Pain in Postoperative Femoral Fracture Patients with Spiritual-Based Relaxation Breathing

Tata Mahyuvi [1] , Dony Kristiya Marta [2]

[1] Doctoral Program at Institute Of Health STRADA Indonesia and Nurse at Islamic Hospital Surabaya A.Yani, Surabaya, Indonesia
[2] Mitra Medika Bodowoso Hospital, East Java, Indonesia

ARTICLE INFO

Article History:
Submit : Jan 4, 2023
Revised : June 12, 2023
Accepted : June 25, 2023

Keywords:
Spiritual, Breathing Relaxation, Pain, Fracture

ABSTRACT

Background: Fractures occur due to trauma or physical activity with excessive pressure on the bone, including collisions, beatings, falls, irregular or tilted positions, dislocations, withdrawals, and abnormal bone weakness (pathological fractures). This study aims to analyze the effect of Breathing Relaxation spiritual-based on reducing pain scale in patients with postoperative femoral fractures.
Methods: A quasi-experiment with a one-group pretest-posttest design technique constitutes the study design. Population All postoperative femur fracture patients at Mitra Medika Hospital Bondowoso of 30 people. The sample size is 24 respondents. The sampling technique is Consecutive Sampling. Intervention is given effect Breathing Relaxation spiritual based. The analysis used the Wilcoxon Signed Ranks Test with a significant value of $\alpha < 0.05$.
Results: The pre and post-pain scale test using the Wilcoxon Signed Ranks Test obtained a p-value of 0.000, which means the effect of Breathing Relaxation Spiritual-Based Changes in Pain Scale in Postoperative Femur Fracture Patients.
Conclusion: Breathing Relaxations are spiritually based and effective in reducing Pain Scale in Postoperative Femur Fracture Patients. This method is very good when applied in hospitals to develop nursing knowledge.

Corresponding Author : Tata Mahyuvi
Affiliation : Doctoral Program at Institute Of Health STRADA Indonesia and Nurse at Islamic Hospital Surabaya A.Yani, Surabaya, Indonesia
Email : Mahyuvi1922@gmail.com
Cite this as : Mahyuvi, T., & Marta, D. K. . (2023). Reducing Pain in Postoperative Femoral Fracture Patients with Spiritual-Based Relaxation Breathing. Journal of Applied Nursing and Health, 5(1), 90–96. https://doi.org/10.55018/janh.v5i1.120

Introduction

A person will feel physiological and psychological changes that may result in a response in the form of pain if their integrity is threatened by fracture, both potential and actual (Arif & Sari, 2019) y. A fracture is a condition where there is a discontinuity in the bone. Fractures occur due to trauma or physical activity where there is excessive pressure on the bone, including collisions, beatings, falls, irregular or tilted positions, dislocations, withdrawals, and abnormal bone weakness (pathological fractures). One of the factors that cause most fractures is the result of accidents, be it work-related accidents, traffic accidents, and so on. However, fractures can also occur due to other factors, including degenerative processes and pathology.

According to World Health Organization (WHO) data from 2019, the prevalence of fractures was 3.2%, with an estimated 15 million persons reporting fractures. Due to traffic accidents, there were roughly 20 million fractures in 2018, with a prevalence rate of 4.2%, and 21 million fractures in 2018, with a prevalence rate of 3.8%. (Riskesdas, 2018). In Indonesia, femur fractures are the most prevalent type of fracture, followed by humerus fractures (17%), tibia and fibula fractures (14%), and humerus fractures (42%). Car, motorcycle, and recreational vehicle accidents account for 65.6% of traffic accidents, while falls account for 37.3%.(Desiartama & Aryana, 2017). The incidence of fractures in East Java Province in 2016 was 1,422 people. In 2017, there were 2,065 people. In 2018, there were 3,390 people(Riskesdas, 2018). Of all the postoperative fractures at Mitra Medika Bondowoso Hospital, all of them experienced pain.

Treatment of femoral fractures can be done surgically or without surgery, including immobilization, reduction, and rehabilitation. Reduction is a procedure that is often performed to correct fractures. One way is to use internal fixation and external fixation through surgery. Almost all surgeries result in pain. Nurses spend more time with patients experiencing pain than any other healthcare professional, and nurses have the opportunity to help relieve pain and its harmful effects(Smeltzer & Bare, 2014). Based on the research results (Suryani & Soesanto, 2020), Fracture patients experience pain disturbances. Fracture postoperative pain can make it difficult for patients to fulfill their Activity Daily Living (ADL). Pain occurs due to an injury caused by a broken bone injuring healthy tissue(Pratiwi et al., 2020).

Pain is a personal feeling, the emotional or sensory response of an individual in an unpleasant condition caused by damage or the potential for tissue damage.(Aprina et al., 2018). Pain occurs due to injuries that affect healthy tissue, affecting the body's homeostasis, which will cause stress. If discomfort due to pain is not treated, it can harm the healing process and even cause death(Pratiwi et al., 2020). Someone who experiences pain will impact daily activities such as sleep disturbances, activity intolerance, personal hygiene, and nutritional disorder (Potter et al., 2014) s. Non-pharmacological management to reduce the pain scale is carried out using complementary therapies, including giving warm compresses, relaxation techniques, spiritual approaches, guided imagination, distraction, transcutaneous electrical nerve stimuli, musical therapy stimuli, and massage, which can make you feel comfortable because it will relax the muscles. Hence, it relieves pain in femoral fracture patients (Risnah et al., 2019) s.

This is supported by research(Sasongko et al., 2019), which states that deep breathing relaxation can reduce the pain scale in postoperative fracture patients—also supported by the results of the Systematic Review(Suwahyu et al., 2021), which states that reducing pain in postoperative fracture patients can be done by using the relaxation with deep breathing techniques. Nurses are important in the physiology and psychology of postoperative fracture patients treated in the operating room. Psychological support and effective communication are keys to a successful treatment process. Breathing relaxation exercise is a relaxation technique that is easy for postoperative fracture patients to overcome the problems they face, especially in overcoming the problem of postoperative pain.(Nasriati et al., 2016). Efforts can be made to increase the effectiveness of breathing relaxation using a spiritual approach.

Methods

The research design is a quick experiment with the group pretest–post-test design approach. Population All postoperative femur fracture patients at Mitra Medika Bondowoso Hospital of 30 people. The sample size is 24 respondents. The sampling technique is Consecutive Sampling. Intervention is given Breathing RelaxationSpiritual-based to lower the pain scale. The analysis used the Wilcoxon Signed Ranks Test with a significant value of α <0.05. Research Time August-October 2021. Before the research, an ethical review was conducted and declared ethically feasible with 037.1/015/VII/EC/KEP/LCBL/2021. All research teams agree with the final results of this study, and there is no conflict of interest in this study

Results

Table 1. Distribution of age, gender, education, and occupation of respondents in Postoperative Femur Fracture Patients at Mitra Medika Bondowoso Hospital

Characteristic Data	N	%
Gender		
Man	18	75.0 %
Woman	6	25.0 %
Amount	**24**	**100 %**
Age		
20-30 years	5	20.8 %
31-40 years	13	54.2 %
> 40 years	6	25.0 %
Amount	**24**	**100 %**
Education		
Base	2	8.3 %
Intermediate	15	62.5 %
College	7	29.2 %
Amount	**24**	**100 %**
Profession		
Working	18	75.0 %
Does not work	6	25.0 %
Amount	**24**	**100 %**

Based on Table 1. Almost all respondents were male, namely 18 respondents (75.0%). Most respondents, namely 54.2%, were between 31 and 40. Most of the respondents' education, namely 15 (62.5%), had secondary education. Almost all respondents worked, namely 18 (75.0%).

Table 2. Results of specific data distribution related to Pain Scale in Postoperative Femur Fracture Patients at Mitra Medika Bondowoso Hospital

Pain Scale	*Pre*		*Post*	
	Frequency (f)	**%**	**Frequency (f)**	**%**
Normal	-	-	2	8.3 %
Mild Pain	-	-	16	66.7 %
Moderate Pain	4	16.7 %	6	25.0 %
Severe Pain	16	66.7 %	-	-
Uncontrolled Pain	4	16.7%	-	-
Amount	**24**	**100 %**	**24**	**100 %**
Test results using Wilcoxon Signed Ranks Test obtained p value = 0.000				

Based on Table 2, it was found that most of the Postoperative Femur Fracture Patients experienced severe pain, namely 16 respondents (66.7%) before being given Spiritual-based Breathing Relaxation, and after being given Spiritual-based Breathing Relaxation, most of them experienced a decrease in pain to mild, namely 16 respondents (6,7 %). Based on the results of statistical tests using Wilcoxon Signed Ranks Testpvalue = 0.000 before and after the intervention is given, then H1 is accepted, meaning that there is an effect of Spiritual-based Breathing Relaxation on Reducing Pain Scale in Post Femoral Fracture Surgery Patients.

Discussion

1. Pain Scale in Postoperative Femur Fracture Patients before being given Spiritual-based Breathing Relaxation

According to research findings from Mitra Medika Bondowoso Hospital, most postoperative femur fracture patients, or 16 respondents (66.7%), reported having significant discomfort. Theoretically, a fracture is defined by its kind and magnitude as a complete or incomplete rupture of the continuity of bone structure. Fractures happen when a bone is put under more stress than it can handle(Nafisa, 2021). Direct blows, crushing forces, abrupt twisting, or intense muscular contractions can cause fractures ((Risnah et al., 2019). A Femur fracture is a loss of continuity of the femur. The condition of a femur fracture clinically can be an open femur fracture accompanied by soft tissue damage (muscle, skin, nerve tissue, and blood vessels) and a closed femur fracture caused by direct trauma to the thigh(Alfiana et al., 2020). When a bone breaks, the structures close by are also disrupted, leading to edema in soft tissues, bleeding into muscles and joints, dislocation of joints, rupture of tendons, injury to nerves, and bleeding into blood vessels. Pain is one of the numerous clinical symptoms brought on by the tissues, as mentioned earlier, being damaged. Pain is an uncomfortable feeling that is very subjective, and everyone's feelings of pain differ in scale or level (Widodo & Qoniah, 2020). Only that person can explain or evaluate the pain they are experiencing. Pain is whatever hurts the body of the individual who experiences it and whenever the individual states it is real(Suhartiningsih, 2019). Several factors influence the level of pain felt by respondents. (Potter et al., 2014)Several factors that influence pain include age, gender, culture, the meaning of pain, attention, anxiety, fatigue, previous experiences, coping styles, and family and social support.

The experience of previous surgical pain sometimes increases stress in the postoperative period because the patient will wonder about the procedure's effectiveness for pain relief. Apart from that, the opinion of(Potter et al., 2014)stated that each individual learns from the experience of pain; if someone has not felt pain before, then the first perception of pain can interfere with coping with pain. Based on the description above, the researchers argue that in terms of scale or level, each person's pain is different. Only that person can show the scale or level of pain they feel or experience. The pain a respondent with a fracture feels can occur due to a direct blow, a sudden twisting motion, or extreme muscle contraction. This causes tissue damage so that the continuity of bone tissue is interrupted, and eventually, pain occurs.

2. Pain Scale in Postoperative Femur Fracture Patients after being given Spiritual-based Breathing Relaxation

Based on the results of research conducted at Mitra Medika Bondowoso Hospital, it was found that most of the Postoperative Femur Fracture Patients most of them experienced a decrease in pain to mild, namely 16 respondents (66.7%) after being given *Breathing Relaxation*s spiritual-based.

This is consistent with the advantages of spiritually centered breathing relaxation for pain relief. After receiving Spiritual-based Breathing Relaxation therapy, respondents claimed that the intensity of their suffering might be diminished. Theoretically, Spiritual-based Breathing Relaxation is a breathing exercise that employs slow, deep breathing techniques and the diaphragm muscles to gradually lift the abdomen and fully open the chest while utilizing a spiritual approach through encouragement, inspirational statements, thanksgiving, and submission.

This is supported by research(Sasongko et al., 2019), which states that deep breathing relaxation can reduce the pain scale in postoperative fracture patients—also supported by the results of the Systematic Review(Suwahyu et al., 2021), which states that reducing pain in postoperative fracture patients can be done by using the relaxation with deep breathing techniques. Nurses are important in the physiology and psychology of postoperative fracture patients treated in the operating room. Psychological support and effective communication are keys to a successful treatment process. Breathing relaxation exercise is a relaxation technique that is easy for postoperative fracture patients to overcome the problems they face, especially in overcoming the problem of postoperative pain.operation(Nasriati et al., 2016).

Based on the description above, the researchers argue that Spiritual-based Breathing Relaxation is a distraction technique that can reduce pain, especially pain in postoperative femoral fracture patients. In this study, most of the respondents' pain scale after being given Spiritual-based Breathing Relaxation experienced a change in the form of a decrease. This can happen because Spiritual-based Breathing Relaxation makes the respondent more relaxed so that the perception of the pain is reduced.

3. Effect of Spiritual-based Breathing Relaxation on Reducing Pain Scale in Post Femoral Fracture Surgery Patients

Based on the results of statistical tests using the Wilcoxon Signed Ranks Test ρ value = 0.000 before and after being given the intervention, the meaning that there are influence Breathing Relaxations spiritual based Against Reducing Pain Scale in Post Fracture Surgery Patients at Mitra Medika Bondowoso Hospital. Efforts can be made to increase the effectiveness of breathing

relaxation using a spiritual approach. Spiritual is a multidimensional dimension of the existential dimension and the religious dimension. The existential dimension focuses on the meaning and purpose of life, whereas the religious dimension is more concerned with how people relate to God (Mahyuvi, 2021). According to research by Muhsinah (2020), listening to religious music can help people with fractures experience spiritual healing and lessen their agony. Research (Yorpina & Syafriati, 2020) that claims spiritual therapy with dhikr helps postoperative patients with pain management supports this claim. Relaxed Breathing, The patient, receives spiritual support for 10-15 minutes, 2-4 times daily. The decrease in pain intensity is caused by Spiritual-based Breathing Relaxation, which can stimulate the body to release endogenous opioids that will inhibit pain impulses to reduce the patient's perception of pain.

Conclusion

Before being given Breathing Relaxation based on Spirituality, most Post Femoral Fracture Patients experienced severe pain. After being given Spiritual-based Breathing Relaxation, most of the Post Femoral Fracture Patients Post Surgery experienced a decrease in pain to mild. There is an Effect of Spiritual-based Breathing Relaxation on Reducing Pain Scale in Postoperative Femur Fracture Patients

Authors Contributions

The author carries out tasks from data collection, data analysis, and making discussions to making manuscripts.

Conflicts of Interest

All research teams agree with the final results of this study, and there is no conflict of interest in this study.

Acknowledgement

I thank the research respondents and all parties who have assisted in this research.

References

Alfiana, S., Putri, A. S., Suciati, W., & Cahyo, F. D. (2020). Multidiscipline Approach In Patient With Severe Brain Injury And Femur Dextra Fracture. *Publikasiilmiah.Ums. Ac.Id*, 419–426.

Aprina, A., Hartika, R., & Sunarsih, S. (2018). Latihan Slow Deep Breathing dan Aromaterapi Lavender terhadap Intensitas Nyeri pada Klien Post Seksio Sesaria. *Jurnal Kesehatan*, *9*(2), 272. https://doi.org/10.26630/jk.v9i2.982

Arif, M., & Sari, Y. P. (2019). Efektifitas Terapi Musik Mozart Terhadap Penurunan Intensitas Nyeri Pasien Post Operasi Fraktur. *Jurnal Kesehatan Medika Saintika*, *10*(1), 69. https://doi.org/10.30633/jkms.v10i1.310

Mahyuvi, T. (2021). *Buku Panduan: Intervensi Spiritual Breathing Relaxation dalam menurunkan Skala Kecemasan Penderita Gagal Ginjal Kronik yang mejalani tindakan Hemodialisa* (Edisi 1). Lembaga Mutiara Hidup Indonesia.

Nafisa. (2021). *Penatalaksanaan pada pasien post op fraktur femur* (Qalbi, Ed.). Pustaka Taman Ilmu.

Nasriati, R., Suryani, L., & Afandi, M. (2016). Kombinasi Edukasi Nyeri dan Meditasi

Dzikir Meningkatkan Adaptasi Nyeri Pasien Pasca Operasi Fraktur. *Muhammadiyah Journal of Nursing*, *3*(1), 59–68.

Potter, P. A., Perry, A. G., Stockert, P., & Hall, A. (2014). *Fundamentals of Nursing Edition 7*. Salemba Medika

Pratiwi, A. E., Prasetyaningati, D., & Maunaturrohmah, A. (2020). Asuhan Keperawatan Pada Klien Fraktur Femur Dengan Masalah Keperawatan Nyeri Akut. *Jurnal Keperawatan Stikes Icme Jombang*, *3*(2), 40–46.

Riskesdas. (2018). *Riset kesehatan dasar. Badan penelitian dan pengembangan kesehatan. Kementrian kesehatan RI*.

Risnah, R., HR, R., Azhar, M. U., & Irwan, M. (2019). Terapi Non Farmakologi Dalam Penanganan Diagnosis Nyeri Pada Fraktur :Systematic Review. *Journal of Islamic Nursing*, *4*(2), 77. https://doi.org/10.24252/join.v4i2.10708

Sasongko, H., Sukartini, T., Wahyuni, E. D., & Putra, M. M. (2019). The Effects of Combination of Range Motion and Deep Breathing Exercise on Pain in Post-Orthopedic Surgery Patients. *Indonesian Journal of Medicine*, *4*(1), 46–53. https://doi.org/10.26911/theijmed.2019.04.01.08

Smeltzer, S. C., & Bare, B. G. (2014). *Keperawatan Medikal Bedah Brunner and Suddarth's*. EGC.

Suhartiningsih, S. (2019). Teknik Relaksasi Nafas Dalam untuk Menurunkan Intensitas Nyeri Post Operasi Sectio Caesarea di RSIA Melati Magetan. *Tunas-Tunas Riset Kesehatan*, *9*(November), 364–368.

Suryani, M., & Soesanto, E. (2020). Penurunan Intensitas Nyeri Pada Pasien Fraktur Tertutup Dengan Pemberian Terapi Kompres Dingin. *Ners Muda*, *1*(3), 172. https://doi.org/10.26714/nm.v1i3.6304

Suwahyu, R., Sahputra, R. E., & Fatmadona, R. (2021). Systematic Review: Penurunan Nyeri Pada Pasien Pasca Operasi Fraktur Melalui Penggunaan Teknik Napas Dalam. *Jurnal Ilmiah Permas: Jurnal Ilmiah STIKES Kendal*, *11*(1), 193–206.

Widodo, W., & Qoniah, N. (2020). Penerapan Teknik Relaksasi Nafas Dalam Untuk Menurunkan Intensitas Nyeri Pada Pasien Appendicitis Di RSUD Wates. *Nursing Science Journal (NSJ)*, *1*(4), 1.

Yorpina, & Syafriati, A. (2020). Pengaruh Pemberian Terapi Dzikir Dalam Menurunkan Nyeri Pada Pasien Post Operasi. *Jurnal Kesehatan Dan Pembangunan*, *10*(20), 106–113. https://doi.org/10.52047/jkp.v10i20.84