

THE EFFECT OF BENSON RELAXATION ON PAIN IN POST MAJOR SURGERY PATIENTS

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ABSTRACT

In the United States >80% of postoperative patients experience pain but only 30-50% receive effective treatment. Effective postoperative pain management requires other therapy than pharmacology with minimal side effects such as Benson relaxation. Benson relaxation is a deep breathing relaxation method involving belief factors that are effective in reducing postoperative pain To determine the effect of Benson's relaxation on pain in post-major surgery patients. This literature review uses the thematic analysis method: a simplified approach with publications for 2012-2022 using databases: Google Scholar, MEDLINE, JSTOR. The selection of articles used a modified PRISMA flow diagram. Analysis of article eligibility uses JBI Critical appraisal Checklist tools for RCT and Quasi-Experiment. The findings of 11 articles showed that Benson relaxation combined with pharmacological therapy was proven to be effective in reducing post-major surgery pain in terms of the time of administration, procedure, and mechanism. Benson relaxation also has other benefits such as controlling physical and psychological stress. Benson relaxation has been shown to have an effect on reducing pain in post-major surgery patients. Thus, Benson relaxation can be used as an option for independent non- pharmacological interventions in the management of post-major surgery pain.

Keywords : Benson relaxation, Post major surgery, Pain

ABSTRAK

Nyeri pasca bedah dirasakan oleh >80% pasien di Amerika, akan tetapi perawatan nyeri yang efektif hanya terjadi sekitar 30-50%. Manajemen nyeri pasca bedah yang efektif membutuhkan terapi selain farmakologi dengan efek samping minimalseperti relaksasi benson. Relaksasi benson adalah metode relaksasi nafas dalam dengan melibatkan faktor keyakinan yang efektif mengurangi nyeri pada pasien pasca bedah Untuk mengetahui pengaruh relaksasi benson terhadap nyeri pada pasien pasca bedah mayor. Kajian literatur ini menggunakan *thematic analysis method: a simplified approach* dengan publikasi tahun 2012-2022 menggunakan *databases: Google Scholar, MEDLINE, JSTOR*. Analisis artikel menggunakan modifikasi *flow diagram PRISMA*. Kelayakan artikel diuji dengan *JBI Critical appraisal Checklist tools for RCT and Quasi-Experiment*. Temuan kajian literatur dari 11 artikel menunjukkan relaksasi benson yang dikombinasikan dengan terapi farmakologi terbukti efektif dalam menurunkan nyeri pada pasien pasca bedah mayor ditinjau dari waktu pemberian, prosedur

dan mekanisme. Relaksasi benson juga memiliki manfaat lain seperti mengontrol stres fisik dan juga psikologi. Relaksasi benson telah terbukti memberi pengaruh terhadap penurunan nyeri pasien pasca bedah mayor. Sehingga, relaksasi benson dapat dijadikan salah satu pilihan intervensi mandiri non-farmakologi dalam penanganan nyeri pasca bedah mayor

Kata kunci: Relaksasi Benson, Pasca Bedah Mayor, Nyeri

INTRODUCTION

Surgery is an invasive procedure that involves opening and exposing parts of the body through an incision. The purpose of surgery is to establish a diagnosis, treat disease, injury, deformity, and treat conditions that cannot be cured by drug therapy. Major surgery is a procedure that involves a wider resection of the body so that it requires a longer recovery time, intensive care and has a higher risk of complications compared to minor surgery. Some examples of surgical procedures that include as major surgery are laparotomy, appendectomy, thoracotomy, craniotomy, and also on surgery that include vital organs (Akbar, Romandi, and Andrianovita 2015; El-shahat, Ali, and Metwaly 2017). According to the journal Mutiara ners (2018), the World Health Organization (WHO) reports that the number of surgical procedures has increased significantly from year to year. In 2011 there were 140,000,000 patients worldwide who underwent surgery, in 2012 there were 148,000,000 patients, and the Asian region reached 77 million patients undergoing surgery (Harahap et al. 2021).

The pain felt is associated with the tissue damage due to the incision that activates prostaglandins and leukotrienes and then stimulates the central nervous system to send signals to the spinal cord and activate pain impulses (Septiana et al., 2021). Although basically, this problem is a common thing, but the

effective treatment to deal with this problem is only about 30-50% (Felix et al., 2019). Unresolved pain will have an impact on psychosocial aspects, anxiety, sleep disorders, and unstable hemodynamic status which can be fatal such as a decrease in the immune system, increased glucose levels, increased catecholamines, cortisol, and antidiuretic hormone disorders that could lead to death (Yesim Yaman and Yilmaz 2017).

Pharmacological therapy is effective in reduce pain but have some side effects and need peak time (Ashrastaghi et al. 2015). According to Smeltzer (2001) The most effective pain management is when combine the pharmacology with non-pharmacology therapy (Mayasari 2016). One of the effective non-pharmacological therapy has proven can lowering the pain level is Benson relaxation.

Benson relaxation is a deep breathing relaxation therapy that has been developed by involving a person's belief factor. It works by shifting the focus of pain so that the body becomes relaxed, this can increase endogenous analgesics and be strengthened again by reciting spiritual sentences that provide calm (Morita, Amelia, & Putri 2020). The advantages of this therapy are easy to implement, has no side effects, and can be done by the patient himself so that it can ease the work of health workers (Solehati & Rustina 2015).

According to research by (Pishgooie et al. 2020) on the

comparison between benson relaxation and progressive muscle relaxation on post-laminectomy pain intensity, it was found that benson relaxation was more effective in reducing pain compared to progressive muscle relaxation techniques. It is also supported by the results of a study at a hospital in Iran, that benson 3 relaxation has a significant effect on pain after total knee replacement surgery in the elderly population (Keihani et al. 2019).

Based on the background description, The author finds that there has been no study literature that summarizes the results research related to this topic specifically in the postmajor surgery population. Therefore, the authors are interested in doing literature review on the effect of relaxation benson on pain in post-major surgery.

LITERATURE REVIEW

The International Association for the Study of Pain defines pain as a subjective experience related to the five senses and an unpleasant emotional state that is a response to good tissue injury actual or potential. McCaffery (1997) in the book *Fundamentals nursing*: "Pain is whatever experience the client says and arises at the time it is disclosed". Pain is described as the damage that occurs suddenly or slowly with a high intensity that varies from mild to severe with predictable endings (Potter and Perry 2010; Raja et al. 2020; Rini 2018).

Post-operative pain is defined as the experience of pain felt after surgery and is a very frequent complaint found in almost all postoperative patients (Magidy, et al., 2016). Unbearable and untreated post-surgery pain can lead to affect complications as well as the

recovery period, causing anxiety and hyperadrenergic with secondary immunologic and neuropsychiatric side effects, hemodynamically unstable which can cause intracranial hemorrhage in patients after major craniotomy surgery (Burchiel 2015).

Classification of Post-Surgical Pain In the book *Fundamentals of Nursing, 2010* pain is classified based on several things. Based on the duration of pain can be divided into acute pain with a duration of fewer than six months. The perceived intensity can be varies from mild to severe with minimal emotional response, pain which can recover without treatment, but if not treated will interfere with the recovery process which contributes to complications due to immobilization, increased hospitalization time, and chronic pain (Orr, et al., 2017; Potter and Perry 2010).

Chronic pain is pain that persists duration lasting more than six months with moderate pain intensity which can be grouped into cancer pain, non-cancer pain, and episodic pain (Potter and Perry 2010; Stanos et al. 2016). Based on the etiology, pain is divided into two, namely nociceptive pain and non-nociceptive pain neuropathic pain. Nociceptive pain is divided into somatic pain and visceral pain. The International Association for the Study of Pain (IASP) defines pain nociception as "pain arising from actual or threatened damage to" non-neural tissue and is caused by nociceptor activation. While Neuropathic pain is pain due to lesions or diseases of the somatosensory nervous system, that occurs due to abnormal nerve activity which is divided into two, namely: pain that arises centrally and pain that arises in the peripheral

nerves (Clauw et al. 2019; Orr et al. 2017; Potter and Perry 2010).

Classification of pain is also grouped according to the intensity of pain or pain the amount of pain experienced (Orr et al., 2017). Tools that can be used for measuring the intensity of pain, for example, the Visual Analogue Scale, Graphic Scale, The Numerical Rating Scale uses a number scale with zero "no pain", four to six "moderate pain", seven to nine "severe pain", and 10 "very severe" or worst possible, the Verbal Rating Scale uses 100 mm straight line to subjectively mark "no pain" in one of the end and at the other end the "worst pain", and the Wong-Baker Scale using a six-scale image of facial expressions from smiling to crying used for patients with communication disorders such as in patients with children, the elderly, confused patients, and patients with language barriers (Reuben et al. 2013). Postoperative patients often experience more than one type of pain.

Post-operative pain can be classified as acute pain that is experienced immediately after surgery for up to seven days and chronic pain lasting more than three days months after injury or after surgery. Acute or chronic pain can occur from cutaneous, somatic, and also visceral (Hidayatulloh et al., 2020). Action surgery is usually followed by complaints of acute pain and identification of pain classification can make the selection of effective treatment (Small & Laycock 2020).

The mechanism of the emergence of pain occurs through two processes, namely: peripheral and central (Small & Laycock 2020). The peripheral mechanism consists of: primary and secondary sensitization. Primary sensitization works by activating inflammatory mediators such as bradykinin,

prostaglandins, and leukotrienes. Next secondary sensitization induces the release of substance P (SP) to release histamine from mast cells causing vasodilation and edema (Fields, Howard L. Rathmel 2018).

The central mechanism occurs in the spinal cord and ascending pathways. In the spinal cord, impulses from the periphery enter the spinal cord the dorsal horn which then affects the spinal cord and produces signals to the perceptual area of the brain and is translated into pain. Process on ascending pathway that carries impulses from the spinal cord to the thalamus to the cortex somatosensory brains that produce pain perception including location, intensity, quality of pain, and to the cortical and frontal lobe areas associated with emotional responses such as feelings of pain and behavior control of pain (Fields, Howard L. Rathmel 2018).

Pain management in post-surgical patients can be done non-pharmacologically. Pain management after major surgery is not sufficient if only the paracetamol and NSAID groups are given, the use of Epidural analgesics and opioids via IV line will be needed to obtain a rapid pain reduction effect in postoperative patients. However, pharmacological therapy also has side effects such as ventilation, depression, depression, hemodynamic changes, nausea, vomiting, pruritus, decreased blood pressure, and excessive sedation. In addition, pharmacological therapy also has a dose limit safe and a period of therapeutic effect that can be lost within a certain time (Burchiel 2015). Therefore, the patient still requires therapy other than pharmacology to avoid complications due to drug overdoses (Sujatmiko & Triwiyat, 2015) on several non-pharmacological therapies, relaxation therapy proven

effective as a nursing independent intervention in reducing pain post-surgery, examples of relaxation that have been applied in several practices of nursing are deep breathing techniques, music, progressive muscle relaxation, Benson's relaxation, or a combination of all (Siregar et al., 2018).

Benson relaxation is a simple relaxation technique that combines deep muscle relaxation techniques and an element of one's belief which focuses on the breath and focuses attention by repeating relaxation words to deal with physical and psychological symptoms such as distraction on pain, anxiety, and depression (Fitri et al. 2020; Ju et al. 2019; Teimouri et al. 2019). This relaxation does not require special equipment, more affordable, and easy to learn (Olia et al. 2019). According to Suharto in the Nursing News journal (2017) the purpose of relaxation Benson is to increase the supply of oxygen to the alveoli, maintain stability gas exchange and reduce physical and emotional stress such as lowering pain intensity and blood pressure (Maulinda et al., 2017). Benson Relaxation mechanism in book Dr. Herbert Benson's Relaxation Response by (Mitchell 2013) works by suppressing the stress response of the "fight or flight" reaction by involves the parasympathetic nervous system in lowering blood pressure, lowers heart rate, dilates blood vessels, and fulfills need for oxygen which leads to a relaxed state. The need for oxygen fulfilled activates endorphins as neurotransmitters creates a feeling of relaxation (Aryana & Novitasari 2013).

In accordance with the book The Relaxation Response by Dr. Herbert Benson's in the article by (Mitchell 2013) the following are the steps for implementing the

technique Benson relaxation: 1) Sit in a comfortable and quiet position 2) Close your eyes 3) Relax all your muscles deeply, starting from the legs and going up down to the face. Keep your body relaxed 4) Start breathing through your nose and feel your breath. When you exhale say the word "one" in the heart. For example, start by inhaling then exhaling, and saying the words "peace", do it repeatedly while inhaling and exhaling. Use words that match the beliefs that bring a sense of calm and breathe as usual 5) Continue for 10 to 20 minutes. You can occasionally open your eyes to check the time, but avoid using the alarm. when finished, sit back and relax for a few minutes with your eyes closed and then with the eyes open. Don't stand for a few minutes 6) Don't worry about whether you have reached the relaxation level deep. Keep a passive attitude and let the relaxation persist walk. If any disturbing thoughts arise, try to ignore them and don't think about them, and go back to the first step 7) With continuous practice, responses can emerge with more effort a little. Do this exercise once or twice a day, but not all the time two hours after eating because the digestive process seems to interfere with the emergence of a relaxation response The best time to do the Benson relaxation technique is the first morning for 10-20 minutes. exercises are done once or twice a day enough to provide deep relaxation and inner peace.

Recent literature review through research conducted on post-thoracic surgery patients in Mansoura University Hospital-chest department by design quasi-experimental research with sampling technique using Purposive Sample and continued with random sample grouping. The study was conducted using the McGill Pain Short Form

Questionnaire (SFMPQ). The results showed that the group Benson's relaxation technique intervention experienced significant changes in pain, compared to the control group (Ahmed Mohammed Elmetwaly et al., 2020).

Other supporting research was conducted at Nyi Ageng Hospital by using a quasi-experimental method in post-laparotomy patients. This research was conducted using a pre-test and post-test design with a control group with a sampling technique using consecutive sampling. Pain scale measurement using Numeric Rating Scale (NRS). The results of the study using the Wilcoxon test $p = 0.000$ ($p < 0.05$) in the group intervention and $p = 0,000$ ($p < 0,05$). Meanwhile, in the Mann-Whitney test, the results are $p = 0.000$ means that H_a is accepted, namely the effect of giving Benson relaxation therapy on the pain level of post-laparotomy patients (Aryana & Novitasari, 2013).

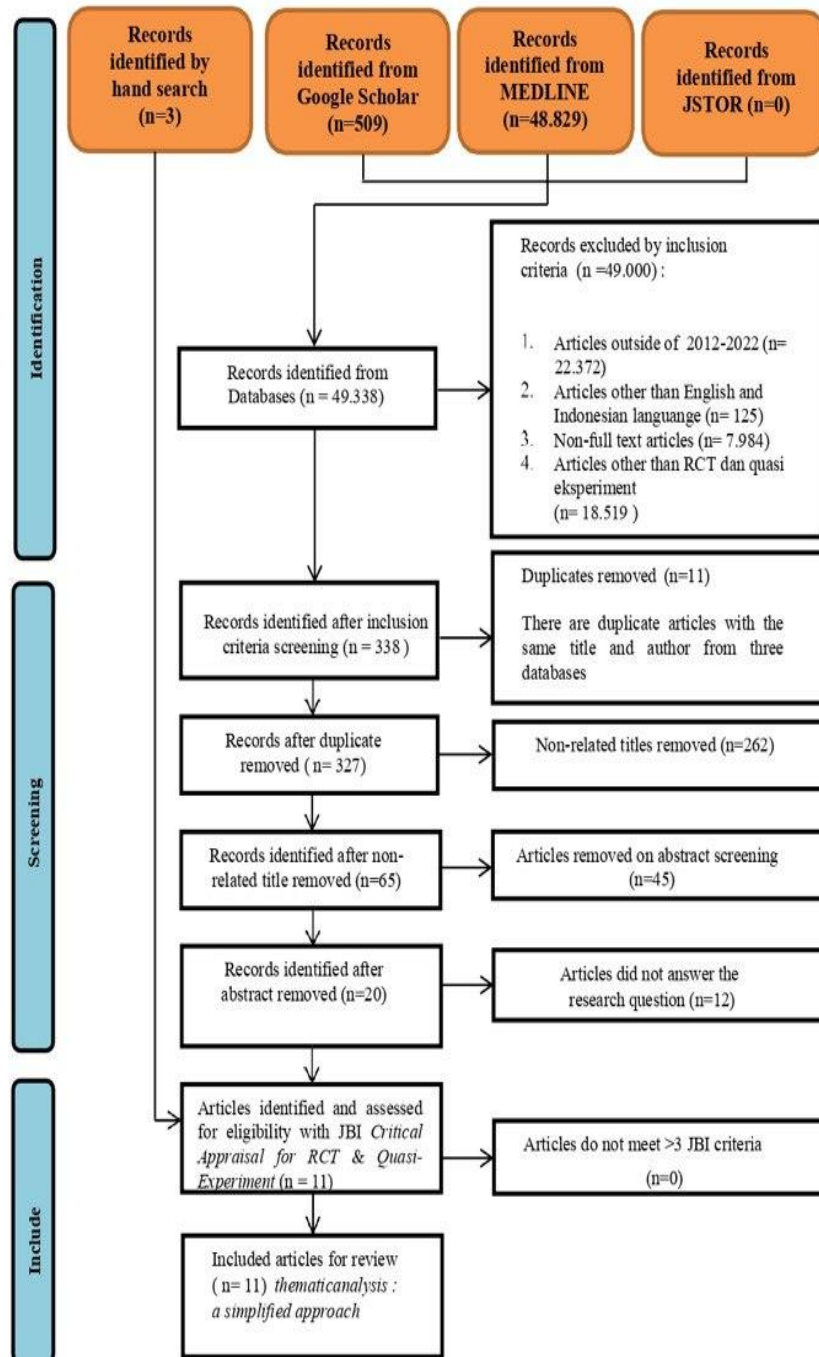
Research by Sari & Kurniawati, (2020) made a comparison between Benson's relaxation therapy and Asmaul Husna's distraction technique with using a quasi-experimental research method with pre and post-test with a non-equivalent control group in patients post-antebrachial surgery at home Sidoarjo general hospital. Sampling using consecutively. technique sampling. The results of the research with the Anova test are results of a p-value 0.000 which means there is a significant difference on the pain scale in patients who given Benson relaxation therapy compared to the group get the Asmaul Husna distraction technique. Benson relaxation therapy is proven can reduce pain better than Asmaul Husna in post-menopausal patients brachial fracture surgery at Sidoarjo Hospital (Sari & Kurniawati 2020).

METHODE

The research method used in this study is a systematic literature review. The strategy for searching articles and journals uses several databases such as Google Scholar, MEDLINE and JSTOR. The keywords used in the literature search were "Benson relaxation" AND pain AND after surgery AND major surgery in English and "Benson relaxation" AND pain AND postoperative AND major surgery" in Indonesian.

The inclusion criteria for searching literature were research articles in English and in Indonesian, articles published in 2012-2022, articles with free full-text access available, articles with RCT research designs and quasi-experiments. The exclusion criteria used were literature review, articles with the type of case reports, articles that did not answer the research questions.

Data analysis was carried out using the PRISMA flow diagram table. A total of 11 articles were tested for feasibility using the JBI (Joanna Briggs Institute) Critical Appraisal Checklist for Randomized Controlled trials and JBI (Joanna Briggs Institute) quasi-experimental.



No	Authors	Purpose	Methodology, Instrument and Populataion & Sample	Result
1.	Pishgooie, S., Akbari, F., Shahrestanaki, S., Rezaei, M., Nasiri, M., & Momen, R. (2020). Effects of Relaxation Techniques on Acute Postlaminectomy Pain: A Three-Arm Randomized Controlled Clinical Trial	Compare therapeutic effect benson relaxation and progressive muscle relaxation on intensity sick after laminectomy	Three-arm randomized, nonblinded and parallel group trial Measuring tools that used i.e Visual analog scale and data analyzed use test Kolmogorov Smirnov and ANOVA The sample in this study are 93 patients who undergo lumbar laminectomy choice with general anesthesia at AJA Medical University khanevadeh science, Besat and Emam Reza	Research result shows that Benson relaxation and relaxation progressive muscle give significant effect reduce pain compared control group in patients after laminectomy
2.	ELmetwaly, A., Shaaban, E., & Mohamed, E. (2020). Benson Relaxation Technique: Reducing Pain Intensity, Anxiety level and Improving Sleep Quality among Patients Undergoing Thoracic Surgery	This study aims to determine the effect of Benson relaxation in reducing pain intensity, anxiety and improve the quality of sleep between patient who undergo thoracic surgery	This research use quasi-experimental research design, Data collection using four tools : 1. Interview questionnaire sheet 2. The short Form McGill Pain Questionnaire (SFMPQ) 3. The Groningen Sleep Quality Scale (GSQS) 4. Hospital Anxiety and Depression Scale (HADS), Samples that used in this research as much as 160 patients who undergo thoracic surgery in surgery Mansoura's chest Hospital and Mansoura University hospital-chest department.	Research result shows that Benson relaxation and relaxation progressive muscle give significant effect reduce pain compared control group in patients after laminectomy
3.	Parmar, R., & Tiwari, A. (2021). Effect of Benson's Relaxation Therapy on Post Caesarean Section Pain and Stress: A Pilot Study	Evaluate effect from Benson relaxation in reducing pain and stress in postpartum mothers	This research method uses the type of research quasi experiment with pre-test post-test control design group	Research result show that benson relaxation is effective in reduce pain

	Caesarean section	Pain measurement tool used is Numerical pain rating scale and Modified Hung's postpartum scale this research sample that is as much as 10 post-surgery women Caesar in Hospital Anand District. Example using a Non-probability convenient sampling technique.	and stress level
4.	Renaldi,A.,Maryana., Donsu, J. D. T. (2020).Benson Relaxation on Pain Perception Levels in Post Laparotomy Patients at Nyi Ageng Hospital Serang	This study aims to determine the effect of Benson's relaxation technique on the level of pain perception in post-laparotomy patients at Nyi Ageng Hospital, Serang.	This type of research is a quasi-experimental with a pre-test and post-test design with a control group. Tools that used is the Numeric Rating Scale. The population of this study was 105 postoperative patients laparotomy in RSUD Nyi Ageng Serang and 70 samples. The results of this study showing that benson relaxation can decrease the level pain between intervention group and group control. Before given intervention as much as possible 80% experienced moderate pain and 20% mild pain. After being given intervention 80% experiencing pain light and 20% experiencing pain at the moment.
5.	Sari, I. P., Dwikora., & Kurniawati, N. D. (2020). Comparison of Asmaul Husna and Benson Relaxation on Decreasing of Pain among Patients with Post Antebrachii	Comparing the effect of Asmaul Husna relaxation and Benson relaxation on reducing pain in patients with post	The type of research is a quasi-experimental pre-test with a non-equivalent control group Pain intensity is measured subjectively and objective and analyzed by descriptive The results showed that Benson's relaxation was proven to be more effective than Asmaul Husna's

	Operated at Public Hospital Sidoarjo.	antebrachial fracture surgery at Sidoarjo Hospital	statistics, namely the ANOVA t-test. The sample in this study was 28 patient after Antebrachii surgery at Sidoarjo Hospital.	distraction in reducing pain in post-antebrachial surgery patients.
6	Fitri, N, L., Immawati, Sari, A, A., Ludiana, & Purwono, J. (2018) The Effect Of Relaxation on The Intensity of Section Cesarea Post Women Pain at Muhammadiyah Metro Hospital in 2018	To find out the effect of Benson Relaxation on the intensity of maternal pain after cesarean section at Muhammadiyah Metro Hospital in 2018	The type of research is quasi-experimental design nonequivalent control group/ non-randomized control group pre-test and post-test The method of collecting data on the results of pain measurements using the Visual Analogue Scale (VAS) The sample in this study was 32 people from 127 maternal population after caesarean section at Muhammadiyah Metro Hospital	The results of this study showed a significant difference in pain intensity between the control group and the intervention group in post-cesarean patients before and after being given Benson relaxation
7.	Yusliana, A., Misrawati., & Safri. (2015) Efektivitas Relaksasi Benson Terhadap Penurunan Nyeri Pada Ibu Postpartum Sectio Caesarea	To find out the effectiveness of Benson's relaxation in reducing pain in post-partum caesarean section mothers	The type of research is quasi-experimental with pre-test and post-test design with a control group Instruments that used to measure pain intensity is numeric rating scale Sample in This study amounted to 30 in post-cesarean mothers.	Benson relaxation effective for reducing pain in postpartum cesarean mothers with a decrease in pain in the intervention group by 2.86 (mild pain) and 3.76 (moderate pain) in the control group after giving Benson relaxation
8.	Windartik, E., Yuniarti, E., & Akbar, A. (2017) Effectiveness of Relaxation Handheld Finger technique and Benson Relaxation to	Proving the effectiveness of the two relaxations on the pain level of post-cesarean	The type of research is quasi-experimental with pre-post control group The instrument used is a numerical rating scale	Benson relaxation has a good effect in reducing pain in patients after

	the Changes Level of Post Operative Pain Sectio Caesarea in Rsi Sakinah Mojokerto	section patients	The sample in this study were 20 mothers after caesarean section	caesarean section, but handheld Finger technique proven to be more effective
9.	Rasubala, G., Kumaat, L., & Mulyadi (2017) Pengaruh teknik relaksasi benson terhadap skala nyeri pada pasien post operasi di RSUP. prof. dr. r.d. kandou dan rs Tk.iii r.w. Mongisidi teling Manado	Finding out the effect of relaxation techniques on postoperative pain in appendicitis patients at Rs. Prof. Dr. R.D. Kandou and Rs. Kindergarten III R.W. Mongosidi Ear Manado	This type of research is Quasi-Experiment with pre-post test without control group The instrument used is a numerical rating scale The sample in this study were 16 post-operative appendicitis patients	Benson relaxation effective in reduce pain in postoperative patients appendicitis
10.	Manurung, M., Manurung, T., & Siagian, P. (2019) Pengaruh teknik relaksasi benson terhadap penurunan skala nyeri post appendixotomy di rsud porsea	Analyzing the effect of Benson's relaxation in reducing pain in post-operative appendectomy patients at Porsea Hospital	Research type Quasi-Experiment post-test only control group design The instrument used is a numerical rating scale The sample in this study were 18 patients after appendixotomy surgery	The decrease in pain scale occurred after being given Benson relaxation therapy
11.	Mohamed, S., Thabet, O., Mohamed, R., & Sayed., Z. (2021) Effect of Foot Reflexology Massage versus Benson Relaxation Technique on Physiological Parameters and Pain after Open Heart Surgery	Studying the effect of foot reflexology massage vs Benson relaxation technique on psychological parameters and pain	Type of research RCT (Randomized Controlled Trial) The instrument used is a patient assessment sheet and Assessment of chest pain intensity, measured using a Visual Analog Scale The sample in this study were 90 post-cardiac surgery patients	There were significant differences between groups in all aspects of psychological and postoperative pain after Benson relaxation was applied, but foot reflexology proved to be more effective

DISCUSSION

Decrease in pain intensity

Decrease in Pain Intensity The first findings of this literature review showed that there was an effect of benson relaxation on postoperative pain reduction in patients in the control group and the intervention group. Pain intensity was measured by pain measuring instruments, namely the Visual Analogue Scale, ShortForm McGill Pain Questionnaire (SFMPQ), and NRS (Numeric Rating Scale) which were applied before and after the intervention. The results of the measurement of pain intensity showed that the level of pain before being given benson relaxation was at a moderate to severe level. Meanwhile, after the intervention, the pain level was mild to moderate. This is also in line with the research of Solehati & Rustina (2015) that 75% of post-surgical patients experience pain at moderate to severe pain severity after undergoing surgical procedures. The study also showed the effect of benson relaxation on reducing pain intensity in patients after cesarean section. Therefore, there is a significant change in pain intensity before and after the intervention was given in the control group and the intervention group. According to research by (Yusliana et al. 2015) which states that there is a relationship between respondent characteristics and pain intensity is the age factor that affects individual responses to pain because as age increases, individuals can withstand and control the pain or pain experienced. This is contrary to research conducted by Solehati & Rustina (2015) which states that age does not affect pain intensity because pain is subjective and each individual has a different pain

response. Another factor that can affect pain is ethnicity, as evidenced by the research of Yusliana et al. (2015) that the Minang tribe is more expressive when responding to pain. This study also states that education level has a relationship with the pain response. The level of education will influence thinking and individual behavior in managing information and in dealing with pain. **Duration of Intervention** The second finding is the time span of giving benson relaxation based on the duration and frequency that is effective in reducing pain. The results of the literature review show that the duration needed to provide benson relaxation interventions is around 10 to 30 minutes with the required frequency of one to three times a day with the intervention starting two hours after the patient is in a *compos mentis* state and carried out for two to three days consecutive. The provision of these interventions has a relationship with the severity of severe pain in postoperative patients. This statement is supported by research conducted by Small & Laycock (2020) which states that postoperative patients experience severe pain within 24 to 48 hours after undergoing surgical procedures.

Benson Relaxation Procedure

The third finding regarding the benson relaxation procedure shows that the procedure for carrying out benson relaxation can be summarized in five main steps.

- 1) Sit in a comfortable and quiet position
- 2) Ask the client to close their eyes
- 3) Start to relax the whole body from toe to head
- 4) Relax breathing by inhaling through the nose and exhaling through the mouth
- 5) Say one word calmly and slowly after exhaling. The word can be in the form of reciting God's name, numbers,

or any words that can provide peace of mind for the patient which is adjusted to the patient's beliefs. Although there are various variations of spiritual words spoken, all of them have been proven to have an influence on reducing postoperative pain in patients. According to Ibrahim et al (2019) these five steps are the standard benson relaxation techniques that are most often used. Every step taken in the benson relaxation procedure can be adjusted to the conditions of this relaxation target, such as giving a position in the early stages of benson relaxation. The appropriate sitting position is sitting upright and relaxed, namely sitting position 90° . However, this position can be modified such as giving a half-sitting position, which is 30° - 45° . The results of this literature review conclude that an upright sitting position or a semi-sitting supine position can be done. The main purpose of giving the position is so that the patient gets a relaxed feeling that can reduce the pain felt by post-major surgery patients. This is in line with the research of Mirhosseini & Ajorpaz (2017) that the main purpose of giving a sitting position in benson relaxation is to provide a sense of comfort because patients who feel comfortable and relaxed can easily maintain focus in carrying out benson relaxation therapy steps. Benson relaxation affects the body's mechanism in reducing pain, namely focusing on breathing and a relaxed state. This literature review found an effective mechanism for reducing pain in post-major surgery patients, namely the endorphin mechanism. The mechanism of endorphins works by meeting the needs of oxygen in the body, especially the brain, thereby triggering a relaxed state. A relaxed state in the body will trigger a response to the release of the hormones enkephaline and endorphins which work by blocking pain impulses

so that pain impulses that should go to the brain to be perceived are blocked. Benson relaxation is proven to have a calming effect that affects physiological responses related to oxygen consumption, CO₂ production, pulse, blood pressure, respiratory response, and vital capacity (H et al., 2021). Another study by Ju et al (2019) provides a different mechanism for reducing pain, namely the gate control theory. The gate control theory mechanism works by inhibiting transmission from the spinal cord to the central nervous system (CNS) by closing the substantia gelatinosa gate so that impulses cannot be perceived in the spinal cord and the pain response can be controlled. The mechanism of endorphins is in accordance with the main focus of Benson's relaxation, which works by control of breathing in achieving a relaxed body state. A relaxed state of the body can inhibit the perception of pain so that pain can be reduce.

Benson Relaxation Benefits

The findings of these four literature reviews found that there are other benefits of benson relaxation which are also effective in reducing anxiety levels, reducing stress levels, improving sleep quality, and being able to control physiological parameters such as heart rate, respiratory rate, blood pressure, mean artery pressure, oxygen saturation. This is in line with the results of the study by Poorolajal et al., (2017) which can reduce hemodynamic status (systolic and diastolic blood pressure, pulse, heart rate, and respiratory rate) in patients undergoing coronary artery bypass graft (CABG), coronary angiography (CAG) and percutaneous intervention (PCI), and other general surgeries (Poorolajal et al. 2017; Teimouri et al. 2019). Poorhosseini et al., (2020) also found that Benson relaxation could be a complementary therapy option to

improve sleep quality in post-CABG patients. However, Pardede & Tarigan (2020) showed that pre-operative anxiety can be reduced by benson relaxation in the intervention group, but according to the results of the questionnaire analysis, there were 14.3% of pre-Sectio Caesarea patients who did not experience a decrease in anxiety level because the patient had a feeling that something was going to happen. bad things will happen, and imagine the doctor will cut parts of his body. From the findings of these four literature reviews, it can be concluded that benson relaxation has a positive role by providing a relaxed feeling, and the secretion of the hormone cortisol by the glands which can reduce stress levels, and anxiety, and improve sleep quality. However, the success of benson relaxation in terms of reducing anxiety is not always effective because it is influenced by the individual's perception of one thing that is worried about.

Giving Benson Relaxation Companion Pharmacology

The fifth finding is regarding the pharmacological therapy received by research participants before being given Benson relaxation. The choice of pharmacological therapy based on Chou et al. (2016) in patients after thoracic surgery and total knee replacement or total hip replacement can be in the form of opioids, NSAIDs, and/or acetaminophen, Gabapentin or pregabalin, i.v. ketamine. Post-CABG patients may take opioids, acetaminophen, Gabapentin or pregabalin, i.v. ketamine. Meanwhile, pharmacological therapy options for post-cesarean section patients can be opioids, NSAIDs, and/or acetaminophen. One of the results of this literature review stated that pharmacological therapy was given to three groups of patients after laminectomy surgery (BRT control,

PMR) namely morphine (5 mg, IV) and Pethidine (25 mg, IM) PRN before being given complementary therapy in the form of PMR and benzene relaxation. in the intervention group. The route for administering opioids 10 via the IV route based on research Ruetzler et al., (2014) is not superior to oral. The oral route of administration does have a moderate level of evidence-based practice, but the oral route takes longer so the i.v route is required for postoperative pain for 24 hours because of the need for dose titration and the lack of evidence for EBP to support the superiority of short-acting oral opioids. However, the IM route is not recommended for postoperative pain relief because it causes severe pain and poor absorption. The results of the literature review also explain that effective postoperative pain management can reduce the risk of postoperative complications, increase comfort, and reduce treatment costs. Pharmacological and non-pharmacological interventions needed for postoperative pain management but also need to be considered (Elsamadicy et al. 2017). Post-operative pain management is essential to prevent complications such as the potential for persistent pain, and paralytic ileus associated with immobilization. Ismail (2012) inhibits the neuroendocrine response to pain which accelerates the return of body functions in postoperative patients. From the results of this literature review, it can be concluded that post-major surgery pain usually lasts a long time, so the use of analgesics is necessary to achieve effective pain management. Effective pain management can be in the form of pharmacological and non-pharmacological therapy. Pharmacological therapy after major surgery may include opioids, NSAIDs, acetaminophen, gabapentin, or pregabalin. via the IV route to achieve

a good therapeutic effect within 24 hours of major surgery for pain management. However, every pharmacological therapy has side effects so complementary is needed. Effective pain management is also needed to reduce the risk of postoperative complications and accelerate the return of body functions thereby reducing the length of stay.

CONCLUSION

Based on the findings of this literature review, it can be concluded that benson relaxation has been shown to have a significant effect on reducing pain in postmajor surgery patients. Benson relaxation was found to be effective as a complementary therapy that accompanies pharmacological therapy to reduce pain from moderate to severe to mild to moderate in post-major surgery patients (laminectomy, appendectomy, cesarean section, laparotomy, thoracic surgery, open-heart surgery, antebrachial). Benson relaxation can be given with a duration of 10 to 30 minutes and a frequency of one to three times a day. Benson relaxation is carried out with five main steps that can be varied based on the patient's condition. An effective starting position is sitting upright 90° or half-sitting position 30° - 45° . There are two mechanisms involved in benson relaxation, namely the mechanism of endorphins and gate control. Both of these mechanisms are effective in reducing pain in post-major surgery patients. Besides being able to reduce pain in post-major surgery patients, benson relaxation is effective in dealing with physical stress such as lowering blood pressure, pulse, respiration, heart rate, and increasing oxygen saturation. Then benson relaxation can also overcome psychological stress such as anxiety,

and improve sleep quality, and hospital anxiety.

REFERENCES

- Ahmed Mohammed Elmetwaly, A., Gaad El Moula Shaaban, E., & Mahmoud Hafez Mohamed, E. (2020). Benson Relaxation Technique: Reducing Pain Intensity, Anxiety Level And Improving Sleep Quality Among Patients Undergoing Thoracic Surgery. *Egyptian Journal Of Health Care*, 11(4), 602-614. <https://doi.org/10.21608/Ejhc.2020.160893>
- Akbar, A., Romandi, S., & Andrianovita, D. (2015). Hubungan Antara Tingkat Kecemasan Pre-Operasi Dengan Derajat Nyeri Pada Pasien Post Setio Caesarea Di Rumah Sakit Muhammadiyah Palembang Tahun 2014. *Jurnal Keperawatan Sriwijaya*, 2(1), 1-9.
- Aryana, K. O., & Novitasari, D. (2013). Pengaruh Tehnik Relaksasi Benson Terhadap Penurunan Tingkat Stres Lansia Di Unit Rehabilitasi Sosial Wening Wardoyo Ungaran. *Jurnal Keperawatan Jiwa*, 1(2), 186-195.
- Ashrastaghi, O., Ayasi, M., Gorji, M. H., Habibi, V., Yazdani, J., & Ebrahimzadeh, M. (2015). The Effectiveness Of Lavender Essence On Strernotomy Related Pain Intensity After Coronary Artery Bypass Grafting. *Advanced Biomedical Research*, 4(1), 127. <https://doi.org/10.4103/2277-9175.158050>
- Burchiel, K. (2015). Section III.I. In P. Kehr (Ed.), *Surgical Management Of Pain* (2nd Ed., Pp. 293-307). Thieme. <https://doi.org/10.1055/B-002-102571>
- Chou, R., Gordon, D. B., De Leon-Casasola, O. A., Rosenberg, J. M.,

- Bickler, S., Brennan, T., Carter, T., Cassidy, C. L., Chittenden, E. H., Degenhardt, E., Griffith, S., Manworren, R., Mccarberg, B., Montgomery, R., Murphy, J., Perkal, M. F., Suresh, S., Sluka, K., Strassels, S., ... Wu, C. L. (2016). Management Of Postoperative Pain: A Clinical Practice Guideline From The American Pain Society, The American Society Of Regional Anesthesia And Pain Medicine, And The American Society Of Anesthesiologists' Committee On Regional Anesthesia, Executive Commi. *Journal Of Pain*, 17(2), 131-157.
<https://doi.org/10.1016/j.jpain.2015.12.008>
- Clauw, D. J., Essex, M. N., Pitman, V., & Jones, K. D. (2019). Reframing Chronic Pain As A Disease, Not A Symptom: Rationale And Implications For Pain Management. *Postgraduate Medicine*, 131(3), 185-198.
<https://doi.org/10.1080/00325481.2019.1574403>
- El-Shahat, M., Ali, H. H., & Metwaly, S. (2017). *Comparative Study Between Major And Minor Pre-Operative Anxiety And Fear Regarding Patients Undergoing Surgery*. 13(2), 190-204.
- Elsamadicy, A. A., Adogwa, O., Warwick, H., Sergesketter, A., Lydon, E., Shammas, R. L., Mehta, A. I., Vasquez, R. A., Cheng, J., Bagley, C. A., & Karikari, I. O. (2017). Increased 30-Day Complication Rates Associated With Laminectomy In 874 Adult Patients With Spinal Deformity Undergoing Elective Spinal Fusion: A Single Institutional Study. *World Neurosurgery*, 102, 370-375.
<https://doi.org/10.1016/j.wneu.2017.03.096>
- Fields, Howard L. Rathmel, J. P. (2018). Chapter 10: Pain: Pathophysiology And Management. *Harrison's Principles Of Internal Medicine, 20e, C*, 10-20.
- Fitri, N. L., Immawati, Sari, S. A., Ludiana, & Purwono, J. (2020). The Effect Of Relaxation Of Benson On The Intensity Of Section Cesarea Post Women Pain At Muhammadiyah Metro Hospital In 2018. *European Journal Of Molecular And Clinical Medicine*, 7(6), 630-637.
- H, S. S. T., Untar, R., & Daryani. (2021). Benson Relaxation Relieve A Pain In Coronary Syndrome Patients. *Advances In Social Science, Education And Humanities Research*, 535.
- Harahap, M. A., Ritonga, N., Program, D., Keperawatan, S., Sarjana, P., Aufa, U., Kota, R., Program, D., Kebidanan, S., Sarjana, P., Aufa, U., Kota, R., Program, D., Ilmu, S., Masyarakat, K., Sarjana, P., Aufa, U., Kota, R., Operasi, P., & Dzikir, T. (2021). Jurnal Kesehatan Ilmiah Indonesia Indonesian Health Scientific Journal Pengaruh Dzikir Terhadap Penurunan Tingkat Kecemasan Pasien Pre Operatif Bedah Mayor Di Ruang Rawat Bedah Jurnal Kesehatan Ilmiah Indonesia Indonesian Health Scientific Journal. *Jurnal Kesehatan Ilmiah Indonesia Indonesian Health Scientific Journal*, 000, 45-52.
- Hidayatulloh, A. I., Limbong, E. O., & Ibrahim, K. I. (2020). Pengalaman Dan Manajemen Nyeri Pasien Pasca Operasi Di Ruang Kemuning V Rsup Dr. Hasan Sadikin Bandung: Studi Kasus. *Jurnal Ilmu Keperawatan Dan Kebidanan*, 11(2), 187.
<https://doi.org/10.26751/jikk.v11i2.795>
- Ibrahim, A., Koyuncu, N., Suzer, N. E., & Cakir, O. D. (2019). *The Effect Of Benson Relaxation Method On*

- Anxiety In The Emergency Care*. 21(November 2018).
- Ismail, S. (2012). What Is New In Postoperative Analgesia After Caesarean Sections? *Anaesthesia, Pain And Intensive Care*, 16(2), 123-126.
- Ju, W., Ren, L., Chen, J., & Du, Y. (2019). Efficacy Of Relaxation Therapy As An Effective Nursing Intervention For Post-Operative Pain Relief In Patients Undergoing Abdominal Surgery: A Systematic Review And Meta-Analysis. *Experimental And Therapeutic Medicine*, 2909-2916. <https://doi.org/10.3892/etm.2019.7915>
- Keihani, Z., Jalali, R., Shamsi, M. B., & Salari, N. (2019). Effect Of Benson Relaxation On The Intensity Of Spinal Anesthesia-Induced Pain After Elective General And Urologic Surgery. *Journal Of Perianesthesia Nursing*, 34(6), 1232-1240. <https://doi.org/10.1016/j.jopan.2019.05.005>
- Magidy, M., Warrén-Stomberg, M., & Bjerså, K. (2016). Assessment Of Post-Operative Pain Management Among Acutely And Electively Admitted Patients - A Swedish Ward Perspective. *Journal Of Evaluation In Clinical Practice*, 22(2), 283-289. <https://doi.org/10.1111/jep.12475>
- Maulinda, I., Candrawati, E., & Adi, R. C. (2017). Pengaruh Terapi Relaksasi Benson Terhadap Kualitas Tidur Lansia Di Posyandu Permadi Tlogomas Kota Malang. *Journal Nursing News*, 2(3), 580-587.
- Mayasari, C. D. (2016). Pentingnya Pemahaman Manajemen Nyeri Non Farmakologi Bagi Seorang Perawat. *Jurnal Wawasan Kesehatan*, 1(1), 35-42.
- Mirhosseini, S., & Ajorpaz, N. M. (2017). *The Effect Of Benson Relaxation Technique On General Health In Multiple Sclerosis (MS) Patients In Kashan , Iran: A Randomized Controlled Trial*. 26. <https://doi.org/10.29252/jgbfnm.18.1.17>
- Mitchell, M. (2013). Dr . Herbert Benson ' S Relaxation Response. *Psychology Today*.
- Morita, K. M., Amelia, R., & Putri, D. (2020). Pengaruh Teknik Relaksasi Benson Terhadap Penurunan Nyeri Pada Pasien Post Operasi Sectio Caesarea Di RSUD Dr. Achmad Mochtar Bukittinggi. *Jurnal Riset Hesti Medan Akper Kesdam I/BB Medan*, 5(2), 106. <https://doi.org/10.34008/jurhesti.v5i2.197>
- Olia, J. B. H., Zinalpoor, S., Sakhaei, S., Sadagheyani, H. E., & Motaarefi, H. (2019). The Influence Of Benson Relaxation On Oxidative Stress Marker Of Premenstrual Syndrome In Students Of Khoy University Of Medical Sciences. *Open Access Macedonian Journal Of Medical Sciences*, 7(23), 4149-4154. <https://doi.org/10.3889/oamjms.2019.865>
- Orr, P. M., Shank, B. C., & Black, A. C. (2017). The Role Of Pain Classification Systems In Pain Management. *Critical Care Nursing Clinics Of North America*, 29(4), 407-418. <https://doi.org/10.1016/j.cnc.2017.08.002>
- Pardede, J. A., & Tarigan, I. (2020). The Anxiety Level Of Mother Presectio Caesar With Benson's Relaxation Therapy. *Jendela Nursing Journal*, 4(1), 20-28. <https://doi.org/10.31983/jnj.v4i1.5801>
- Pishgooie, S. A. H., Akbari, F., Keyvanloo Shahrestanaki, S., Rezaei, M., Nasiri, M., & Momen, R. (2020). Effects Of Relaxation

- Techniques On Acute Postlaminectomy Pain: A Three-Arm Randomized Controlled Clinical Trial. *Journal Of Perianesthesia Nursing*, 35(5), 533-538.
<https://doi.org/10.1016/j.jopan.2020.02.004>
- Poorhosseini, H., Tavolinejad, H., Aminorroaya, A., Soleimani, H., Aasham, O., Jalali, A., Mohammadi, A., Beigi, S. S., Sadeghian, S., Bagheri, J., & Tajdini, M. (2020). The Association Of Statins For Secondary Prevention With Progression To Diabetes In Patients With Prediabetic State After Coronary Artery Bypass Graft Surgery: A Retrospective Cohort Study. *Journal Of Diabetes And Its Complications*, 34(12), 107713.
<https://doi.org/10.1016/j.jdiacomp.2020.107713>
- Poorolajal, J., Ashtarani, F., & Alimohammadi, N. (2017). Effect Of Benson Relaxation Technique On The Preoperative Anxiety And Hemodynamic Status: A Single Blind Randomized Clinical Trial. *Artery Research*, 17, 33-38.
<https://doi.org/10.1016/j.artres.2017.01.002>
- Potter, P. A. P., & Perry, A. . (2010). *Fundamental Of Nursing* (7th Ed.). Salemba Medika.
- Raja, S. N., Carr, D. B., Cohen, M., Finnerup, N. B., Flor, H., Gibson, S., Keefe, F. J., Mogil, J. S., Ringkamp, M., Sluka, K. A., Song, X. J., Stevens, B., Sullivan, M. D., Tutelman, P. R., Ushida, T., & Vader, K. (2020). The Revised International Association For The Study Of Pain Definition Of Pain: Concepts, Challenges, And Compromises. *Pain*, 161(9), 1976-1982.
<https://doi.org/10.1097/j.pain.0000000000001939>
- Reuben, D. B., Magasi, S., McCreath, H. E., Bohannon, R. W., Wang, Y. C., Bubela, D. J., Rymer, W. Z., Beaumont, J., Rine, R. M., Lai, J. S., & Gershon, R. C. (2013). Motor Assessment Using The NIH Toolbox. *Neurology*, 80(11 Suppl 3).
<https://doi.org/10.1212/Wnl.0b013e3182872e01>
- Rini, S. (2018). Penurunan Nyeri Pada Ibu Post Sectio caesaria Pasca Intervensi Biologiscnurturing Baby Led Feeding. *MEDISAINS* 16(Agustus), 83.
<https://doi.org/10.22069/jwfst.2018.15021.1747>
- Ruetzler, K., Blome, C. J., Nabecker, S., Makarova, N., Fischer, H., Rinoesl, H., Goliash, G., Sessler, D. I., & Koinig, H. (2014). A Randomised Trial Of Oral Versus Intravenous Opioids For Treatment Of Pain After Cardiac Surgery. *Journal Of Anesthesia*, 28(4), 580-586.
<https://doi.org/10.1007/S00540-013-1770-X>
- Sari, I. P., & Kurniawati, N. D. (2020). Comparison Of Asmaul Husna And Benson Relaxation On Decreasing Of Pain Among Patients With Post Antebrachii Operated At Public Hospital Sidoarjo. *International Journal Of Nursing And Health Services (IJNHS)*, 3(1), 417-422.
<https://doi.org/10.35654/ijnhs.V3i1.173>
- Siregar, T., Ratnawati, D., & Wahyudi, C. T. (2018). Terapi Relaksasi Benson Termodifikasi Efektif Mengontrol Gula Darah Pada Lansia Dengan Diabetes Mellitus. *Jurnal Kedokteran Dan Kesehatan*, 14(2), 83-93.
<https://jurnal.umj.ac.id/index.php/JKK>
- Small, C., & Laycock, H. (2020). *Acute Postoperative Pain Management*. 20-22.
<https://doi.org/10.1002/bjs.11477>
- Solehati, T., & Rustina, Y. (2015).

- Benson Relaxation Technique In Reducing Pain Intensity In Women After Cesarean Section. *Anesthesiology And Pain Medicine*, 5(3).
<https://doi.org/10.5812/Aapm.22236v2>
- Stanos, S., Brodsky, M., Argoff, C., Clauw, D. J., D'Arcy, Y., Donevan, S., Gebke, K. B., Jensen, M. P., Lewis&Clark, E., Mccarberg, B., Park, P. W., Turk, D. C., & Watt, S. (2016). Rethinking Chronic Pain In A Primary Care Setting. *Postgraduate Medicine*, 128(5), 502-515.
<https://doi.org/10.1080/00325481.2016.1188319>
- Sujatmiko, & Triwiyat, E. (2015). Pengaruh Pemberian Aromaterapi Lavender Terhadap Tingkat Nyeri Pada Pasien Gastritis Di 58 Ruang Dahlia RSUD Nganjuk. *Jurnal Stikes Nganjul*.
- Teimouri, F., Pishgooie, S. A., Malmir, M., & Rajai, N. (2019). The Effect Of Benson Relaxation On Physiological Criteria In Patients Undergoing Coronary Artery Bypass Graft Surgery. *Complementary Medicine Journal Arak*, 9(3), 3812-3823.
- Yesim Yaman, A. &, & Yilmaz, E. B. (2017). Association Of Pain, Anxiety, Depression, And Sleep Patterns In Postoperative Turkish Patients. *KMJ-Kuwait Medical Journal*, 49(4), 306-312.
- Yusliana, A., Studi, P., Keperawatan, I., & Riau, U. (2015). Efektivitas Relaksasi Benson Terhadap Penurunan Nyeri Pada Ibu Postpartumsectio Caesarea. 2(2).