

ANALYSIS OF EARLY MOBILIZATION INTERVENTIONS ON CHANGES IN PAIN LEVELS IN POSTOPERATIVE APPENDECTOMY PATIENTS AT THE ROYAL PRIMA HOSPITAL IN MEDAN IN 2024

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Abstract: Appendicitis, which involves inflammation of the appendix, can cause severe pain and requires immediate medical attention. Appendectomy surgery is effective in treating this condition, although it carries a risk of complications such as wound infection or bleeding. Postoperative pain experienced by appendectomy patients varies and can affect their quality of life and recovery. Therefore, pain control is becoming an essential focus in postoperative care, with early mobilization recognized as a strategy that can speed recovery and reduce the risk of complications. This study aims to provide deeper insight into pain changes in postoperative appendectomy clients. This study used a correlational descriptive design with a group Pretest-Posttest approach to examine the effect of early mobilization on pain changes in postoperative appendectomy clients at RSU Royal Prima Medan. Wilcoxon Test results showed a significant reduction in postoperative appendectomy pain levels at Royal Medan Hospital after early mobilization (p-value = 0.000, Z = -2.002). Of the 17 patients observed, the average pain level dropped from 3.84 to 2.45. These results confirm the effectiveness of early mobilization in statistically reducing pain. The majority of postoperative appendectomy clients experience increased pain before early mobilization, while after early mobilization, the majority experience a slight increase in pain. There is an effect of early mobilization on pain changes in postoperative appendectomy clients at Royal Prima Hospital in 2024.

Keywords: Appendicitis, Surgical Appendectomy, Postoperative pain, Early mobilization.

I. INTRODUCTION

Appendectomy surgery is a surgical procedure performed to remove the appendix (appendix) (1). The appendix is a small organ in the lower right of the abdomen (2). If there is inflammation of the appendix (3); (Hidayat, 2023), this condition is called appendicitis, which can cause severe pain and requires immediate medical treatment (5). Appendectomy surgery is a standard and effective procedure in treating appendicitis. However, as with any other medical procedure, there is a risk of possible complications, such as wound infection, bleeding, or a reaction to anesthesia (6). Therefore, patients must follow the doctor's instructions carefully during the pre-operative, surgical, and postoperative periods to ensure optimal recovery.

Patients who undergo Appendectomy often experience postoperative pain that can affect their recovery (7); (8). Post-appendectomy patients often experience varying levels of pain, which can affect their quality of life, physical activity, and speed of recovery (9). In addition, pain that is not well controlled can also contribute to the risk of postoperative complications (10). Pain is subjective; no two individuals experience the same pain, and no two occurrences of the same pain produce identical responses or feelings in an individual. Pain is a source of frustration, both for clients and for health workers.

Pain control is significant in postoperative patients; pain relief can reduce anxiety (Nurdiansyah, 2015), breathe more profoundly, and be more accessible to tolerate rapid mobilization (12). Pain assessment and analgesic suitability should be used to ensure that postoperative patient pain can be relieved, with the overall goal of pain management being to reduce pain as much as possible with the least possible side effects. Early mobilization has been recognized as a strategy that can improve postoperative recovery by accelerating the recovery of organ function, reducing the risk of thromboembolic complications, and enhancing fluid and electrolyte balance (Nurfazatie, 2019). Although many studies have been conducted on early mobilization in surgical patients, specific data from Royal Prima Medan Hospital or the local area are limited. Therefore, this study will provide deeper insights into the effectiveness of early mobilization interventions in postoperative appendectomy patients in specific medical environments. The results of this study are expected to provide practical guidance for the medical team at Royal Prima Medan Hospital in managing postoperative pain in appendectomy patients. The findings from the study could also pave the way for developing more effective treatment protocols that could improve the overall quality of patient care. Based on the abovementioned problems, the author is interested in conducting a study entitled "The effect after and before early mobilization on pain changes in postoperative appendectomy clients at Royal Prima Hospital."

II. RESEARCH METHODS

This type of study uses a correlational descriptive research design, namely the effect of early mobilization on pain changes in postoperative appendectomy clients in the inpatient room of Royal Prima Hospital using the One Group Pretest-Posttest approach. The location of this research was RSU Royal Prima Jalan Ayahanda Number 68A, Sei Putih Tengah, Medan Petisah, North Sumatra. The implementation of this research is planned for March 2024. The population in this study was all postoperative appendectomy patients hospitalized at Royal Prima Hospital, totaling 17 patients. The sample is part of the number and characteristics possessed by that population. Suppose the population is large, and researchers can't study everything, for example due to limited funds, energy, and time. In that case, researchers can use samples taken from that population (Sugiyono, 2017) to determine the number of samples using a total sampling of 17 patients. Data analysis used univariate and bivariate paired t-tests to examine differences in pain scales before and after early mobilization. Hypothesis testing to decide whether the proposed hypothesis is convincing enough to be rejected or accepted, using statistical tests used a meaning limit of 0.05 so that the p-value ≤ 0.05 then the statistics are called "meaningful," and if $p > 0.05$, then the calculation results are "meaningless."

III. RESEARCH RESULTS

Postoperative pain is a side effect that must be suffered by those who have had surgery, including appendectomy surgery. Attachments between tissues can cause pain due to surgery. The pain is almost impossible to eliminate 100%, and each person will experience different levels of pain. The pain level can be seen on a facial scale with different levels where 0= No pain, 1=Slight pain, 2= Slightly more pain, 3= More pain, 4=Pain once, and 5= Severe pain.

Table 1. Distribution of Frequency and Percentage of Client Pain Level After Appendectomy Surgery Before Early Mobilization at Royal Prima Hospital Medan in 2024

No	Pain Level	Total (n)	Percentage
1	Severe pain	5	29
2	What a Pain	5	29
3	More pain	7	41
TOTAL		17	100

Table 1 shows the distribution of pain levels in postoperative appendectomy clients before involving early mobilization at Royal Prima Medan Hospital in 2024. Of the total 17 patients observed, 29% experienced severe pain, a number equivalent to 5 patients. Meanwhile, the Once Pain category also reached 29%, with the same number of patients. The higher level of pain, i.e., More Pain, was distributed in 41% of the total patients, or seven patients. These results provide an overview of

the prevalence of pain levels in postoperative clients, becoming the basis of essential information for management and subsequent treatment at Royal Prima Medan Hospital.

Table 2. Distribution of Frequency and Percentage of Early Mobilization of Postoperative Appendectomy Clients at Royal Prima Hospital Medan in 2024

No	Early Mobilization	Total (n)	Percentage
1	Can do well	9	59
2	Unable to perform well	8	41
TOTAL		17	100

Based on table 2. It is known that the majority of respondents can do early mobilization well, while the minority cannot do well.

Table 3. Distribution of Frequency and Percentage of Client Pain Level After Appendectomy Surgery After Early Mobilization at Royal Prima Medan Hospital in 2024

No	Pain Level	Total (n)	Percentage (%)
1	More pain	5	29
2	A little more pain	12	71
TOTAL		17	100

Table 3. describes the frequency distribution and percentage of pain levels in postoperative appendectomy clients after early mobilization at Royal Prima Medan Hospital in 2024. Of the 17 patients observed, 29% experienced more pain, with five patients. In contrast, the % of patients, 71%, experienced slightly more pain, including 12 patients. These results provide an idea of the effectiveness of early mobilization in managing patients' pain levels after appendectomy surgery at Royal Prima Medan Hospital, with most patients reporting lower pain levels after early mobilization.

Tabel 4. menyajikan tingkat nyeri sebelum dan sesudah dilakukan Early mobilization of postoperative appendectomy clients at Royal Prima Hospital. A total of 17 patients were observed for pain levels before early mobilization, with a mean (mean) of 3.77, a standard deviation (SD) of 0.845, and a range of values (Min-Max) between up to 5. After early mobilization, the results showed significant changes, with the average pain level decreasing to 2.26, SD 0.422, and a range of values between 2 and 3. These findings provide a positive indication regarding the effectiveness of early mobilization in reducing pain levels in postoperative appendectomy clients at Royal Prima Hospital.

Table 4. Pain Level Before and After Early Mobilization in Postoperative Appendectomy Clients at Royal Prima Hospital

No	Pain Level	Total (n)	Mean	SD	Min Max
1	Early Pre-Mobilization	17	3.77	0.845	3-5
2	Early Post-Mobilization	17	2.26	0.422	2-3

Table 5. Test Results Description of Wilcoxon Signed Ranks Test Changes in Pain Level Before and After Early Mobilization in Postoperative Appendectomy Clients at Royal Medan Hospital in 2024

No	Pain Level	Total (n)	Mean	With	p-value
1	Early Pre-Mobilization	17	3.84	-2.002	0,000
2	Early Post-Mobilization	17	2.45		

Table 5. Display Test results Description of Wilcoxon Signed Ranks Test for changes in pain levels before and after early mobilization in postoperative appendectomy clients at Royal Medan Hospital in 2024. A total of 17 patients were observed for pain levels before early mobilization, with a mean of 3.84. After early mobilization, there was a significant decrease, with the average pain level at 2.45. Statistical analysis using the Wilcoxon Signed Ranks Test showed substantial results ($Z = -2,002$, $p\text{-value} = 0.000$), confirming that changes in pain levels before and after early mobilization in postoperative appendectomy clients were statistically meaningful. These findings support the effectiveness of early mobilization as an intervention that can potentially reduce pain levels in patients at Royal Medan Hospital.

IV. DISCUSSION

Based on the results of a study of 17 respondents on the effect of early mobilization on pain changes in postoperative appendectomy clients in the inpatient room of Royal Prima Hospital in 2024, it is known that before early mobilization, the majority of respondents felt more pain, while the minority of respondents experienced severe pain. One of the relevant theories is the theory of central or central nervous sensitivity. This theory states that after surgery, there is an increase in sensitivity in the central nervous system, including changes in pain signal transmission pathways in the brain and spinal cord. This may result in more intense pain or higher sensitivity to pain stimuli. In addition, the inflammatory mechanisms that occur after surgery can also play an essential role in creating postoperative appendectomy pain since the inflammatory process releases pain mediators such as prostaglandins and cytokines that can stimulate pain receptors and increase nerve sensitivity. Therefore, an understanding of these theories can help in planning more effective pain management strategies for postoperative appendectomy patients.

Pain can be defined as something elusive and a complex though universal phenomenon (14); (Kurniawati, 2018), but it is still a mystery that pain is one of the defense mechanisms of the human body that shows the experience of problems and pain is an individual's belief and how the individual responds to the pain he experiences. Pain is a highly individualized and subjective experience that can affect everyone at all ages (16); (17). Pain can occur in both children and adults. The causes of pain are disease processes, injuries, procedures, and surgical interventions.

The level of pain in postoperative appendectomy patients is the result of tissue trauma, inflammatory reactions, and muscle tension that occurs during the healing process. Pain intensity can vary depending on individual tolerance and the type of surgical procedure performed, is often localized around the incision mark or lower right abdominal area, and can affect the patient's physical activity. Effective pain management, through the use of analgesics and non-pharmacological approaches such as physical therapy, plays an essential role in ensuring patient comfort, speeding recovery, and improving quality of life postoperatively appendectomy.

Based on the results of a study of 17 respondents on the effect of early mobilization on pain changes in postoperative appendectomy clients in the inpatient room of Royal Prima Hospital in 2024, it is known that after being given early mobilization, the majority of respondents felt a little more pain and the minority of respondents felt more pain. The results of the Wilcoxon Rank Test showed ρ -value = $0.000 < \alpha = 0.05$; this means that H_0 was rejected and H_a was accepted there was an effect of early mobilization on pain changes in postoperative clients Appendectomy in patients in the inpatient room of Royal Prima Hospital in 2024. The results of this study follow the opinion of Budiarti (2022), which shows that early mobilization influences changes in the pain level of postoperative appendectomy clients (1). This study also follows the results of Dinata's (2024) study, which shows that early mobilization can reduce the pain level of postoperative appendectomy clients (5). Caecilia (2016) showed that early mobilization affects the pain intensity in postoperative patients, so it can be used as one of the nursing measures for overcoming postoperative patient pain (6).

V. CONCLUSION

The study concluded that the majority of postoperative appendectomy clients experienced increased pain levels before early mobilization, while a minority felt more intense pain. After early mobilization, most clients felt slightly increased pain, with a minority experiencing a more significant improvement. This shows the effect of early mobilization on changes in pain levels in postoperative appendectomy clients at Royal Prima Hospital in 2024.

REFERENCES

- [1] Budiarti I. Penerapan Mobilisasi Dini Terhadap Skala Nyeri Pasien Post Operasi Appendektomi Di Ruang Bedah RSUD Jend. Ahmad Yani Kota Metro. *J Cendikia Muda*. 2022;2(3):320–4.
- [2] Akbar MI, Industri FT. Penerapan metode dempster shafer untuk sistem pakar diagnosa rasa sakit pada perut. 2019;3(2):67–74.
- [3] Maria NN, Armah Z. Gambaran Jumlah Limfosit dan Neutrofil Pada Penderita Apendisitis (Usus buntu) akut di RSUP Dr Wahidin Sudirohusumo Makassar. *J Media Anal Kesehat*. 2019;10(2):119–25.
- [4] Hidayat F. Optimalisasi Kesehatan Remaja Dalam Strategi Peningkatan Pengetahuan Tentang Penyakit Apendisitis di SMA Negeri 1 Kota Ternate. *Madaniya*. 2023;4(4):2076–80.

- [5] Dinata FS, Inayati A, Ayubbana S, Dharma AK, Metro W. Penerapan Mobilisasi Dini Terhadap Skala Nyeri Pasien Post Operasi Apendiktomi Di Ruang Bedah Umum Rsud Jend. Ahmad Yani Metro Application of Early Mobilization To Patient Pain Scale Post Appendectomy Operating in the General Surgery Room General Hospital. *J Cendikia Muda*. 2024;4(1).
- [6] Caecilia RY, Pristahayuningtyas, Murtaqib S. Pengaruh mobilisasi dini terhadap perubahan tingkat nyeri klien post operasi apendektomi di rumah sakit baladhika husada kabupaten Jember. *e-Jurnal Pustaka Kesehat*. 2016;4(1):1–6.
- [7] Setiawan A, Inayati A, Sari SA. Penerapan Terapi Murottal Terhadap Penurunan Nyeri Pada Pasien Post Op. Apendiktomi. *J Cendikia Muda*. 2023;3(1):55–61.
- [8] Arief F. Analisis Faktor-Faktor Yang Berhubungan Dengan Pelaksanaan Mobilisasi Dini Pasien Pasca Bedah Digestif Apendiktomi Di Rumah Sakit Dr. H. Moch. Ansari Saleh Banjarmasin Tahun 2016. *Borneo Nurs J*. 2020;2(1):61–73.
- [9] Berkanis, Nubatonis, Lastari. Pengaruh Mobilisasi Dini Terhadap Intensitas Nyeri Pada Pasien. *CHM-K Appl Sci J*. 2020;3(1):6–13.
- [10] Mayna NP, Hidayat Y. Mobilisasi Dini Terhadap Pemulihan Peristaltik Usus dan Skala Nyeri Pasien Post Pembedahan. 2020;7(1):21–31.
- [11] Nurdiansyah TE. Pengaruh terapi musik terhadap respon nyeri pada pasien dengan post operasi di RSUD A. Dadi Tjokrodipo Kota Bandar Lampung. *J Kesehat*. 2015;6(1).
- [12] Tika TT. Metode ERACS Sebagai Program Perioperatif Pasien Operasi Caesar. *J Med Utama*. 2022;3(02 Januari):2386–91.
- [13] Nurfazatie R. PENGARUH MOBILISASI DINI TERHADAP PERUBAHAN TINGKAT NYERI PASIEN POST OPERASI APPENDIKTOMY: LITERATURE REVIEW. *Sci J Nurs Res*. 2019;(46):13–8.
- [14] Saputro YA, Juntara PE, Wibowo AT. THE EFFECT OF INJURY REHABILITATION THERAPY PROGRAM ON THE SUCCESSFUL RECOVERY OF CHRONIC ANKLE INJURY. 2022;
- [15] Kurniawati BMI. Perbedaan Efektivitas Teknik Relaksasi Napas Dalam Dan Aromaterapi Lavender Terhadap Intensitas Nyeri Menstruasi Pada Remajadi Madrasah Aliyah Darut Taqwa Semarang. Universitas Muhammadiyah Semarang; 2018.
- [16] Siti I, Rahmawati A, Kusumawati E. Pengaruh derajat laserasi perineum terhadap skala nyeri perineum pada ibu post partum. 2023;
- [17] Lika Adi Sasana R, Hariyono R, Sudarsih S. Analisa Praktik Klinik Asuhan Keperawatan Dengan Masalah Nyeri Akut Pada Pasien Hernia Nukleus Pulpose (HNP) di Ruang Irna C1 RSPAL Dr Ramelan Surabaya. Perpustakaan Universitas Bina Sehat; 2022.