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The Effectiveness of Early Mobilization on Length of Stay (LOS) Postoperative Appendicitis Patients at The Benyamin Guluh Kolaka Hospital

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Abstract. *Mobilization is an action to run as soon as possible and it is an important aspect of physiological function. Length of stay is an indicator in assessing the quality and efficiency of hospitals, but in Indonesia, the average is still not ideal. The purpose of this study was to determine the effectiveness of early mobilization on Length Of Stay (LOS) in postoperative appendicitis patients. The quantitative study used was a quasy experiment using the control time series design method which was carried out involving a sample of 34 people consisting of 17 cases and 17 controls. Withdrawal of samples using a purposive sampling technique. Data analysis used the Mann-Whitney test. The results showed that the average length of stay of postoperative appendicitis patients was 5 days, which were given effective early mobilization which had a long length of stay as many as 5 people (29.4%), while those who were fast were as many as 12 other people (70 .6%), postoperative appendicitis patients who were not given ineffective early mobilization so that they had a long length of stay were 12 people (70.6%) while those who were fast were 5 people (29.6%). The conclusion of early mobilization is effective in Length Of Stay (LOS) in postoperative patients with appendicitis from ρ value 0.036 (<0.05). It is recommended to increase the knowledge of patients regarding the implementation of early mobilization.*

Background

Appendicitis is an event of the occurrence of inflammation and blockage to appendix vermiformis that shaped like a little finger about 10 cm long (range 3-15 cm), conical, widened at the base and tip, and extends directly to the cecum under the ileocecal valve commonly called appendix where needs surgical procedures and its alarming because of the increasing the incidences of appendicitis in all countries, where the risk of contracting for lifetime [1,2].

Globally, appendicitis is a surgical procedure most often abdominal urgency, the number of patients in 2017 are 734.138 and it increase in 2018, and 1,1/1000 people per year [3]. Since 2018, 2019, 2020, and 2021 the prevalence of appendicitis in Indonesia is 28,949 patients, 30,703 patients, 65,755 patients, and 75,601.

The data showed that it was increasing year by year [4].

Postoperative appendicitis patients feel pain until fear of moving their bodies [5]. To relieve pain and also restore freedom of movement, early mobilization is carried out as soon as possible after the patient returns to the medical department [6]. The length of hospitalization is one of the indicators to assess the quality and efficiency of hospitals, but the average in Indonesia is still not ideal [4].

Previous studies have shown that the length of stay in the patient's hospital after surgery varies depending on the type of acquired appendicitis and associated complications, in patients with acute appendicitis wound healing proceeds rapidly by about 1 to 4 days to shorten the period of stay in the hospital to reduce administrative costs, but the healing process of wound patients is slightly longer, an average of > 7 days, so the treatment is long [7]. The study of early mobilization with length of stay or length of stay showed a significant relationship between early mobilization and length of hospitalization in patients who had undergone an appendectomy at Grandmed Lubuk Pakan Hospital based on a ρ value of 0.01 ($\alpha < 0.05$) [8].

Appendicitis patients treated in the treatment room of the Benyamin Guluh Kolaka Hospital in 2019 were 69 patients, in 2020 there were 69 patients and in 2021 there were 62 people [9]. Based on a preliminary study conducted on 5 patients in the treatment room of the Benyamin Guluh Kolaka Hospital, it was said that 2 people said they did early mobilization after 24 hours post-surgery on the second day, while 3 other people did not do early mobilization on Length of Stay or length of stay because the patient was worried. for surgical scar sutures that will open if early mobilization is carried out.

Based on this thought, researchers conducted a study on the effect of early mobilization during hospital stay (LOS) on postoperative appendicitis patients at Benyamin Guluh Kolaka Hospital.

Method

The type of study used a quasi-trial with a controlled time series design in June-July, 2022 where the sample was 34 people that consists of 17 cases and 17 controls. The sample of the study is used using a purposive sampling technique. The technique of data analysis used by Uji Mann Whitney.

Results and Discussion

Respondent characteristics

Table 1 Respondent Characteristics Distribution based on Characteristics Respondent at the Benyamin Guluh Kolaka Hospital

Characteristic Respondent	n (%)	Mean±SD
Respondent Age		36,94±16,786
Gender		
Male	18 (52,9)	
Female	16 (47,1)	
Education Background		
Elementary School	9 (26,5)	
Junior High School	7 (20,6)	
Senior High School	16 (47,1)	
University	2 (5,9)	

Table 1 shows that the average age score of respondents was with a standard deviation value of 16,786, the sex was dominated by men by 18 people (52.9%), and the education level of senior high school was up to 16 people (47.1%).

Table 2 Respondent Frequency Distribution Based on Research Variable at the Benyamin Guluh Kolaka Hospital

Research Variable	n (%)	Mean±SD
***Length of Stay* (cases)**		3±1,736
Long	5 (29,4)	
Rapid	12 (70,6)	
***Length of Stay* (control)**		5±1,272
Long	12 (70,6)	
Rapid	5 (29,4)	

Table 2 shows that among those who mobilized early, 5 people (29.4%) did a length of stay and 17 people (70.6%) did a quick stay with an average elementary school of 3 people while those who did not do early exercise were 17 people. (70.6%) had a length of stay and up to 5 people (29.4%) had an average stay of 5 days?

Tabel 3 The Effectiveness of early mobilization on *Length Of Stay* (LOS) to Postoperative appendicitis patients at the Benyamin Guluh Kolaka Hospital

	Median (Min-Maks)	Nilai *ρ*
Length of Stay (cases) (n=17)	5 (1-7)	0,036
Length of Stay (control) (n=17)	3 (2-7)	

Table 3 shows a p-value of 0.036 (α <0.05) which means that early mobilization is statistically effective during hospital stay (LOS) in post-operation appendicitis patients at Benyamin Guluh Kolaka Hospital.

Length Of Stay (LOS) on Postoperative Appendicitis Patients at Benyamin Guluh Kolaka Hospital Given Early Mobilization

This research result showed that in patients after appendicitis surgery, effective initial exercises and long stay in the hospital, up to 5 people (29.4%) exercise earlier than day 2 after the end of the treatment period of anesthesia time. While another 12 (70.6%) stayed fast due to the early mobilization of emergency response forces after the first and second days.

Previous studies showed that the median recovery time from defecation in patients in the intervention group had a higher amount of 214.5 than the control group, the median recovery time for patients with bowel dysmenorrhea was 761.2 [10]. The result of another study conducted in the experimental group obtained data that primary wounds healed well in 12 respondents (80%) while in the primary wound control group healed well in only 6 respondents (60%).) In this case, the mobilization of group A, was found that affects the course, duration, and extent of wound healing of appendicitis [11]. The theory explained that early mobilization can aid a patient's recovery because limb movement prevents muscle and joint stiffness, reduces pain, and improves blood flow to the injured part, allowing for faster recovery [5].

Based on the resulting study, the author argues that subjects can do gymnastics early but the rest period is long due to the subject's advanced age, making it difficult to carry out early mobilization effectively.

Length Of Stay (LOS) on Postoperative Appendicitis Patients at Benyamin Guluh Kolaka Hospital Was not Given Early Mobilization

The results of this study showed that based on subjects who did not do exercise early enough so that lying down for a long time, as many as 12 people (70.6%) subjects only did one left tilt on day 2. Study subjects who did not get early mobilization but had a quick hospitalization of 5 people (29.4%) respondents tilted left-right on the first day with a maximum. Previous research

conducted by Rizky Ananda et al in 2021 showed that the wound healing process before early mobilization is wounded with blood and stitches, soft tissues heal while the wound healing process after surgery The initial signs of motility are wound healing, hair loss, no bleeding, and no signs of infection [12].

Most patients were always worried when their body is moved to a certain position after surgery, it will affect the incision that is just made, although it is not entirely a problem, it is a scary thing. , indeed almost all types of surgery require movement or movement of the body as soon as possible [13].

Based on the result of the study, researchers hypothesized that respondents did not carry out effective early mobilization but rapid hospitalization due to the respondents' or the patient's desire to recover quickly and the age of the adult category.

Effectiveness of Early Mobilization of Length Of Stay (LOS) On Postoperative Appendicitis Patients at the Benyamin Guluh Kolaka Hospital

The result of this study showed that early mobilization was statistically effective against the length of hospital stay (LOS) in post-operation appendicitis patients at Benyamin Guluh Kolaka Hospital with a p-value of 0.036 ($\alpha<0.05$). First respondents who perform effective early mobilization correctly can be hospitalized quickly, taking only 3 days to recover and be discharged.

According to research conducted by Kurniari in 2021, it was found that the right and left side range of motion exercises have an effect on the length of hospitalization of patients after appendicitis surgery at Mangusada Hospital, where Most respondents said after performing left appendicitis surgery and tilted to the right, the pain was reduced and said that they were not worried about surgery [14].

The theory is to correct the left and right slopes every two hours to keep the patient comfortable, keep the muscles and joints flexible, be able to do things like stretch and move, prevent muscle spasms, maintain muscle tone, and help the patient feel more comfortable, make them feel healthier and stronger [5].

Moving as soon as possible after surgery can keep muscles and joints flexible, you can do things like stretching and exercising, lower the body's metabolism, and restore and promote the physiology and healing of organs [13]. Increased mobility assists postoperative patients in supporting patient wound healing [15].

Based on the result of the study, the researcher hypothesized that respondents or patients carried out effective early mobilization with the support of nurses to guide how to properly mobilize early and with family support to accelerate recovery or hospitalization.

Conclusion

Based on the research, it was found that there was a correlation between effective early mobilization on length of hospital stay (LOS). Based on the research result, it can be concluded that effective early mobilization of the length of hospital stay (LOS) in post-operation appendicitis patients at Benyamin Guluh Kolaka Hospital based on a ρ value of 0.036 ($\alpha < 0.05$). It is recommended to improve the quality of work of nurses in postoperative care, including early mobilization.

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