THE EFFECT OF EARLY MOBILIZATION EXERCISE ON THE LEVEL OF INDEPENDENCE ON PATIENTS AFTER POST OPERATIVE FRACTURE FEMUR

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ABSTRACT

Background; Patients with postoperative femur fractures will experience limited motion in their knee function, weakness, immobility and disability as a result of limitations in caring for themselves and carrying out daily activities. This study is to determine the effect of early mobilization education on the level of independence in postoperative patients with femur fracture. Research methods; The study used a quasi-experimental design with pre and post control group design, with 36 respondents (18 experimental groups, 18 controls). Data collection using questionnaires and observation. The independent variable is early mobilization education, while the dependent variable is the level of independence. The sampling technique used consecutive sampling. The population in this study were patients with postoperative at Prof. Dr. R. Soeharso Surakarta. Data analysis using independent t-test and paired t-test. Research results; There is a significant difference in the level of independence in patients before and after being given early mobilization exercises of intervention group. The results of the independent t-test on the level of independence obtained p value (0.0001) <0.05, there is a significant difference in the level of independence in patients in the control group and intervention group. Conclusion; There is an increase in independence in patients after early mobilization education, and there is a difference in the level of independence in the control group and the intervention group.

KEYWORDS Early mobilization, Education, Fractur, Independence

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INTRODUCTION

Fracture is a total or partial loss of cartilage continuity, the main cause can be caused by trauma or physical force of the bone itself and surrounding soft tissue. The bone will determine whether the fracture is complete or incomplete (Hedge, Thaker, Botchu, Fawcett, & Gupta, 2021). The WHO health agency in 2022 stated that more than 7 million people died due to accidents, and about 2 million people were physically disabled. One of the accident incidents that has a high prevalence is the incidence of lower extremity fractures, which is 45.2% obtained from accidents (Yoo, Cha, Kwak, Kim, & Choy, 2020)

The World Health Organization (WHO) noted that in the 2017-2018 period, 5.6 million people died, and 1.3 million people suffered fractures due to traffic accidents (WHO, 2018). Another report according to The National Trauma Data Bank in 2016, lower extremity fractures were the most common injury with 354,558 (40.09%) cases with a case fatality rate (CFR) of 16.17%, the second highest after head injuries. Based on the results of the Basic Health Research by the Health Research and Development Agency (RISKESDAS) in 2018, the incidence of fractures in Indonesia was recorded at 5.5%, and of the many fracture cases in Indonesia, lower extremity fractures due to accidents had the highest prevalence of 67.9%. Of the 45,987 cases, 19,754 were femur fractures, which accounted for the highest number of accidental lower extremity fractures (RISKESDAS, 2018).

Patients report pain, dizziness, functional impairment, negative health perception, anxiety, and low life satisfaction, after undergoing surgery, and at one to six months after surgery (Wantoro, Muniroh, & Kusuma, 2020). Research by states that preoperative pain is greater than postoperative pain.(Echeverria-Villalobos et al., 2020)

Patients who undergo surgery either open reduction internal fixation or open reduction external fixation will experience limitation of motion in their knee function, weakness, immobility and disability. This causes patients to be unable to care for themselves and unable to carry out daily activities as usual. The role of nurses to provide early mobilization exercises can increase independence in patients and their families.

Based on the results of preliminary studies at RSO Prof. Dr. R. Soeharso Surakarta from the results of interviews with patients found that most patients on the first day and second day after surgery patients still fully depend on the help of nurses and families in carrying out their daily activities.(Nofiah & Asna Afifah, 2021). The results of interviews with room nurses found that most patients experienced anxiety before surgery. Patients generally feel anxious about their ability to walk and changes in normal activities after surgery (McKeown, Kearney, Liew, & Ellard, 2020)

The role of nurses and physiotherapists in preoperative exercises is needed to enable patients to become independent as soon as possible. The purpose of nursing action in patients with joint motion limitation problems is so that the patient can perform total self-care to the extent that he can do (Xu et al., 2020). Early mobilization as one of the nurse's actions in carrying out a rehabilitative role is important to prevent post-surgical problems or complications. Based on these reasons, the authors are interested in discussing. The effect of early mobilization training education on the level of independence of patients after femur fracture surgery.

RESEARCH METHOD

This study used a quasy experimental with a pre-post test with control group design. This study was conducted to see the effect of early mobilization exercises and education

on the level of independence of postoperative patients with femur fractur. This research was conducted at RSO Prof. dr. R. Soeharso Surakarta in June 2023.

The population of this study were all patients who underwent TKR surgery at RSO Prof. dr. R. Soeharso Surakarta. The inclusion criteria for this study were patients with a primary diagnosis of femur fracture; age 40-70 years; willing to become respondents. Exclusion criteria consisted of patients who had decreased consciousness; patients with a pain scale ≥ 7 (severe pain); patients with other operations other than femur fractures; patients had a history of stroke. Sampling using consecutive sampling method and obtained 36 patients as research samples.

RESULT AND DISCUSSION

Table 1. Frequency Distribution of Respondents' Characteristics at RSO Prof. dr. Soeharso Surakarta (n=36)

Characteristic	Intervention		Control	
	Amount (n)	Presentase (%)	Amount (n)	Presentase (%)
Age				
46-55 years	3	6,7	2	6,7
56-65 years	11	73,3	12	80
66-75 years	1	20	2	13,3
Gender				
Men	10	66,7	11	53,3
Gender	8	33,3	7	46,7
Education				
No school	3	20	4	26,7
Elementary	2	13,3	2	3,3
School	3	20	3	18,8
Junior Hight	8	40	6	38,2
School	2	6,7	3	18,8
Senior high				
School				
Bachelor				
Occupation				
Laborer	1	6,7	1	6,7
Teacher	1	6,7	1	6,7
Housewife	1	6,7	1	6,7
Factory	2	13,3	2	13,3
Retired	2	6,7	1	6,7
Farmer	3	20	4	20
Self-employed	8	39.9	8	39.9
Riwayat				
Penyakit	2	3.4	3	12.1
DM	3	12.1	4	18.5
Hypertension	1	2.7	5	2.7
Uric Acid	12	81.8	6	66.7
No disease				
Total	**18**	**100**	**18**	**100**

Based on table 1, it was found that most of both the intervention and control groups were aged 56-67 years as many as 11 respondents (73.3%) in the intervention group and 12 respondents (80%) in the control group. Most patients were male in the intervention group as many as 10 respondents (66.7%) and the control group as many as 11 respondents (53.5%). The majority of respondents had a high school education as many as 8 respondents (40%) in the intervention group and 6 respondents (38.2%) in the control group. And most respondents worked as self-employed as many as 8

respondents (81.8%). And the majority did not have a history of disease in both the intervention group and the control group.

Table 2. Normality Data of Early Mobilization Education on level of independence of intervention anda control group (n=36)

Variable	Group					
	Intervention			Control		
	Statistik	df	Sig	Statistik	df	Sig
Pre_kinesiophobia	.943	18	.198	.927	18	.156
Post Kinesiophobia	.854	18	.008	.904	18	.134

Based on table 2, the results of the normality test that have been tested using the shapiro wilk sig value> 0.05, which means that the data is normally distributed so that the analysis test uses the t-test.

Table 3. Effect of Early Mobilization Education on Level of independence of intervention and control group (n=36)

Variable	Mean (Min – Max)	P-Value
Intervention group		
Level of independence_Pre	83,8 (75-85)	0,001
Level of independence_Post	71,04 (54-70)	
Control group		
Level of independence_Pre	90,5 (90-92)	0,175
Level of independence_Post	89,5 (89-90)	

Based on table 3, the results in the intervention group obtained a p-value of 0.001. The statistical results show that the p value = (0.000) <0.05, it is stated that there is a significant effect after early mobilization education, while in the control group the p-value is 0.175, it is stated that there is no effect on the control group.

Tabel 4 Differential Test Results of Independence Scores in the Intervention Group and Control Group

Variable	Intervention		Control		Difference	CI 95%	P
	n	Mean±SD	n	Mean±SD	Mean±SD		
Level of independence							
Pre	16	83,5 ±16,2	16	90,5 ± 7,35	19,13±2,78	13,11-	0,000
Post	16	70,01 ± 8,75	16	72,00± 5,31		24,37	

Based on table 4 above, it can be concluded that the average score of independence in patients who are given education with patients who are not given early mobilization training education is 19.13. The results of the independent t-test on the level of independence obtained p value (0.0001) <0.05 means that there is a significant difference in the level of independence of patients who are given education with patients who are not given early mobilization education.

The results of this study indicate that there is an increase in the independence of respondents after early mobilization training. Respondents did not know about the exercises to be done after surgery. After being given early mobilization training, respondents were more aware of the exercises to be done after surgery, so that when the operation was complete and the physiotherapy officer had not arrived, the respondent could start the exercise. The first week period after surgery is very important for postoperative patients with femur fractures, especially in the recovery process because the recovery process is slower than post total hip replacement surgery

and patients try to manage their own care, this can be stressful for patients and their families (Lee, Um, & Kim, 2020).

While respondents who have comorbidities such as hypertension have a decrease in independence scores after surgery, because with an increase in blood pressure mobilization exercises are delayed. This research is reinforced by (Nofiah et al., 2021) that factors that affect the patient's ability to ambulate are due to multiple and chronic comorbidities, cardiopulmonary status or metabolic or hormonal diseases.

The results of this study indicate an increase in independence in respondents after early mobilization training. This is probably because the patient has done early mobilization exercises, so that after the first 6-8 hours postoperative femur fracture the respondent can do the exercise alone without being accompanied by physiotherapy staff. This research is in accordance with the research of (Gill et al., 2004) that the preoperative exercise program will assist patients in performing early postoperative mobilization. Similar research was also conducted by (Mulyani, Susanti, & Septiawan, 2018) which states that exercise programs can improve quadrisep muscle function in performing weight bearing and mobilization activities, so that patients are stronger and independent during postoperative. This research is reinforced by the theory of Potter & Perry (2009) that education is given to make patients feel comfortable and prepare patients for recovery after surgery. Preoperative education about postoperative patient behavior, provided through a systemic and structured format, has a positive influence on patient recovery. (Fischer et al., 2021)stated that patient mobility and pain will improve after fracture surgery. This results in patient independence also increasing gradually according to the patient's condition. The above research is in accordance with the results of this study. Respondents after education in the partially independent and totally independent categories were 32.3%.

The respondent's independence began to appear from the first day of surgery. Respondents began to follow the exercises taught by the physiotherapist. This research is also reinforced by (Aprato et al., 2020) that the purpose of nursing action in patients with joint motion limitation problems is so that the patient can carry out total self-care to the extent that he can do. The results of (Dewi, Hakam, & Murtaqib, 2022) state that early mobilization in the first 24 hours after femur fracture surgery is a cheap and effective way to reduce the incidence of postoperative deep vein thrombosis.

In this study, it was found that respondents who underwent femur fracture surgery were mostly between the ages of 56 - 64 years. Although the average age > 50 years did not hinder the respondent's mobilization process. The results of this study found that the respondents' pain decreased every day. After the mobilization exercise, the average value of pain on the second day of surgery was 3.22, a mild pain category. This decreased compared to the average value of pain before training on day zero of surgery which was 4.6 (mild moderate pain). In accordance with Gill's statement (1990) in Potter & Perry (2009), age is one of the factors that can affect pain.

CONCLUSION

There is an increase in independence in respondents carried out in femur fracture patients after early mobilization education with a p-value of 0.0001 which means there is a significant effect. There is a significant difference in the level of independence in respondents who are given education with patients who are not given early mobilization education. Early mobilization education can provide a sense of comfort and prepare patients for recovery after surgery.

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