

Original Article

***Influencing Factors on the Postoperative Patient Functional Status
at the Meuraxa Regional General Hospital, Banda Aceh***

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ABSTRACT

After surgery, the patient will experience pain which can change the role and function in carrying out activities of daily living (ADL), the patient will depend on his family or other people for his life. The aim is to determine the factors that influence the functional status of post-operative patients at the Meuraxa Regional General Hospital, Banda Aceh. Method: using analytical observational methods with a cross-sectional approach. The population in this study were all post-operative care patients at Meuraxa Regional Hospital. The sample in this study were patients treated on the second day after minor surgery at Meuraxa Regional Hospital Banda Aceh with a sample size of 43 respondents. The statistical test uses the chi-square test with a significant level ($\alpha=0.05$). The research results show that the factors that influence postoperative functional status are pain and fall-efficacy factors ($p<0.05$), while the age factor is not significantly correlated ($p>0.05$). Conclusion: Pain and fall-efficacy factors are the most important factors influencing postoperative active status and are statistically significant.

Keywords: Age, pain, fall efficacy, functional status, post-operative patients

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INTRODUCTION

Postoperative is the final stage of perioperative phase I which is essential for returning functional status to an optimal state of health.¹ Surgery is an unusual thing experienced by patients. While waiting for surgery (preoperative), the patient will experience stressors and anxiety. Fear will be felt due to ignorance and fear of losing attention from significant people in his life. After surgery (postoperative) the patient will experience pain that can change roles and functions in daily activities, the patient will depend on his life, family or other people.²

The study results showed that more than half of the respondents had a partially dependent activity of daily living (ADL)

(56.1%). ADL is highly dependent (31.6%), and completely dependent on 1.8%, while the percentage of somewhat independent and very minimal independence is 7%, and 3.5%.³ Furthermore, research conducted at the General Hospital (RSU) dr. Prigadi Medan obtained the results that there was a relationship between functional status and pain felt by patients, namely (28.2%).⁴ Other researchers at Kasih Ibu Surakarta Hospital's results showed the effect of integrated activity exercises with pain management and fall efficacy on the functional status of lower extremity post-ORIF fractures.⁵

Research on pain intensity with functional status in postoperative breast cancer patients obtained the result that the higher the intensity of pain felt by the patient, the lower the functional status. Patients find it difficult to

meet their daily needs due to the worsening condition of their functional status.⁶ Functional status will decrease when carrying out activities that require postoperative patients to change positions, such as changing clothes, cleaning themselves, and meeting intake and output needs. This is because pain greatly affects the patient's functional status.⁷ The results of another study explained that the factor that has a relationship with functional status is the fall-efficacy factor, while the pain factor is a very dominant factor that can predict functional status.⁸ It was further explained that the functional status of postoperative cancer patients is better after 3-6 months after surgery, this is different from the initial phase after surgery. Poor functional status is also found in postoperative cancer patients who experience symptoms and comorbidities, in contrast to patients who do not have symptoms and comorbidities.⁹

The researchers' interviews with four patients in the surgical inpatient room revealed that each of them said they needed the help of family and nurses in carrying out activities to meet the needs of daily life. Several complaints were reported, including pain that is still felt, lack of confidence in the ability to do activities, and lack of motivation to do activities independently. Based on the above phenomenon, the author aims to determine the factors of age, pain, and self-efficacy that affect the functional status of postoperative patients at the Meuraxa Regional General Hospital Banda Aceh.

METHOD

This quantitative research type uses an analytical observational type with a cross-sectional approach design. The population is all postoperative patients in the male surgical inpatient room and the female surgical inpatient room. Population is the entire object of study or

object under study.¹⁰ The sample size determined by the Lameshow formula amounted to 43 people. Sampling is by purposive sampling method. The inclusion criteria are as follows: minor postoperative patients, postoperative patients with the 2nd day of treatment, patients aged 17-60 years, and conscious patients with good cognitive abilities and able to interact well and smoothly. Exclusion criteria in this study: patients who experience acute complications such as infection, fat embolism, and compartment syndrome. Patients with impaired loss of consciousness, patients who experience complications such as heart history, stroke, lung, bleeding infections, head injuries and invoices.

The research place is in the male surgical inpatient room (Al-bayan 3) and the female surgical inpatient room (Humaira) of Meuraxa Regional General Hospital Banda Aceh. Data collection tools use research instruments in the form of questionnaires. Characteristic data can be measured by looking at medical records as well as validated by interviews with respondents or families. Folden & Tappen, (2007) explained that postoperative pain was measured using the Numeric Rating Scale with a value range of 0 – 10, Fall-efficacy was measured using the Fall efficacy Scale modified questionnaire with an alpha reliability value of 0.94.¹¹ A questionnaire to measure functional status using the Barthel Index, to assess functional independence with an overall value of 0–80. The Barthel index has an interrater correlation value of 0.88–0.99 with an alpha reliability value of 0.953–0.965. Data analysis was carried out by univariate analysis and bivariate analysis using the chi-square test. Presentation of data in the form of tables and narratives by describing the results of data analysis. This research is in accordance with ethics, Number: KP. 04.03/12.7/096/2023.

RESULTS

Univariate Analysis

Table 1. Frequency Distribution of Sex, Education, Age, Pain, Fall-Efficacy, and Functional Status in Patients in Al-Bayan Room 3 and Humaira Room of Meuraxa Hospital Banda Aceh (n=43)

| Characteristic | Frequency (f) | Percentage (%) |
|--------------------------------|---------------|----------------|
| Gender | | |
| Man | 24 | 55,8 |
| Woman | 19 | 44,2 |
| Education | | |
| Higher education | 18 | 41,9 |
| Senior High School | 23 | 53,4 |
| Primary school | 2 | 4,7 |
| Age | | |
| Late Adolescence (17-21 years) | 8 | 18,6 |
| Early Adulthood (21-40 years) | 16 | 37,2 |
| Late Adulthood (40-60 years) | 19 | 44,2 |
| Pain | | |
| Weight | 8 | 18,6 |
| Middle | 26 | 60,5 |
| Mild | 9 | 20,9 |
| Fall-Efficacy | | |
| High | 17 | 18,6 |
| Low | 26 | 60,5 |
| Functional Status | | |
| Total | 10 | 23.2 |
| Middle | 7 | 16.3 |
| Independent | 26 | 60.5 |
| Total | 43 | 100 |

Table 2 shows that of the 43 respondents studied, the majority were men, namely 24 respondents (55.8%). The education of respondents studied was mostly Senior High School, which was 23 respondents (53.4%). Most respondents aged 40-60 years (late adulthood) were 19

respondents (44.2%). The highest level of postoperative pain in the moderate category was 26 respondents (60.5%). Most Fall-efficacy levels were in the low category of 26 respondents (60.5%), and most functional status was in the independent category of 26 respondents (60.5%).

Bivariate Analysis

Table 2. The effect of Age, Pain, and Fall-Efficacy factors on functional status in postoperative patients at Meuraxa Hospital Banda Aceh

| Variable | Functional status | | | | | | Total | p-value |
|------------------------------|-------------------|-------|--------|------|-------------|-------|-------|---------|
| | Total | | Middle | | Independent | | | |
| | f | % | f | % | f | % | | |
| Age Factor | | | | | | | | |
| Late adolescence | 2 | 25.0 | 1 | 12.5 | 5 | 62.5 | 8 | 0,082 |
| Early adulthood | 7 | 43.8 | 1 | 6.3 | 8 | 50.0 | 16 | |
| Late adulthood | 1 | 5.3 | 5 | 26.3 | 3 | 68.4 | 19 | |
| Pain Factors | | | | | | | | |
| Weight | 8 | 100.0 | 0 | 0.0 | 0 | 0.0 | 8 | 0,000 |
| Middle | 2 | 7.7 | 7 | 26.9 | 17 | 65.4 | 26 | |
| Mild | 0 | 0.0 | 0 | 0.0 | 9 | 100.0 | 9 | |
| Fall-Efficacy Factors | | | | | | | | |
| High | 0 | 0.0 | 0 | 0.0 | 7 | 100.0 | 17 | 0,000 |
| Low | 10 | 38.5 | 7 | 26.9 | 9 | 34.6 | 26 | |
| Total | 10 | 23.2 | 7 | 16.3 | 26 | 60.5 | 43 | |

Based on Table 3, 68.4% of late adulthood have independent functional status, and 62.5% of late adolescents have independent functional status. A p-value of $0.082 > \alpha 0.05$ means that age has no influence on the functional status of postoperative patients.

For pain factors, there were 64.4% of respondents in the moderate pain category with independent functional status, and respondents who experienced severe pain as much as 100% with total functional status, p-value = $0.000 < \alpha 0.05$, meaning that there was a significant influence of pain factors on the functional status of postoperative patients.

In the fall-efficacy factor, it is known that 38.5% of respondents with total functional status are in the low category. In the high category, there are 100% with independent functional status, p-value $0.000 < \alpha 0.05$, meaning that there is a significant influence of fall-efficacy factors on the functional status of postoperative patients.

Age Factors to Functional Status

The results of the age factor in this study are not in accordance with the results of other studies that explain that adolescents usually carry out daily activities depending on their parents such as in terms of meeting their life needs, which results in a decrease in functional status. Unlike middle adulthood, they are more independent in carrying out their daily activities, but different from early adulthood.¹² The researcher further explained that early adulthood is the age that has a high average value for functional status disorders. Early adulthood has dominant characteristics, always wanting to be noticed and met by the needs of daily activities by the family.¹¹ In contrast to the explanation of Folden & Tappen (2007) that after hip repair surgery at the age of more than 60 years, it is known that there is a negative relationship with functional status after 3 months, meaning that functional status will get worse as it increases.⁴

The results of the study, which is in accordance with this age study, explain that from several factors studied, there is no significant difference in quality of life before and after surgery, it is done in various age groups of different patients, except in the age group over 75 years old which is statistically lower quality of life.¹³ Another researcher, Kong (1996), conducted a study on elderly

adults who underwent open-heart surgery and attended an inpatient rehabilitation program found that scores on measures of functional independence from entry to exit increased from 76.1 ± 17.1 to 96.7 ± 19.4 ($p < 0.001$). In the self-care subcategory, which includes eating, dressing up, bathing, upper body dressing, lower body dressing, and going to the bathroom, the increase from entry to exit was 25.1 to 33.9 ($p < 0.001$) and the increase from moving to a bed, chair/wheelchair, toilet, and bathtub/shower was 10.4 to 14.8 ($p < 0.001$).¹⁴ Another study examined the functional status of patients after Total Hip Replacement (THR) surgery, obtained the results of a decrease or impairment of functional status as many as 24.4 case groups, and the group that became the most dominant group related to functional status was the age group after being controlled with the length of treatment and rehabilitation activities (Age OR 31.30, p-value=0.031, Rehabilitation OR 28.21, p-value=0.056, length of care OR 12.99, p-value=0.093).¹⁵

Pain Factors to Functional Status

The study's results explain that pain factors affect rest and sleep patterns. The pain caused by surgery can interfere with the quality of sleep of patients, which impacts decreasing functional status.¹⁶ In contrast to other studies, the results were obtained that the pain intensity did not affect patients' sleep quality after laparotomy surgery.¹⁷

The results of the study by Dahlen et al (2006) explained that in the postoperative total knee arthroplasty with the results between the perception of postoperative pain on the third day and the functional status in the second week there is a weak and negative relationship, meaning that the higher the pain felt, the lower the functional status.⁴ Research on pain intensity with functional status in cancer patients also explains that high levels of pain intensity will worsen the patient's functional status and further increase dependence on others. Functional status is an important component in daily activities to meet the needs of life and to maintain health and well-being.⁶

This is also in accordance with other studies that explain that pain can inhibit an individual's ability to perform activities that require mobilization. Changes in functional status occur when the patient performs activities that require the patient to change his

position to meet daily needs such as bathing, changing clothes, and using urinal pots in bed.¹¹ Strengthened by the results of the study which explained that there was an effect of early mobilization on daily life activities based on dependence on patients after cesarean section at the East Seram Regency Hospital, Maluku.¹⁸ The results of the study in 39 men and 61 women there was no significant difference in basic characteristics, while functional ability improved after patients were given a combination therapy of ibuprofen and eprisone which reduced postoperative pain levels. This explains that the lower the pain intensity, the better the patient's functional status.¹⁹

According to the researchers' assumption that the patient's functional status decreases due to changes in a dominant position and causes high pain, it can interfere with fulfilling activities, such as bathing, eating, and dressing independently.

Fall-Efficacy Factors on Functional Status

Peterson (2009) explained that fall efficacy is usually determined by components of a person such as willpower, feelings associated with illness, and self-acceptance attitudes toward changes in capacity, ability to control oneself and perform activities and take personal responsibility.¹¹ Folden & Tapen (2007) stated that there was a significant relationship between fall efficacy and functional status which is a component in carrying out daily activities to meet the needs of life ($r = 0.36$ and $p = 0.045$) after respondents were in the inpatient room in the rehabilitation unit after hip repair surgery.⁴ In contrast to the study on fatigue, falls efficacy and functional status in patients after surgery for lower limb fractures, the results showed no significant relationship between falls efficacy and functional status ($r = -0.28$; $p = 0.05$), meaning that in carrying out daily activities to meet their life needs, patients felt confident that they would not fall.²⁰

Further researchers explained that from a physical point of view, most patients who underwent Coronary Artery Bypass Graft (CABG) surgery had a good quality of life (61.3%). This may be due to the nurse's role in helping patients achieve the best quality of life, helping them become more personally efficient

by accompanying them and providing them with education and information.²¹

The assumption of fall-efficacy researchers concerns individuals' willingness or desire to carry out daily activities. Thus, individuals who have low self-efficacy (self-confidence) will have many doubts about carrying out activities independently. Related to fall-efficacy factors in individuals, the higher the self-confidence possessed by individuals, the lower the fall-efficacy.

CONCLUSION

There was no effect between age and functional status ($p = 0.082$), while pain and fall efficacy had a significant effect on the decline in functional status of postoperative patients with $p=0.000$ respectively. Recommendations to nurses to be able to provide health education related to pain management and fall efficacy, and intervene early mobilization in patients with light activity exercise. This is very important to do to increase patient understanding, can reduce pain and fear of falling, patients can meet the needs of daily life

CONFLICTS OF INTEREST

The authors declare no conflict of interest.

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