

# THE EFFECT OF PRE- OPERATION BASED EDUCATION ON ANXIETY

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**Submission date:** 22-Oct-2021 01:47PM (UTC+0800)

**Submission ID:** 1680824117

**File name:** THE\_EFFECT\_OF\_PRE-OPERATION\_BASED\_EDUCATION\_ON\_ANXIETY.pdf (157.81K)

**Word count:** 2401

**Character count:** 13038

REVIEW ARTICLE

## THE EFFECT OF PRE-OPERATION BASED EDUCATION ON ANXIETY REDUCTION AMONG PATIENTS WITH POST OPEN REDUCTION INTERNAL FIXATION

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### Abstract

Open Reduction Internal Fixation (ORIF) is one of the management among patients who have a fracture. The study aimed at examining the effect of health education pre-operation anxiety reduction among fracturing patients carries post open reduction internal fixation. A quasi-experimental, pre-test and post-test with non-equivalent control group was applied in this study. Thirty-four samples were recruited by using total sampling and divided into two intervention and control groups. Data analysis was performed and presented in descriptive statistics, and significant findings were computed using the paired t-test. Results: The results showed that the mean anxious level intervention group downhill from 28,76+4,603 to 16,61+2,487 after the intervention. Meanwhile, in the control group, the mean anxious level slightly downhill from 28,18+4,066 to 23,82+4,362. The paired t-test obtained a p-value of 0.000, indicating that there were significant differences in the decrease in anxiety level between the intervention and the control group. Conclusion: Preoperative health education interventions based on the health belief model can reduce the level of anxiety in patients with cruris fractures after ORIF surgery. The nurse profession is expected to be able to use preoperative health education actions based on the health belief model to become one of the independent nursing interventions.

**Keywords:** pre-operation based education, fracture, anxiety reduction

International Journal of Nursing and Health Services (IJNHS), December 2019, Volume 2, Issue 4, Page 255-260

Received: 10 June 2019; Revised: 16 July 2019; Accepted: 23 July 2019

DOI 10.35654/ijnhs.v2i4.168

### Introduction

Fractures can cause high rates of morbidity, disability and death in the world (1). Fractures cause symptoms of pain, crepitus, and impaired mobilization. Fracture surgery presents a challenge to the medical world because it has a high risk of complications, infections, pain, anxiety, depression, and mobilization (2). Post-fracture surgery that is late for mobilization will cause muscle atrophy, osteopenia, joint contractures, and malfunctions of the joint itself (3). The effects that occur when pain and anxiety are not immediately addressed are physiological changes such as fear and uncertainty that affect the prognosis of the disease (4) and healing (5).

The prevalence of fractures was reported in 2011-2012 WHO, namely, there were 5.6 million people in the world caused by traffic accidents, and 1.3 million of them died (6). National injury prevalence increased by 8.2% with the most causes being fall (40.9%), motorcycle accidents (40.6%). Riskesdas in 2013 stated that East Java Province was ranked seventh with a report of injuries on the road at 42.1% (7).

Current fracture management can be done surgically ORIF (Open Reduction Internal Fixation), OREF (Open Reduction External Fixation) and non-operative actions or modalities such as traction, splints, and external fixators (8). ORIF surgical patients easily become anxious, even an increase in anxiety can cause pathophysiology of responses such as hypertension, increased pain sensitivity, and rejection of surgery (4). Postoperative pain if not managed properly, can cause the incidence of thrombosis venous, pulmonary embolism, and pneumonia due to decreased mobility (9). ORIF surgery to repair broken bones. The advantage of ORIF is to achieve a perfect and robust repositioning, so there is no need to cast, and can immediately achieve mobilization. In patients, those who will and have undergone surgery tend to feel pain and anxiety This is due to fear of moving, past experience about surgery, and lack of knowledge about disease (10).

There are a number of theories and models in nursing care that can be used to design interventions such as health education based on the Health Belief Model (HBM) (11). The aim of HBM is to be able to change the behavior and perceptions of patients about an illness so that it can improve health status (12). HBM-based pre-operative health education provided with a module guide compiled based on the facts in the field, literature review and discussed with the experts is expected to reduce anxiety, pain intensity, and improve early mobilization in an effort to accelerate patient recovery.

### **Objectives**

The study aimed at examining the effect of health education pre-operation based on the health belief model against anxiety in fracturing patients cruris post-operation open reduction internal fixation.

### **Methods**

This study conducted a quasi-experimental, pre-test and post-test design with non equivalent control group. Thirty-four samples were recruited and allocated into experimental group (n=17) and control group (n=17). Samples were recruited based on the inclusion criteria. The Inclusion criteria included: 1) aged 18-59 years, 2) awareness of *compos mentis*, 3) be able to communicate. Patients with multiple fracture and having other complications as well as psychiatric disorder conditions were excluded in this study.

The intervention group received Health education 1 day before the operation individually using video and module tools for 20 minutes. health education about the explanation of the concept of fracture, perioperative care, deep breathing exercises, effective cough exercises, ROM exercises, postoperative education, including anxiety, pain management, early mobilization, problems that will occur during the postoperative period and anticipation and post-early mobilization behavior operation. Objective and subjective measurement was performed before and after the intervention. The collected data were analyzed using the paired t-test.

The study was approved by the research ethics committee of Health Research Ethics Commission Sidoarjo Hospital with number 893.3/1874/438.6.7/2019. All respondents were informed of the purpose of the study and consented for their participation in the study.

## Results

### Characteristic of respondents

Table 1. showed the percentage of patients' characteristics. Most of respondents were 28-37 years (38,2%) and male (67,6%). Regarding the working status, most of participants were employee (67,6%). They had been graduated from High school (52,9%). Majority of patients has not operational experience (85,3%).

Table 1. Characteristics of respondents (n=34)

Distribution Respondents	Total	Percentage (%)	
Age	18-27	7	20,6
	28-37	13	38,2
	38-47	10	29,4
	48-57	2	5,9
	58-67	2	5,9
Gender	Man	23	67,6
	Women	11	32,4
Work	Does not work	6	17,6
	Private	5	14,7
	Employee	11	32,4
	Government employees	4	11,8
	Farmer	8	23,5
Education	Elementary school	5	14,7
	Junior high school	7	20,6
	High school	18	52,9
	College	4	11,8
Operational History	Not	29	85,3
	Yes	5	14,7

### Effect of pre-operation based education on decreasing anxiety

Table 2 showed the comparison of anxiety before and after receiving pre-operation based education. The results showed that before receiving pre-health education based education, the mean scores of anxiety among patients were 28.76 (moderate anxiety). However, after receiving the intervention the mean anxiety level was 23,82 (moderate anxiety) with p-value <0.001

Table 2 Effect pre-operation based education on decreasing anxiety among patients with fracturing

Variable	Intervention		Delta Δ	p value	Control		Delta Δ	P value
	Pre	Post			Pre	Post		
	Mean ± SD	Mean ± SD			Mean ± SD	Mean ± SD		
Anxiety	28,76+4,603	21,71+4,870	7,059	0,000	28,18+4,066	23,82+4,362	4,353	0,000

\*paired t-test for differences groups (p<0.05)

## Discussion

The results showed that preoperative health education among intervention group showed significantly decrease than the control group. This study supports the study of Karanci (2003) who measured pre and post anxiety levels of patients who performed emergency surgery using the ASSQ measurement scale (Anxiety Specific to Surgery Question) (13). The results showed that there was a significant decrease in anxiety from the pre to the postoperative period in patients who had been given health education and positive individual coping motivation.

Anxiety is a characteristic of behavior-related fears (14). Keliat (2011) (15) provides an anxious definition as an emotional response to something faced. Another notion is an unpleasant sensation that disrupts the comfort and well-being (16). Anxiety is often experienced by patients who will undergo surgery or after surgery because of psychological effects and fear that something will be felt. A recent observational study mentioned that 16,000 patients expressed anxiety when undergoing surgical procedures (17). In addition, anxiety has been shown to be associated with increased morbidity, postoperative mortality (18).

Karanci and Dirik's (2013) (13) study shows that there are several factors that affect anxiety in pre-post emergency surgery patients such as sociodemography (age, education level, work status, gender), helplessness, and self-balancing, and coping with active individuals associated with postoperative anxiety. The most significant result is that before surgery women are more anxious than men. However, after surgery there is no difference between the two. Preoperative anxiety was also a predictor of death and morbidity in patients aged > 70 years, the factors that affected were age, sex, and depression (18).

Health education HBM-based health belief preoperative model is a way to reduce anxiety in patients with cruris fractures after ORIF surgery. This is in line with the research of Aust et al., (16) which measures preoperative anxiety in elderly patients, showing results that anxiety before surgery is still high in adult patients, so a more thorough assessment needs to be carried out by nurses in pre and post-surgery. A similar study was carried out by another study by Williams et al., (18) which examined the association of anxiety with postoperative cardiac surgery mortality using the Hospital (anxiety) anxiety scale and depression scale showing that as many as 7% of patients still experience high anxiety, anxiety this has a high risk of death and strong major. the limitation of this study is the lack of time for researchers to directly observe the behavior of early mobilization of respondents so that it involves the family to observe. The limitation of this study is the lack of time for researchers to directly observe the behavior of early mobilization of respondents so that it involves the family to observe

## Conclusion

The Preoperative health education interventions based on the health belief model can reduce the level of anxiety in patients with cruris fractures after ORIF surgery. The nurse profession is expected to be able to use preoperative Health education actions based on the health belief model to become one of the independent nursing interventions.

According to the result, the limitation of this study is the lack of time for researchers to directly observe the behavior of early mobilization of respondents so that it involves the family to observe and the researcher directly confirms the early mobilization carried out on that day

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