

# Effect of Pre-Operative Counselling on Post-Operative Outcome in Hernia Surgery Patients

Dr Yeola M<sup>1</sup>, Dr Jaipuriya P.<sup>2</sup>

**Abstract:** *This article examines the impact of preoperative education on postoperative anxiety, pain and hospital stay. Surgery can be physically and psychologically stressful for patients. It is hypothesized that education before surgery reduces anxiety and enhances postoperative outcomes. This article is a prospective study carried out at Acharya VinobhaBhave Rural Hospital to evaluate the impact of preoperative education on postoperative outcomes. This study points to the fact that preoperative education is beneficial to adult surgical patients.*

**Keywords:** Anxiety, Counseling, Hernia, Hospital Stay, Pain

## 1. Introduction

Being healthy is defined not only as the absence of disease and disability, but also as a complete well being in terms of physical, social and mental state. The continuity of the inner environment of the human organism is dependent on the individual's physiological and psychological balance. The main objective of health care is to provide maintenance of the state of health, by preserving the continuity of the inner environment and to help in restoring the balance lost in the state of illness.<sup>[1,2]</sup> People sometimes have to be hospitalized for the maintenance and continuity of their health.<sup>[3,4]</sup> The process of hospitalization, regardless of the reason, causes different reactions in different people, including adverse reactions such as anxiety, fear and depression. The patient feels anxiety as a result of the physical effects imposed by the disease as well by the change of environment imposed by hospitalization. These factors, which may cause anxiety in the hospitalized individual, include the anxiety of receiving painful treatment, being away from his/her family, losing his/her job, being in an alien environment and encountering unknown devices and procedures. The anxiety of undergoing an operation also feeds into this list of factors and constitutes a significant source of anxiety.<sup>[3,5,6]</sup> Anesthesia, operation and some invasive interventions invoke real and unreal fears. For the patient, an operation implies pain, loss of independence and distortion of body image and each of these factors is perceived as a threat. The individual feels anxiety when he/she faces this type of threat that is directed to his/her body or life.<sup>[7,8]</sup>

Anxiety is defined as a state that emerges as a result of a response against threats that may disrupt bodily balance, or a failure in restoring the lost balance.<sup>[9]</sup> Anxiety has several negative effects on an organism, and one of these effects is pain. Pain is an abstract concept and affects the life quality of the individual in a negative way by preventing the individual from carrying out daily activities. The degree or nature of pain can only be described by the individual affected by this state.<sup>[10-13]</sup> Pain is the primary complaint of post-operative patients.<sup>[10]</sup> Severity of postoperative pain is related to several factors. Operation type is one of these.<sup>[14-16]</sup> Pain is an individual's subjective experience and anxiety is the most important determinant of postoperative pain. Acute pain and acute anxiety are usually seen together, with decreasing pain reducing the severity of the pain response.<sup>[17]</sup> Studies have shown that anxiety increases pain

and the need for pain killers in the postoperative period, and also reduces pain resistance.<sup>[18]</sup> In research carried out by Ozalpet al. on 99 female patients, patients with depression and high anxiety levels were found to experience more pain and to need more pain killers.<sup>[19]</sup>

Intense anxiety experienced in the pre-operative period increases the intensity of pain in the postoperative period and makes pain control difficult.<sup>[20]</sup> As high levels of pain are associated with the anxiety and fear level of the patient, providing education is one of the most important strategies that can be used by the doctors and nurses for reducing postoperative pain.<sup>[21]</sup> Research has demonstrated that anxiety levels of the patient and his/her family, and the information required by each are comparable.<sup>[22,23]</sup> Anxieties of patients in general have been found to be associated with lack of information. Since education reduces anxiety, preoperative education and informing is the first step in the psychological preparation of patients.<sup>[21,24]</sup> Pre-operative patient education reduces patient anxiety and helps in overall pain control.<sup>[17]</sup>

Spalding (1995) compared a group of patients who had attended a preoperative education programme with a control group who had not. The results showed that the experimental group had a mean of 4 days less hospitalization than the control group, with cost savings of £10 640. Educational programs designed according to the needs of patients also are found to help satisfy the patient's need for knowledge, to decrease anxiety, to shorten the discharge time, and to allow discharge with less cost.<sup>[22,25,26]</sup>

## 2. Aims and Objectives

### Aim:

To study the impact of pre-operative counselling on the post-operative outcome of the patients undergoing inguinal hernia operation.

### Objectives:-

To study the impact of preoperative education on early post operative recovery in terms of :-

- Post operative pain
- Anxiety
- Hospital stay

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**Inclusion and Exclusion criteria:-**

**Inclusion criteria:-**

- All the patients with uncomplicated inguinal hernia admitted to
- AVBRH, Sawangi (Meghe), Wardha, Maharashtra.
- Age:- 18 to 60 years
- Given consent for research project.

**Exclusion criteria:-**

- Age < 18 years and >60 years.
- Inguinal Hernias presenting with complications warranting emergency surgery.
- Not given consent

**3. Materials and Methods**

- This is a experimental prospective case control study carried out with inguinal hernia patients of 18 - 60 years who gave consent for the study and who were hospitalized in the tertiary care Acharya VinobaBhave Rural Hospital, associated with Jawaharlal Nehru Medical College, Sawangi (Meghe), Wardha for inguinal hernia operation. Considering the age group to which the inventory scale could be applied, and their ability to understand, the study included only those patients between 18 - 60 years of age.

- The study data was collected during January 2015 to June 2015 from a total of 100 patients. 50 patients were in the control group and 50 in the study group.
- Patients were selected from the population using a nonprobability sampling method, and they were categorized into experimental and control groups by a nonprobability/random sampling method.
- The study group patients were counselled in respect of the type of anaesthesia, operative procedure, postoperative pain and likely complications by trained social workers, nurses and doctors .
- The patients in the control group were given information regarding the operation in the pre-operative clinical routine (pre and post-operative nutrition, hour of admission to the operating room, duration of hospitalization).
- Data was collected by means of a questionnaire given to the patients in the form of Spielberger' State-Trait Anxiety Inventory scale(STAIS) and visual analogue scale (VAS) on 7<sup>th</sup> post-operative day.
- VAS is a scale in which two ends are named differently on a vertical and horizontal line measuring 10 cm (0 = no pain, 10 = severest pain). The patient is asked to mark on this line the point corresponding to the pain severity he/she feels. The distance between the marked point and the lowest end on the line (0 = no pain) is measured and the numerical value found designates the patient's pain severity.<sup>[30]</sup>

**SELF-EVALUATION QUESTIONNAIRE STAI Form Y-1**

**Please provide the following information:**

Name \_\_\_\_\_ Date \_\_\_\_\_ S \_\_\_\_\_  
 Age \_\_\_\_\_ Gender (Circle) M F T \_\_\_\_\_

**DIRECTIONS:**

A number of statements which people have used to describe themselves are given below. Read each statement and then circle the appropriate number to the right of the statement to indicate how you feel *right now*, that is, *at this moment*. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

	NOT AT ALL	MODERATELY SO	VERY MUCH SO	
1. I feel calm.....	1	2	3	4
2. I feel secure .....	1	2	3	4
3. I am tense .....	1	2	3	4
4. I feel strained .....	1	2	3	4
5. I feel at ease .....	1	2	3	4
6. I feel upset .....	1	2	3	4
7. I am presently worrying over possible misfortunes .....	1	2	3	4
8. I feel satisfied .....	1	2	3	4
9. I feel frightened .....	1	2	3	4
10. I feel comfortable .....	1	2	3	4
11. I feel self-confident.....	1	2	3	4
12. I feel nervous .....	1	2	3	4
13. I am jittery .....	1	2	3	4
14. I feel indecisive.....	1	2	3	4
15. I am relaxed .....	1	2	3	4
16. I feel content .....	1	2	3	4
17. I am worried .....	1	2	3	4
18. I feel confused.....	1	2	3	4
19. I feel steady.....	1	2	3	4
20. I feel pleasant.....	1	2	3	4

**SELF-EVALUATION QUESTIONNAIRE**

STAI Form Y-2

Name \_\_\_\_\_ Date \_\_\_\_\_

**DIRECTIONS**

A number of statements which people have used to describe themselves are given below. Read each statement and then circle the appropriate number to the right of the statement to indicate how you *generally* feel. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe how you generally feel.

ALMOST NEVER  
 SOMETIMES  
 OFTEN  
 ALMOST ALWAYS

- |                                                                                                   |   |   |   |   |
|---------------------------------------------------------------------------------------------------|---|---|---|---|
| 21. I feel pleasant.....                                                                          | 1 | 2 | 3 | 4 |
| 22. I feel nervous and restless .....                                                             | 1 | 2 | 3 | 4 |
| 23. I feel satisfied with myself.....                                                             | 1 | 2 | 3 | 4 |
| 24. I wish I could be as happy as others seem to be .....                                         | 1 | 2 | 3 | 4 |
| 25. I feel like a failure .....                                                                   | 1 | 2 | 3 | 4 |
| 26. I feel rested .....                                                                           | 1 | 2 | 3 | 4 |
| 27. I am "calm, cool, and collected".....                                                         | 1 | 2 | 3 | 4 |
| 28. I feel that difficulties are piling up so that I cannot overcome them.....                    | 1 | 2 | 3 | 4 |
| 29. I worry too much over something that really doesn't matter.....                               | 1 | 2 | 3 | 4 |
| 30. I am happy .....                                                                              | 1 | 2 | 3 | 4 |
| 31. I have disturbing thoughts .....                                                              | 1 | 2 | 3 | 4 |
| 32. I lack self-confidence.....                                                                   | 1 | 2 | 3 | 4 |
| 33. I feel secure .....                                                                           | 1 | 2 | 3 | 4 |
| 34. I make decisions easily .....                                                                 | 1 | 2 | 3 | 4 |
| 35. I feel inadequate.....                                                                        | 1 | 2 | 3 | 4 |
| 36. I am content .....                                                                            | 1 | 2 | 3 | 4 |
| 37. Some unimportant thought runs through my mind and bothers me .....                            | 1 | 2 | 3 | 4 |
| 38. I take disappointments so keenly that I can't put them out of my mind .....                   | 1 | 2 | 3 | 4 |
| 39. I am a steady person.....                                                                     | 1 | 2 | 3 | 4 |
| 40. I get in a state of tension or turmoil as I think over my recent concerns and interests ..... | 1 | 2 | 3 | 4 |

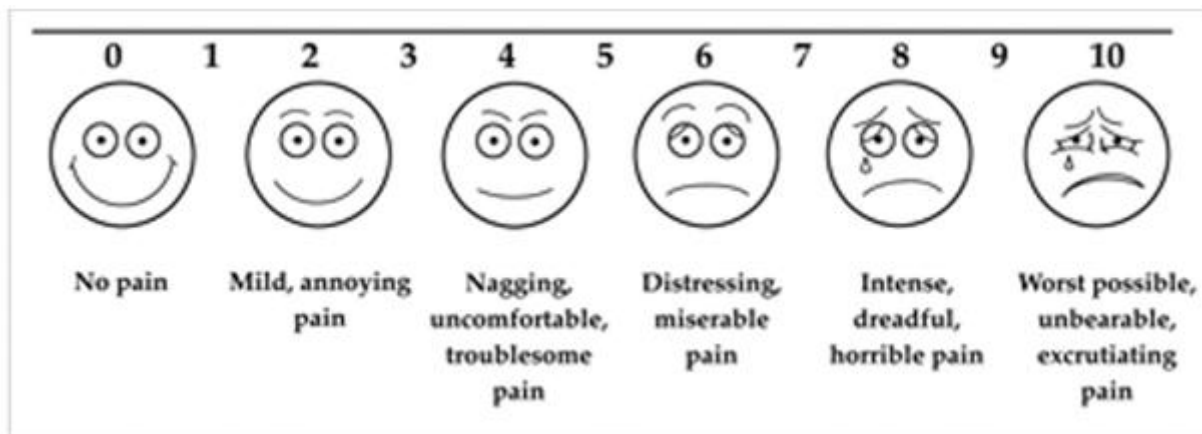


**State-Trait Anxiety Inventory for Adults Scoring Key (Form Y-1, Y-2)**

Developed by Charles D. Spielberger in collaboration with R.L. Gorsuch, R. Lushene, P.R. Vagg, and G.A. Jacobs

To use this stencil, fold this sheet in half and line up with the appropriate test side, either Form Y-1 or Form Y-2. Simply total the scoring **weights** shown on the stencil for each response category. For example, for question # 1, if the respondent marked 3, then the **weight** would be 2. Refer to the manual for appropriate normative data.

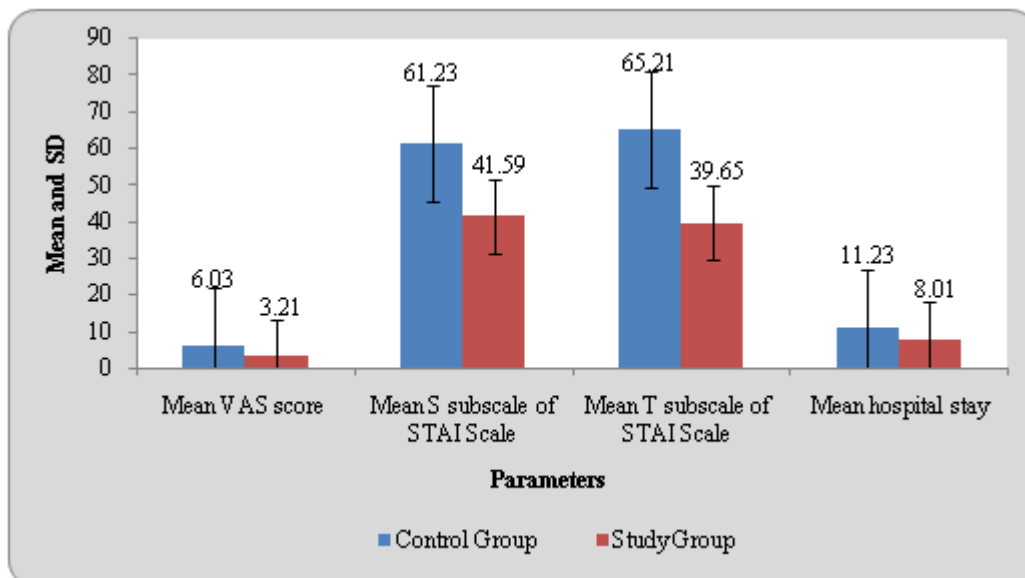
		VERY MUCH SO	MODERATELY SO	SOMEWHAT	NOT AT ALL			ALMOST ALWAYS	OFTEN	SOMETIMES	ALMOST NEVER
<b>Form Y-1</b>						<b>Form Y-2</b>					
1.	4	3	2	1		21.	4	3	2	1	
2.	4	3	2	1		22.	1	2	3	4	
3.	1	2	3	4		23.	4	3	2	1	
4.	1	2	3	4		24.	1	2	3	4	
5.	4	3	2	1		25.	1	2	3	4	
6.	1	2	3	4		26.	4	3	2	1	
7.	1	2	3	4		27.	4	3	2	1	
8.	4	3	2	1		28.	1	2	3	4	
9.	1	2	3	4		29.	1	2	3	4	
10.	4	3	2	1		30.	4	3	2	1	
11.	4	3	2	1		31.	1	2	3	4	
12.	1	2	3	4		32.	1	2	3	4	
13.	1	2	3	4		33.	4	3	2	1	
14.	1	2	3	4		34.	4	3	2	1	
15.	4	3	2	1		35.	1	2	3	4	
16.	4	3	2	1		36.	4	3	2	1	
17.	1	2	3	4		37.	1	2	3	4	
18.	1	2	3	4		38.	1	2	3	4	
19.	4	3	2	1		39.	4	3	2	1	
20.	4	3	2	1		40.	1	2	3	4	



Visual analogue scale

#### 4. Observation and Results

n/Study Parameters	Mean VAS score	Mean S subscale of STAI Scale	Mean T subscale of STAI scale	Mean hospital stay(in days)
Control Group (n=50)	6.03±1.29	61.23±2.59	65.21±5.62	11.23±2.31
Study Group (n=50)	3.21±1.25	41.59±5.29	39.65±2.53	8.01±1.15
p value	0.003,S,p<0.05	0.0001,S,p<0.05	0.0001,S,p<0.05	0.005,S,p<0.05



Mean VAS score for the study group was  $3.21 \pm 1.25$  and the control group was  $6.03 \pm 1.29$ . The p value for the post-operative pain reduction in study group was 0.003, S ( $p < 0.05$ ), which was significant.

The State score for evaluation of reduction in post-operative anxiety for the study group was  $41.59 \pm 5.29$  and the Trait score was  $39.65 \pm 2.53$  while for the control group state score was  $61.23 \pm 5.62$  and trait score was  $65.21 \pm 5.62$ . The p value for State score for study group was 0.0001, S ( $p < 0.05$ ) and the p value for Trait score in study group was 0.0001, S ( $p < 0.05$ ), which were significant.

The mean hospital stay for study group was  $8.01 \pm 1.15$  days and for control group was  $11.23 \pm 2.31$  days. The p value for length of the hospital stay was 0.005, S ( $p < 0.05$ ) which was significant.

## 5. Discussion

Classic works by Hayward (1975) and Boore (1978) demonstrated the benefits of preoperative patient education in the reduction of postoperative pain, stress, anxiety and infection.

In the literature, it is stated that people remember 10% of what they read, 20% of what they hear, 30% of what they see, and 50% of what they both see and hear, provided that time is held constant.<sup>[27]</sup>

In this study, all the patients in the study group were counselled in detail about the operative procedure which was going to be performed, the type of anaesthesia to be given with its procedure, the type of pain patient may feel after surgery and about the complications of surgery if occurred.

In this study, the mean state anxiety score on 7<sup>th</sup> post-operative day in study group was  $41.59 \pm 5.29$ , which was significantly less ( $p = 0.0001$ , S,  $p < 0.05$ ) as compare to control group which had state anxiety score of  $61.23 \pm 5.62$ .

In research carried out by Akkas<sup>[28]</sup>, he found that education given to patients in preoperative period was found to reduce

their anxiety level. In another study by Asilioglu and Celik<sup>[29]</sup> on the effect of preoperative education on anxiety in open surgery patients, the anxiety level of the educated group was lower than the control group which was in accordance with this study. In this study, the mean visual analogue scale (VAS) score for pain on 7<sup>th</sup> post operative day in study group was  $3.21 \pm 1.25$ , which was significantly less ( $p = 0.003$ , S,  $p < 0.05$ ) as compare to control group which had VAS score of  $6.03 \pm 1.29$ .

Sjoling et al.<sup>[30]</sup> investigated the “effect of pre-operation information on anxiety level, post-operative pain and pain control satisfaction in patients with total knee arthroplasty”. Lower scores of VAS values were recorded in all of the education groups compared to the control group, thus demonstrated that the experiment group reported less pain compared to the control group.

In a study by Karayurt<sup>[26]</sup>, which investigated the “effect of different pre-operative education programs on the anxiety and pain levels of patients”, the patients in the group that had received routine care reported the highest level of pain. Pain levels were lowest in the group that had received education which was in accordance with this study.

Giraudet-Le Quintec et al compared the impact of a collective multidisciplinary standardized information session with that of the usual verbal information on preoperative and postoperative anxiety of patients scheduled for total hip arthroplasty. The intervention group was significantly less anxious preoperatively ( $P = 0.01$ ), experienced significantly less pain postoperatively ( $P = 0.04$ ) and stood sooner ( $P = 0.07$ ) than the control group. The findings support attending an educational programme, as it reduced preoperative anxiety, and better prepared the patients to cope with postoperative pain.

The mean length of hospital stay in the study group was  $8.01 \pm 1.15$  days as compare to control group which was  $11.23 \pm 2.31$  days, this was found to be statistically significant ( $p = 0.005$ , S,  $p < 0.05$ ).

Spalding compared a group of patients who had attended a preoperative education programme with a control group who

had not. The results showed that the experimental group had a mean of 4 days less hospitalization than the control group which was in accordance with this study. Engelman RM mentioned the role of preoperative education of the patient on early discharge from the hospital.<sup>(31)</sup>

## 6. Conclusions and Recommendations

Lack of information related to possible pre-operation and post-operation conditions increases the anxiety level of patients. This causes post-operative emotional problems and a more intense sense of pain and thus increase hospital stay. This study has critically examined and found that preoperative patient education significantly reduces postoperative anxiety, pain, and length of hospital stay. This study strongly recommends preoperative patient education so as to have better outcome, less morbidity and less healthcare cost.

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