

## Psychological Distress in Candidates for Surgery: a Comparative Study Between Patients with Chronic and Acute Diseases

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### ABSTRACT

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**Background:** Preoperative psychological distress, including anxiety, stress, and depression, is an important issue in psychological pathology. It is of double importance among vulnerable groups such as patients with incurable chronic diseases (such as breast cancer) and simple diseases (such as cholecystitis). We assessed the development of anxiety and stress symptoms in two groups undergoing surgery; breast cancer patients and patients undergoing cholecystectomy.

**Methods:** In a causal-comparative study, 30 participants were selected consecutively from a list of candidates for mastectomy and were compared with 30 patients undergoing cholecystectomy in terms of psychological distress. All samples completed the Depression, Anxiety, and Stress Scales-21 (DASS-21).

**Results:** Our results showed that the average scores of stress ( $P < .000F=1/71$ ), anxiety ( $P < .000F=117/556$ ), and depression ( $P < .000F=3/41$ ) were higher in patients with breast cancer surgery (mastectomy) than in those undergoing cholecystectomy surgery.

**Conclusion:** Patients themselves have significant effects on the level of their stress. So, in this study, we attempted to examine the effects of stress and anxiety on people before surgery.

**Keywords:** Preoperative Anxiety, Depression, Stress, Psychological Distress, Surgery



## INTRODUCTION:

Numerous studies have investigated pre-, intra-, and postoperative risk factors, and all have concluded that high incidence rates of preoperative anxiety (27–40.6%) and depressive symptoms (16–43%) were reported before surgery<sup>1</sup>. Generally, patients have to be hospitalized a few days before the operation day to be checked by their physicians. Thus, it is common for them to feel stressed. Some operations take just a day<sup>2</sup>. In these cases, patients visit the hospital or clinic, receive their medical service, and return home. Even in these cases, there is a growing concern about the possible risks of the surgery. In a precise definition, anxiety is defined as a feeling of worry, discomfort, and fear<sup>3,4</sup>. There might be a lot of internal or external stimuli to be handled with the help of anxiety. People experience one of the most stressful situations during the preoperative period. This stress sometimes leads to cognitive and emotional responses<sup>5</sup>. Some factors contribute to the corresponding tension, including fear of pain, disability, and dependence on others, concerns about the lesions, not seeing their family again, and regaining consciousness during the operation, and other difficulties. Smoking, a history of cancer, hopelessness about the future, experiencing great pain, and prior deep anesthesia are factors resulting in high levels of stress<sup>6,7</sup>.

Few studies have evaluated the relationship between the severity and nature of a disease with anxiety in candidates for surgery. We can easily find the records of emotional states before, during, and after the operation in breast cancer patients<sup>8-11</sup>. The female breast is a potent symbol of femininity, maternity, and sexuality. However, no studies have been conducted on the anxiety of breast cancer patients who may be concerned about these symbols<sup>12,13</sup>. Nevertheless, simple surgeries such as cholecystectomy do not threaten human integrity<sup>3</sup>. In these cases, the preoperative problems can generate several postoperative problems. Deep anesthesia can

be mentioned as one of these problems<sup>9,10</sup>. Other problems are associated with preoperative anxiety-related nausea, tachycardia, vomiting, and the risk of infection. Reports have also revealed significant effects of preoperative anxiety on breast cancer patients by 60-80%<sup>3</sup>. Preoperative anxiety provokes the autonomic nervous system, stimulates the endocrine system, and consequently results in tachycardia, hypertension, and cardiac stimulation, which might lead to arrhythmia<sup>14</sup>. The development of long-term anxiety could result in protein denaturation, reduced wound healing, a decline in body immunity reactions, increased infection risk, and electrolyte imbalance<sup>15</sup>. Regardless of the types of surgery, we can categorize patients into two categories of simple, such as cholecystitis, and incurable disease patients (e.g., cancer, dialysis, hemophilia) to discuss therapeutic aspects of preoperative anxiety and stress. Patients with incurable diseases are usually involved in the condition for a long time and thus face more psychological problems than patients with simple diseases<sup>15</sup>. Depression and anxiety are common in hospitalized patients, especially those waiting for surgery<sup>16</sup>. Depression is a heterogeneous disease characterized by low mood, loss of pleasure and interest in normally enjoyable activities, loss of energy, difficulties in thinking and decision-making, appetite and sleep disturbances, psychomotor disturbances and suicidal ideation<sup>1</sup>. Depression is also a strong predictor and correlate of before surgical and after surgical distress<sup>17</sup>. Many studies have identified depression as an independent risk factor for the development of before surgical and after surgical distress, which may be a cause of long and incomplete recovery after surgery. Depression is also frequent in intensive care unit (ICU) patients and is associated with a lower health-related quality of life and increased mortality<sup>17</sup>.

Since no research has been done on the difference between preoperative anxiety, stress, and depression between patients with an incurable disease and those with

an acute disease, it is necessary to investigate this issue for individualized preventive and therapeutic planning for patients undergoing surgery. We assumed that patients diagnosed with more dangerous diseases, such as breast cancer, are more anxious and depressed than patients undergoing simple surgeries for acute diseases. So, they should receive more psychological and medical support. This study aimed to compare psychological distress in women with breast cancer and those undergoing cholecystectomy.

**METHODS:**

All 100 patients admitted to the hospital ARRAD, Ardabil, Iran, for mastectomy or cholecystectomy in 2018 were invited to participate in the study. Those who agreed to take part were included after providing written informed consent. The study sample who met the inclusion criteria included 60 patients selected and then randomly assigned into two groups (30 patients with simple diseases, and 30 patients with incurable diseases).

**Measurements**

**Depression Anxiety and Stress Scales: (DASS-21)**

We used a set of three self-report scales named DASS to modify the negative emotional states of tension, stress, and depression. This scale is used to measure defined emotional states as well as measuring tension, stress, and the level of anxiety. This scale may fulfill the needs

of both scientists and medical researchers. Every three DASS scale contains 14 items, which can be put into 2-5 items with the same content. The depression scale evaluates life standards, hopelessness, inactivity, lethargy, and discouragement. The anxiety scale evaluates the effects of stress on muscles, physical anxiety, excitement, and experiences of stress. The stress scale measures the levels of stimulation. Relaxing complications, getting angry easily, or impatience are the factors measured by the stress scale. All items were put into 4 point severity-frequency scales based on the level of a patient’s experience of each state during the past week. The total result was obtained from the total scores of relevant items(18)18. The overall score of each scale doubled (ranging from 0 to 42) to yield equivalent scores to the full DASS 42.

**RESULTS:**

A total of 60 patients with breast cancer and undergoing cholecystectomy surgery met the inclusion criteria for the study, with 30 in each group. A breast cancer group and two subgroups in the group undergoing cholecystectomy surgery were studied. The results show that the lowest age group was 20-29 years (11.66%), and the highest was 50-59 years (35%).

The unadjusted means and standard deviation for all other outcome variables are presented in **Table 1**. As

**Table 1. The mean and standard deviation of stress and anxiety and depression scores**

	Chronic diseases group (breast cancer)	Simple diseases group (cholecystectomy)
Anxiety	24.95 M (4.38) S	24.80 M (4.80) S
Depression	39.19 M (4.101) S	21.04 M (0.32) S
Stress	41.105 M (20.50) S	86.23 M (13.23) S

shown, the average stress, anxiety, and depression were more in patients with chronic disease than in patients with cholecystectomy surgery.

As demonstrated in **Table 2**, there were significant differences in the mean of all variables studied between two groups (**Table 3**). The differences between preoperative levels of anxiety, stress, and depression were statistically significant ( $P < .000$ ).

## DISCUSSION

We found that patients with chronic diseases such as breast cancer experience more preoperative psychological distress than those undergoing cholecystec-

tomy. There has been very little research conducted about the experience of a woman diagnosed with breast cancer<sup>19</sup>. Results have revealed that the level of satisfaction from the body can have significant impacts on confidence, health, life quality, the level of tension, and well-being<sup>20, 21</sup>. In studies on breast cancer, body image was also examined. It has been debated and is still being discussed whether body satisfaction has a great influence on breast cancer and overall. In the normative sample based on 1870 Australian females aged 17 to 79 years, the mean scores (standard deviation) were 6.14 (6.92) for the DASS21-D subscale, 4.80 (5.03) for the DASS21-A subscale, and 10.29 (8.16) for the

**Table 2. Multivariate analysis of variance (MANOVA) of Anxiety, stress, and depression scores**

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	0.995	5.91	2	56	0.000
	Wilks' Lambda	0.943	5.91	2	56	0.000
	Hotelling's Trace	211.248	5.91	2	56	0.000
	Roy's Largest Root	284.211	5.91	2	56	0.000
b. Design: Intercept + education						

**Table 3. ANOVA of Anxiety, stress, and depression scores**

Source	Depepent Variable	Type III Sum of Squares	Df	Mean Square	F	Sig.
Intercept	Anxiety	127.121	1	63.65	1.71	0.000
	Stress	2730.620	1	2730.620	117.556	0.000
	Depression	354.147	1	354.147	4.41	0.005
a. R Squared = .000 (Adjusted R Squared = -.009)						

DASS21-S subscale<sup>22</sup>.

The obtained results on the DASS-21 scale show that breast cancer patients undergoing surgery more often experience anxiously, perceive their body as a source of negative feelings, and have low self-esteem and difficulty in everyday life<sup>23</sup>. Since the breast is full of symbolism for women, mastectomy is a threat against their femininity<sup>24</sup>. Therefore, the fear and anxiety of mastectomy remain the main reasons for delayed presentation. There is a need for education programs in broader social and cultural dimensions to pinpoint the stigma associated with mastectomy in Iran.

Higher incidence of anxiety, stress, and depression is reported in surgical patients. Longer hospital admission plays a crucial role in this group. Large-scale case-control studies are needed to strengthen the relationship of long hospital admissions, complicated and chronic illnesses with the development of psychiatric diseases, and the impact of these mental illnesses on the disease outcome<sup>25</sup>. Psychological care should be offered to these patients. According to the reports, further research and therapeutic protocols are needed to reduce the fear and anxiety in these groups.

### CONCLUSION:

Psychological Distress is a risk factor for the Expansion of illnesses such as cancer adversely affects the course, complications, and management of chronic medical illness. Both maladaptive health risk behaviors and psychobiological factors associated with Psychological Distress.

may explain Psychological Distress's negative effect on the outcomes of the surgery process. Most treatment studies have found that both evidence-based Psychological Distress therapies and antidepressant medications are efficacious treatments in patients with depression and comorbid medical illness and that collaborative care is an effective health services model to deliver these treatments to large primary care populations.

### CONFLICT OF INTEREST

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