

Research article

# Postoperative anticipatory anxiety between women and men in patients with spinal cord injury

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**Abstract:** The subtleties involved in the post-surgical recovery of people suffering from spinal cord injuries involve notable psychological issues that require further examination. (1) Background: people affected by spinal cord injuries may experience severe symptoms, as motor skill deficits, sensory processing irregularities, and pain, all of which can have a negative impact on their quality of life and mental health.; (2) Methods: we studied 264 patients hospitalized in the Neurosurgery Clinic 2 of the "Bagdar Arseni" Hospital for acute spinal cord injuries, in 2 groups of patients with and without CBT psychotherapy; (3) Results: we studied 97 women and 167 men; average anxiety was lower in women compared to men, showing a decreasing trend after psychotherapy for both sexes (4) Conclusions: we discovered that anticipatory anxiety after spinal cord injuries is high, especially in male patients. And psychotherapy brings benefits in reducing anxiety for both categories of patients, regardless of the age group they belong to.

**Keywords:** psychological intervention, spinal cord injury, anticipatory anxiety, women VS men

## 1. Introduction

The subtleties involved in the post-surgical recovery of people suffering from spinal cord injuries involve notable psychological issues that require further examination. Within these issues, anticipatory anxiety presents in a manner that is particularly gender-differentiated, affecting the emotional health of patients and the course of their recovery.

By recognizing the complex experiences of patients, regardless of gender, health professionals can apply techniques aimed at reducing anticipatory anxiety, thereby cultivating a more soothing environment conducive to recovery. Finally, a comprehensive investigation of gender-related anxiety in the postoperative context can contribute to clinical methodologies and improve overall patient outcomes (1).

Spinal cord injuries, which involve changes in the spinal cord with adjacent spinal structures, are medical conditions with a considerable effect on neurological function and movement control (1). People affected by spinal cord injuries may experience severe symptoms, as motor skill deficits, sensory processing irregularities, and pain, all of which can have a negative impact on their quality of life and mental health. The complex features of these conditions can lead to various psychosocial problems, where the relationship between ongoing physical problems and mental health conditions, including anxiety and depressive states, can intensify the overall experience of patients (2) (3) (4). The perspective of outcomes after surgery adds another level of complexity to the psychological experience, particularly when considering the differences between

how men and women react to anxiety related to surgical procedures [1]. A thorough exploration of these factors highlights the essential requirement for specific psychological strategies designed to effectively address the specific anticipatory anxiety experienced by people with vertebro-medullary conditions. The interactive relationship between pain and anxiety undesirably influences (for the patient and for the medical team) the therapeutic expectation. When these two affective-emotional and physical symptoms are consciously combined with the patient's sense of guilt and his vulnerability (resulting from the dependency imposed by the present condition), it is impossible for the patient to identify his own inner reserves to overcome his condition without being helped by a psychologist. The most effective is changing the "here and now" thinking style, teaching the patient to discover new coping mechanisms (5).

The efficacy of psychological interventions in reducing anticipatory anxiety in postoperative patients, particularly those with spinal cord injuries, has received particular attention. Cognitive-behavioral therapy (CBT), recognized for its methodical approach to modifying maladaptive cognitive patterns, appears to be beneficial in decreasing preoperative anxiety levels.

## 2. Materials and Methods

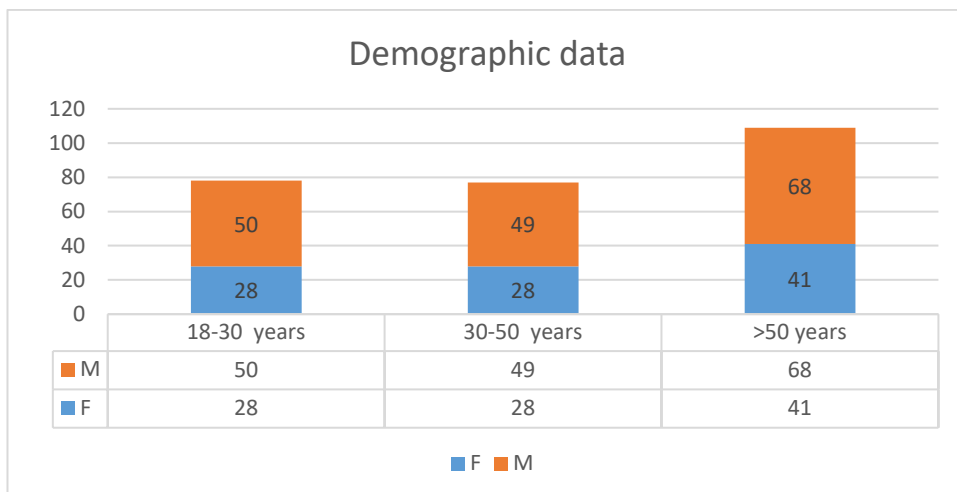
With the consent of the Ethics Commission of the "Bagdasar Arseni" Hospital, we studied 264 patients hospitalized in the Neurosurgery Clinic 2 of the "Bagdar Arseni" Hospital for acute spinal cord injuries in 2 groups of patients with and without CBT psychotherapy. We statistically processed the data obtained using the Microsoft Office 2021 package. We applied the Schultz-directed imaging technique, the objective being the de-tension and relaxation of the patient, then focusing on breathing, specifying to him that he was not breathing correctly. A person's breathing stroke is inspiration 4 seconds, apnea 3 seconds, expiration 4 seconds, then rep. The cognitive-behavioral psychotherapy of anxiety disorders aims to reduce physiological anxiety, eliminate avoidant behavior, modifier subjective interpretations of inner dialogue, change the interpretation through intrusive, negative scenarios and thoughts, the direct action on the emotional and physiological response to anxiogenic stimuli, desensitization or de-conditioning. We also applied techniques from Eriksonian therapy and hypnotic trance through Schultz training for emergency intervention on anxious patients. We also used music therapy (a spectacular intervention) with particularly good results.

## 3. Results

We obtained the following results

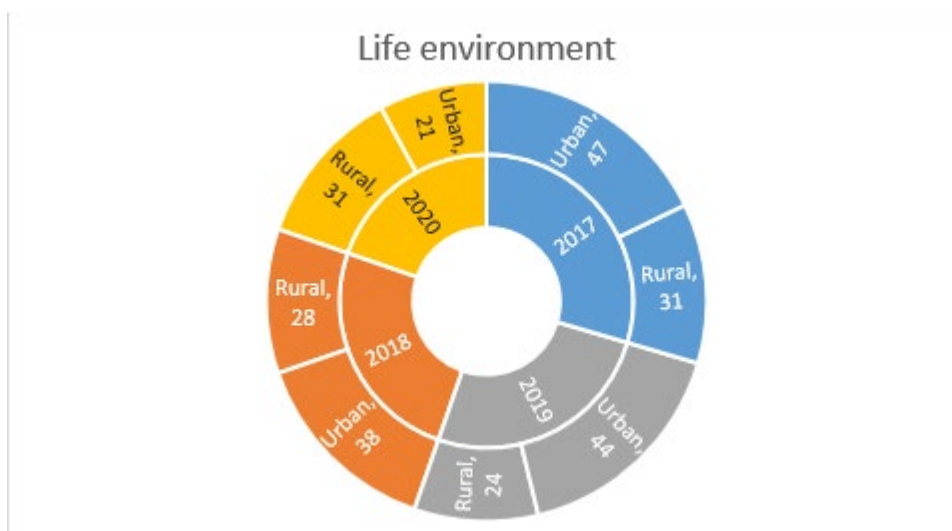
### 3.1. Demographic data

We studied 264 patients hospitalized in the Neurosurgery Clinic 2 of the "Bagdar Arseni" Hospital for acute spinal cord injuries: 97 women and 167 men.



**Figure 1.** Demographic data

The patients came from rural and urban environments. The patients came from rural and urban environments: 150 lived in the city and 114 lived in the village.



**Figure 2.** Patient life environment: in 2017 31 patient were from rural environment and 47 from the urban; in 2018 28 patient lived in rural environment and 38 in the urban one; in 2019 24 patient lived in rural environment and 44 in the urban one; in 2020 31 patient lived in village and 21 in the city

**Table 1.** Patient environment

	2017		2018		2019		2020	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
18-30 years	10	6	12	8	12	12	8	10
30-50 years	16	12	8	12	12	2	4	11
>50 years	21	13	18	8	20	10	9	10
Total	47	31	38	28	44	24	21	31

### 3.2. Patient treatment

131 patient (48 female and 83 male) did not do psychotherapy and 133 patient (49 female and 84 male) did psychotherapy.

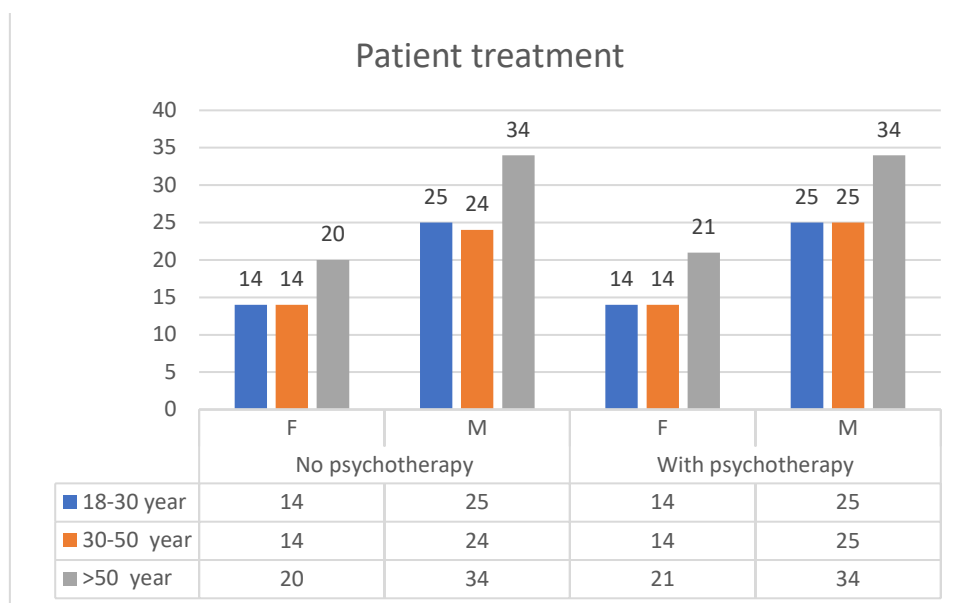


Figure 3. Patient treatment: 131 did not do psychotherapy and 133 did psychotherapy

Average anxiety was moderate in women without psychotherapy (17) and in male patients who did not undergo psychotherapy (18). In patients who underwent psychotherapy, the average anxiety was lower in women (11) and in men (12). Anxiety did not present significant differences between the age groups of the sexes.

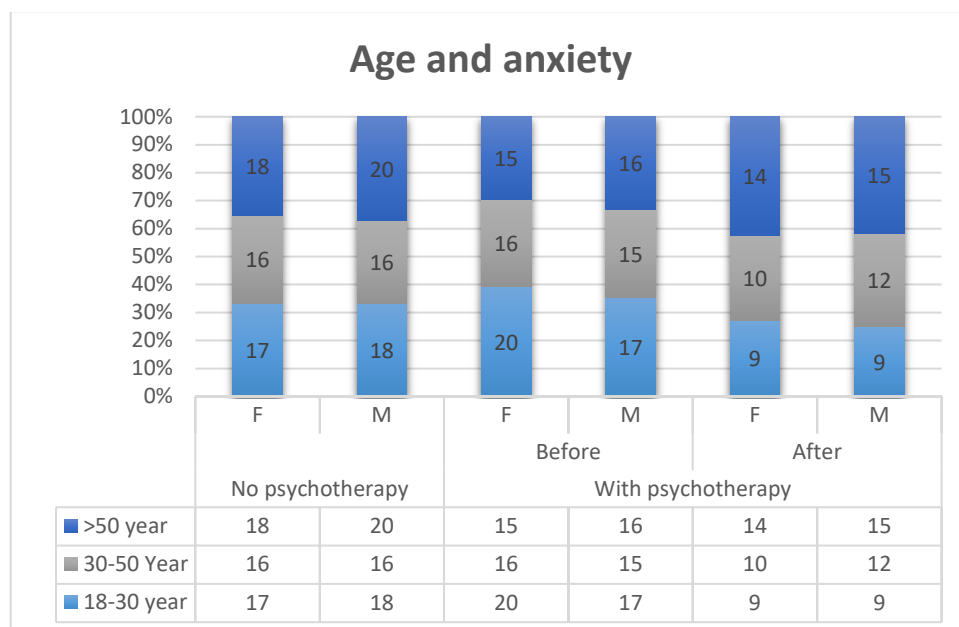
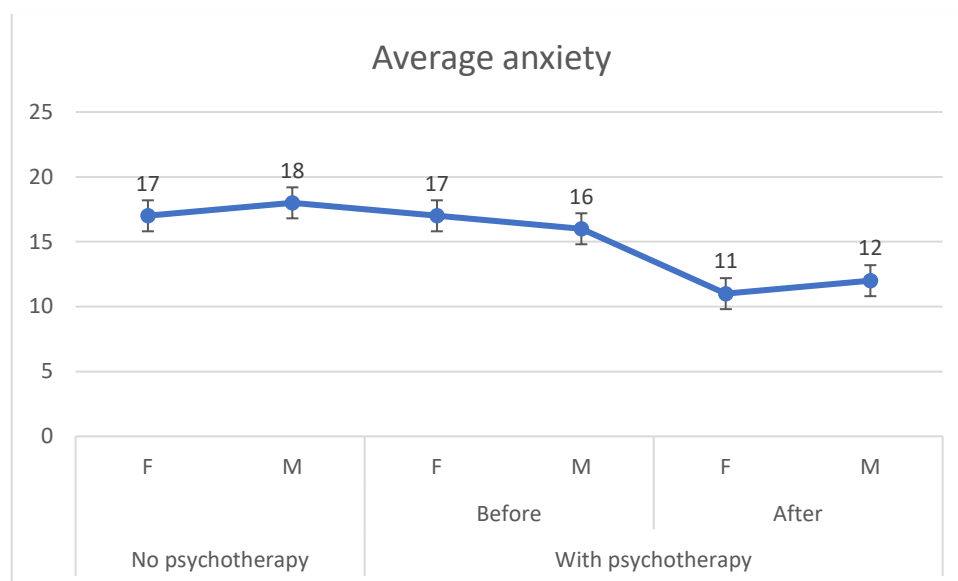


Figure 4. Age and anxiety



**Figure 5.** Average anxiety was lower in women compared to men, showing a decreasing trend after psychotherapy for both sexes

#### 4. Discussion

Our study confirms the fact that men are more frequently victims of spinal cord injury, and the anxiety in the acute phases of the sufferers is very high. For these reasons, it is necessary to supplement the medical treatment with psychological support interventions. In approaching the quality of life hospitalized in the Neurosurgery Clinic 2 for spinal cord injury, we took into account the exhortation of Professor Ioan Bratu Iamandescu, who said that "it is appropriate that doctors, psychologists, sociologists lean more towards an interdisciplinary action since the state of health has as a common feature the substantial participation of the mental state, as well as an increased vulnerability of patients to their action" (Psihosomtica journal, "The 100 stresses that affect the psyche"). Patients with a neurosurgical indication for spinal cord injury have an anxious mindset, presenting an affective, cognitive, and behavioral regression and manifesting: expectations of the consequences of the surgical intervention, in its quality (Leriche) of "act of authority over destiny"; fear of death; fear of infirmity or modification of the body scheme. Coldefy and Onghourlian have identified these "fundamental fears" of the surgical patient and consider that patients facing a major operation show preoperative anxiety (a justified reaction present in any individual with a normal psyche). Considering that patients with SCI have a great vulnerability regarding their physical and psycho-emotional state, I managed to apply DASS 21 with great difficulty (short form of the DASS test) to evaluate the anxiogenic factor before the psychological intervention (psychotherapy, supportive counseling, music therapy), following that later I will evaluate with the same difficulty DSS21 after the psychological intervention, observing the reduction of anxiety. The study had the objective of showing the importance of psychological intervention, reflected in the physical and mental state of TVM patients admitted to the vertebral-medullary neurosurgery department, as well as the discovery of new cognitive mechanisms of adaptation and adaptability in the stage following discharge

#### 5. Conclusions

We studied 264 patients hospitalized in the Neurosurgery Clinic 2 of the "Bagdar Arseni" Hospital for acute spinal cord injuries in the period 2017-2020, mostly coming from the urban environment.

We discovered that anticipatory anxiety after spinal cord injuries is high, especially in male patients. Psychotherapy brings benefits in reducing anxiety for both categories of patients, regardless of the age group they belong to.

The peculiarity of our study consists of discovering a higher anticipatory anxiety among male patients compared to female patients.

## 6. Patients

Our study was carried out with all ethical approvals from the "Bagdasar Arseni" Hospital and with the informed consent of the researched patients.

**Author Contributions:** "Conceptualization, T.I. and P.G.I.; methodology, T.I.; software, S.S.I.; validation, T.I., P.G.I.; formal analysis, T.I.; investigation, T.I.; resources, T.I.; data curation, S.S.I.; writing—original draft preparation, T.I.; writing—review and editing, S.S.I.; visualization, T.I.; supervision, P.G.I.; project administration, T.I. All authors have read and agreed to the published version of the manuscript."

**(5) Informed Consent Statement:** Informed consent was obtained from all subjects involved in the study.

**Data Availability Statement:** Not applicable here.

**Conflicts of Interest:** The authors declare no conflict of interest.

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