

**Comparative Study**

## **A Comparative Study on the Efficiency of Psychological Treatment for Post - traumatic stress disorder (PTSD) in Surgical Patients**

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### **ABSTRACT**

This report presents a comparative analysis of surgical patients who experienced stress and trauma before and after the surgery. Post-traumatic stress disorder is highly prevalent following a major operation; thus, this study is being conducted to see what the impact of psychological treatment is for these patients. There will be two groups: one controlled group in which patients will receive psychological treatment for PTSD, and another independent group in which patients with PTSD will not receive any therapy. This topic was chosen to demonstrate how positive thinking and psychological treatment might help patients before and after surgery. The data will be obtained via a questionnaire composed of 20 items that will include questions on their fear, stress, and health problems before and after surgery. The expectations from this study are that the controlled group will recover faster than the independent group.

**Keywords:** *Post – Traumatic Stress Disorder, Anxiety, Stress, Insomnia*

Post – traumatic disorder is an anxiety disorder that occurs due to any traumatic event witnessed by the person themselves or by any of their family member. Incidents like accident, major operations, death of a family member, getting hospitalised, etc (Hamblen & National Center for PTSD, n.d.). Surgeries are considered to be a traumatic life event as it involves being operated in a hospital, or undergoing a major surgery which can sometimes be life threatening. It is very common in patients and their relatives that they often link hospital to death and illness which often creates trauma in patients, that could restrict them from recovery and further surgery.

Anxiety refers to a future related fear for upcoming events that they negatively associate to their lives (Craske et al., 2011). Undergoing a major surgery like total knee replacement (TKR), total hip replacement (THR), or Anterior cruciate ligament (ACL) induces anxiety in patients as it might affect their mobility. Patients generally fear that these kinds of operations might affect them adversely which creates anxiety. They often think they won't be able to function properly or will be incapable to walk.

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Sleep disturbances often occur in patients who have undergone major surgeries and because of the operation they suffer immense pain and stress. Patients also might have trouble sleeping because of the disturbed environment at the hospital. As a result of these sleep disturbances, patients often develop insomnia. Insomnia is considered as a common sleep disorder that makes it difficult for the patient to fall asleep or stay asleep. Insomnia often affects their mood and quality of life (Insomnia - Symptoms and Causes - Mayo Clinic, 2024).

Common symptoms of post-traumatic stress disorder in patients include nightmares, amnesia, a lack of sleep, irritable conduct, anger, avoidance, negative thoughts, intrusive memories, and so on. There have been reports of people waking up during surgery, which might lead to bad memories and nightmares. Patients frequently exhibit aggression and a lack of sleep as a result of their extreme pain following surgery. Patients may develop an avoidance of hospitals or surgery as they experience great pain and feel helpless when recovering from surgery.

As a result, this study is being conducted to determine the prevalence of post-traumatic stress disorder in patients after surgery. The study will include two groups: one will be a controlled group in which patients will get therapy, and the other will be an independent group in which therapy will not be provided in order to determine the effect of therapy on patients with post-traumatic stress disorder (PTSD). The data will consist of 25 males and 25 females in the controlled group and 25 males and 25 females in independent group.

### **LITERATURE REVIEW**

Systematic research was conducted, revealing how prevalent PTSD is in patients following surgery. According to the study, roughly 20% of people have clinically diagnosed post-traumatic stress disorder following surgery. This study also found that patients generally exhibit PTSD symptoms during the first year after surgery. Post-traumatic stress disorder develops within one month of any traumatic or stressful experience; having surgery is frequently regarded as a stressful event. PTSD symptoms, such as sleep difficulties, flashbacks, avoidance, maladaptive thinking, and so on, are diagnosed using the DSM-5. This study demonstrates how the experience of intraoperative awareness with the prospect of death or significant injury corresponds to traditional discrete event-triggering conceptualizations of PTSD. This paper also argues that pain is a primary trigger for PTSD, especially persistent pain. Acute pain 24 hours after surgery has also been identified as a predictor of clinically significant self-reported PTSD symptoms three months later following lung cancer surgery. According to this study, having a history of pre-operative psychiatric illnesses such as depression, anxiety, and previous PTSD symptoms can put the patient at risk of developing PTSD after surgery (El-Gabalawy et al., 2019).

A recent study conducted in 2022 found that patients' rehabilitation could be impeded by a bad emotional state. This study also demonstrates that a patient's psychological characteristics may have a direct impact on the neuroendocrine and inflammatory pathways that support the surgical stress response, potentially affecting the immunological perioperative state and surgical outcomes. This article demonstrates that the use of psychotherapies improves patients' perioperative perceptions of emotions, cognitions, and behaviours, hence impacting surgical outcomes. These psychological treatments have been shown to be successful in lowering pharmaceutical treatment requirements, hospital length of stay, and perioperative symptoms like pain and anxiety. The authors of the research have

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come to a conclusion that psychological interventions directly result in the reduction in pain and depressive symptoms (Lanini et al., 2022).

### ***Gap in the available literature***

This research report focuses on people who are experiencing pain, physical dysfunction, stiffness, and weariness in their bodies. Pain was the most common complaint among patients, resulting in psychological distress. A study was conducted in which 23 of 44 participants were treated with cognitive behaviour therapy and relaxation therapy, with the help of this paper it was discovered that their hip function and confidence improved significantly at the 12-month follow-up. In this paper, an experiment was conducted to determine how the number of sessions helped the patients. For example, less than six therapy sessions were useless for their rehabilitation, and even more than 14 sessions were also found to be unhelpful. However, a different strategy with 6 to 12 sessions and another with 35 self-directed sessions were found to increase patient-reported results. Hence, this study does not demonstrate the efficacy of psychotherapy in improving patients' health with THR and TKR (Bay et al., 2018).

## **METHODOLOGY**

This study employed a stratified sampling strategy to look at both preoperative and postoperative patients who had anterior cruciate ligament (ACL) reconstruction, total hip replacement (THR), total knee replacement (TKR), cholecystectomy, and other similar surgeries. The approach design involves both qualitative and quantitative data collection to provide a complete picture of the patients' mental health throughout the surgery. The study involves 100 individuals divided into two groups: a control group (25 males and 25 females) and an independent group (25 males and 25 females). Participants are picked from a hospital setting and range in age from 30 to 80 years. Data is obtained through a survey procedure that includes standardised questions and interviews. Two structured questionnaires with 10 closed-ended questions each were created using Google Forms and included multiple-choice answers. The pre-operative questionnaire focuses on their mental patterns, sleep schedules, overthinking about the forthcoming surgery, number of surgeries, questions about their family support, and pain tolerance. The post-operative questionnaire includes questions about their stress levels following surgery, recovery goals, sleep patterns, and negative thinking patterns. Semi-structured interviews were also undertaken to gain a deeper understanding of the patient's overall experience during the surgery. The interview method allows for open-ended responses, resulting in qualitative data on patients' personal experiences, obstacles, and coping strategies. The responses provided to the Google Forms questionnaire are statistically evaluated to reveal common patterns and trends. Each question generates descriptive statistics such as mean, median, and mode. A comparative analysis is used to investigate differences between male and female participants, as well as between age groups. To better understand the postoperative experiences, key themes and patterns were found and categorised. The qualitative data is used to supplement and enrich the quantitative findings, giving a complete picture of the patient's state.

### ***Limitations***

The study is restricted to a single hospital, which may limit the generalizability of the findings. This study primarily focuses on patients who have undergone arthroplasty surgery, making it difficult to generalise to any procedure. The survey may contain answer biases, and the participants' age range (30–85 years) may restrict the findings' relevance to younger

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postoperative patients. Some variables in pre and post operative questionnaire were different according to the surgery and situation.

### **RESULT AND DISCUSSION**

The participants in the study were separated into two groups: a control group, in which patients scheduled for surgery received therapy both before and after the procedure. The conduct was under control because therapy was administered on a daily basis. The second group was independent; the participants were recruited at random from the hospital and did not get any therapy. This was done to compare the independent and control groups and determine how effective psychotherapy is.

#### ***Pre – operation: Independent and Control groups***

Out of 50 independent participants, 36 were worried moderately to extremely, whereas in the control group, 30 out of 50 were worried. It was found that independent participants were more concerned about the procedure than the control group. This data shows that the control group had counselling prior to surgery and was properly advised on the surgery, which has reduced anxiety compared to the independent group patients who did not get any kind of therapy. More sleep difficulties were recorded in the independent group due to nervousness before surgery; however, the control group had fewer sleep problems since they were debriefed prior to surgery, which reduced their anxiety level. It was also shown that, in comparison to the control group, more patients in the independent group (21 out of 50) had never undergone surgery before, which led to increased anxiety and trauma about the approaching procedure. The data further revealed that more patients in the control group had undergone a single or multiple surgeries (31 out of 50), potentially leading to patient's frustration. Out of 50 independent patients, 33 expressed moderate to low pain tolerance, while only 28 of the 50 control patients claimed the same. Pain has a significant impact on the patient's mental health because, a patient who is suffering from any kind of pain is often scared and low on self-esteem as the mind only revolves around the pain. Giving therapy showed how pain tolerance levels improved; out of 50 patients in the control group, 22 had high pain tolerance, but only 17 reported high pain tolerance in the independent group.

As a result, these findings demonstrate that the control group was more mentally healthy and prepared for surgery than the independent group, which had no therapy prior to the procedure.

#### ***Post – operation: Independent and Control groups***

Out of 50 independent patients, 32 experienced moderate to severe stress and anxiety following surgery. In contrast, the control group's anxiety has decreased since before the surgery as a result of frequent counselling. Following surgery, there was also a noticeable reduction in sleep issues, particularly in the control group this is because when the patients had any doubt in their mind about their recovery along with adjusting to the new environment, pain and thoughts; it adversely affects their sleep, but with the help of counselling, the doubt and worry in these patients which reduces with the help of talk therapy and it indirectly helps with their sleep problems. It was also revealed that 33 out of 50 patients in the control group had no adverse emotions about themselves or the procedure. However, only 24 out of 50 independent groups reported zero adverse thoughts. It was discovered that the control group had fewer negative thoughts than the independent group as a result of talk therapy and positive thought patterns. The recurring negative thoughts of not being able to walk, function independently due to the pain and fear in the independent

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participants causes low self-esteem. Positive thought patterns, which were shared with the control group, greatly boosted the patient's self-confidence, sleep improvement, pain management and motivation to walk independently. As a result, this demonstrates that, following patient therapy, the control group answered in a more optimistic and assertive manner than the independent group.

### CONCLUSION

This study finding reveals that psychotherapy is proved to be an effective measure of treatment for post - traumatic stress disorder (PTSD) in surgical patients. In the pre operative study it was reported that independent group indicates higher levels of stress, anxiety, sleep problems and low pain tolerance in comparison to the control group. This encourages that psychotherapy provided to the control group before the surgery helped the patients reduce anxiety and fear regarding the surgery. The post operative findings further evaluated the effectiveness of psychotherapy, this was proved by the data which revealed how the patients in the control group reported low levels of stress, less negative thoughts, more self-confidence compared to the independent group. The positive thought patterns and talk therapy had a great impact on the control group's mental well-being.

In conclusion the independent group displayed more PTSD symptoms like high anxiety, low self-confidence, sleep disturbances and negative thought patterns. This highlights how important and necessary it is to provide psychotherapy to any surgical patients for their speedy physical and mental health recovery. Therefore, with the help of regular psychological care the risk of any PTSD symptoms before or after the surgery will be reduced.

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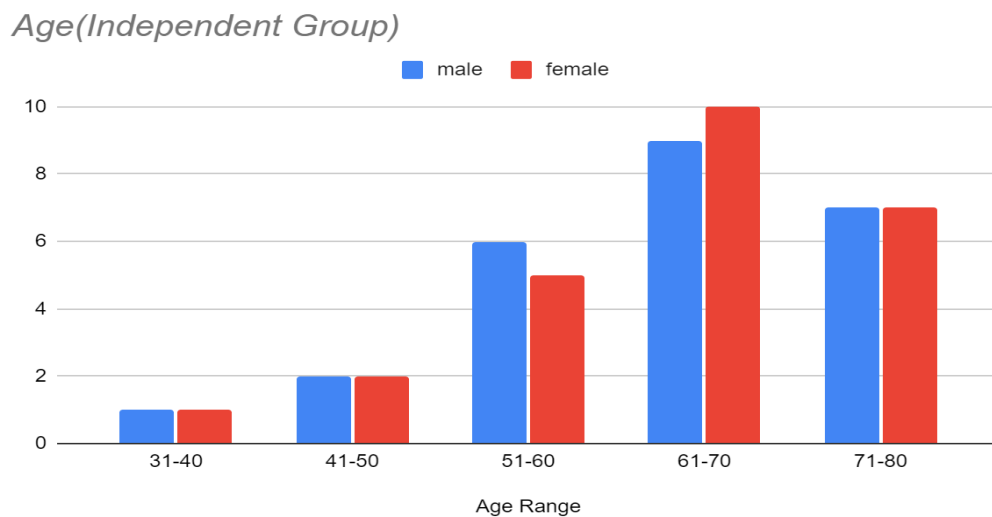
### Conflict of Interest

The author(s) declared no conflict of interest.

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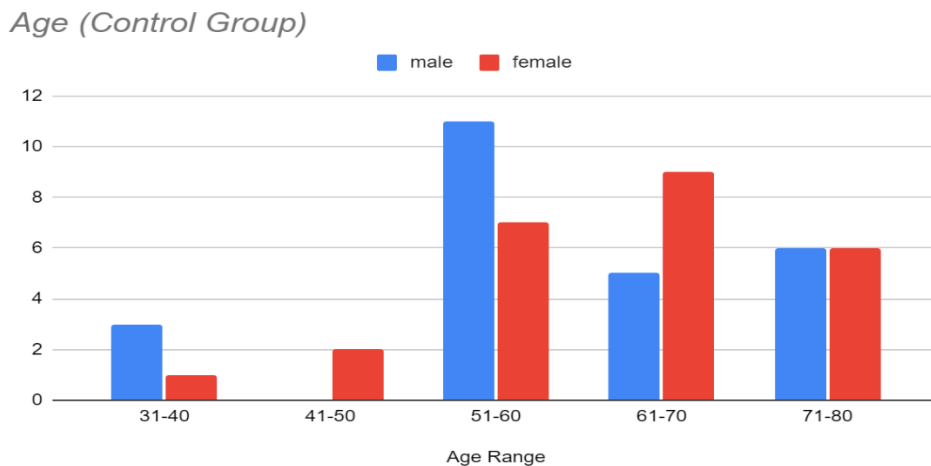
## APPENDIX

**Figure 1**



*Note:* The above graph illustrates the age range of the independent group according to gender.

**Figure 2**

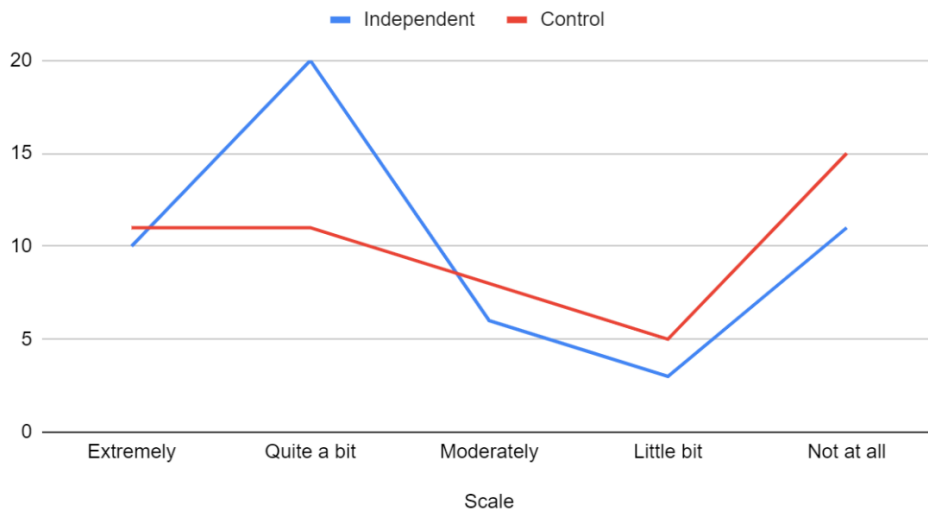


*Note:* The above graph illustrates the age range of the control group according to gender.

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**Figure 3**

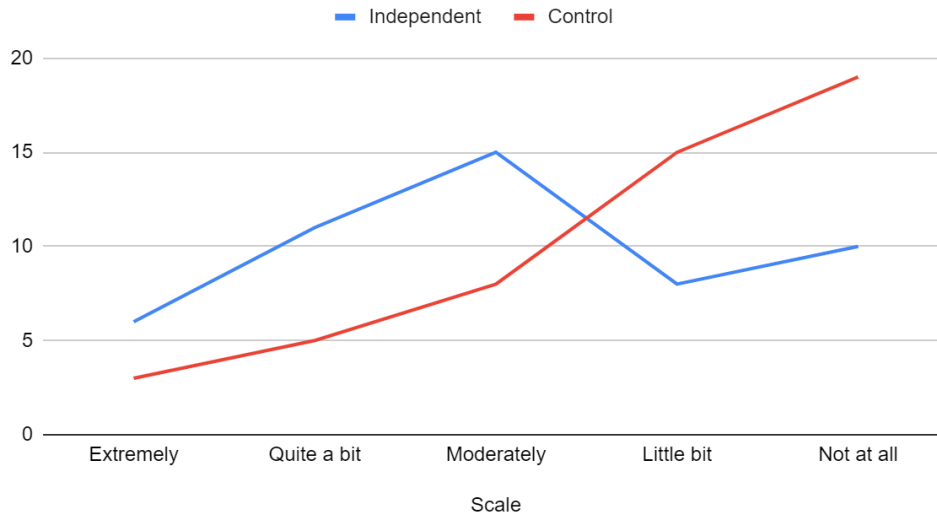
*Worry before surgery*



*Note.* This graph demonstrates the pre-operative data of both independent and control group illustrating the worry before the surgery.

**Figure 4**

*Worry after surgery*

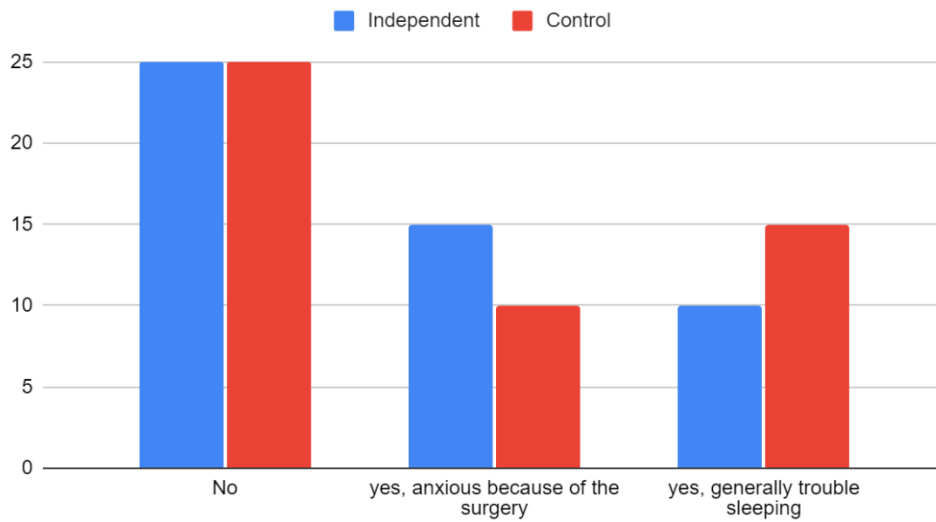


*Note.* This graph demonstrates the post-operative data of both independent and control group illustrating the worry after the surgery.

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**Figure 5**

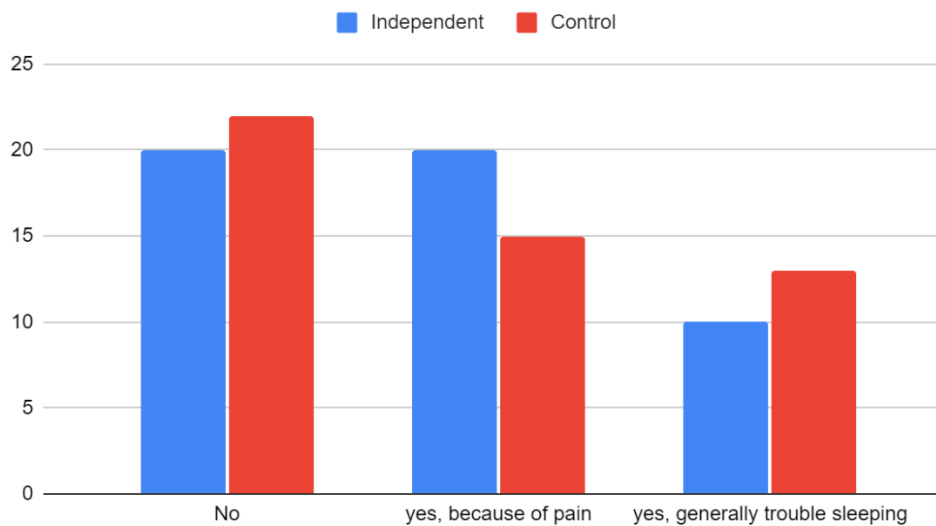
### *Trouble sleeping before the surgery*



*Note.* This graph demonstrates the pre-operative data of both independent and control group illustrating sleep difficulties before surgery.

**Figure 6**

### *Trouble sleeping after the surgery*



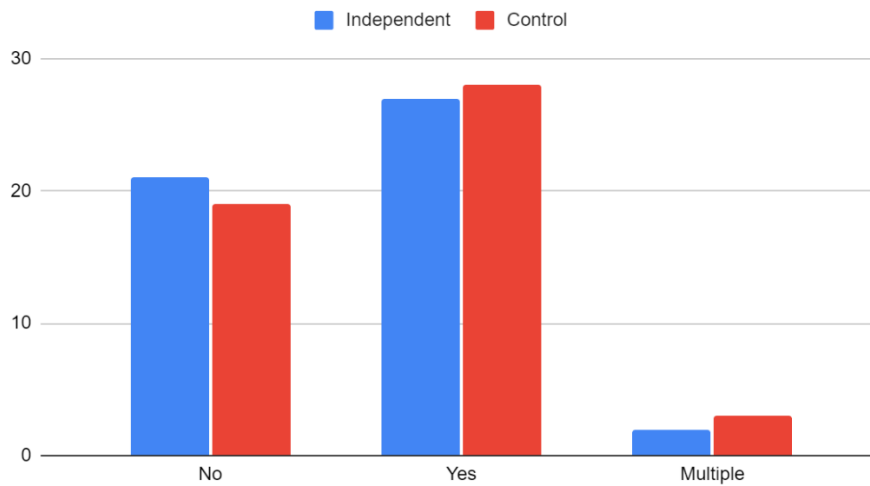
*Note.* This graph demonstrates the post-operative data of both independent and control group illustrating sleep difficulties after surgery.



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**Figure 7**

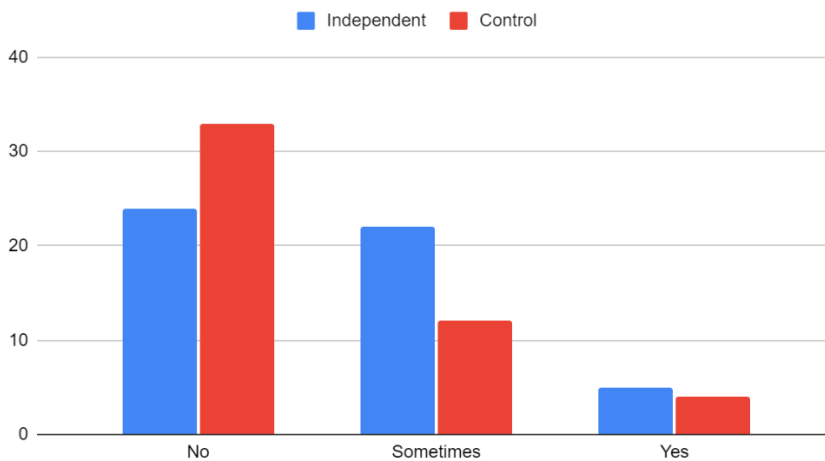
*Other surgeries done before*



*Note.* This graph demonstrates the pre-operative data of both independent and control group illustrating other surgeries done before.

**Figure 8**

*Experiencing negative thoughts*

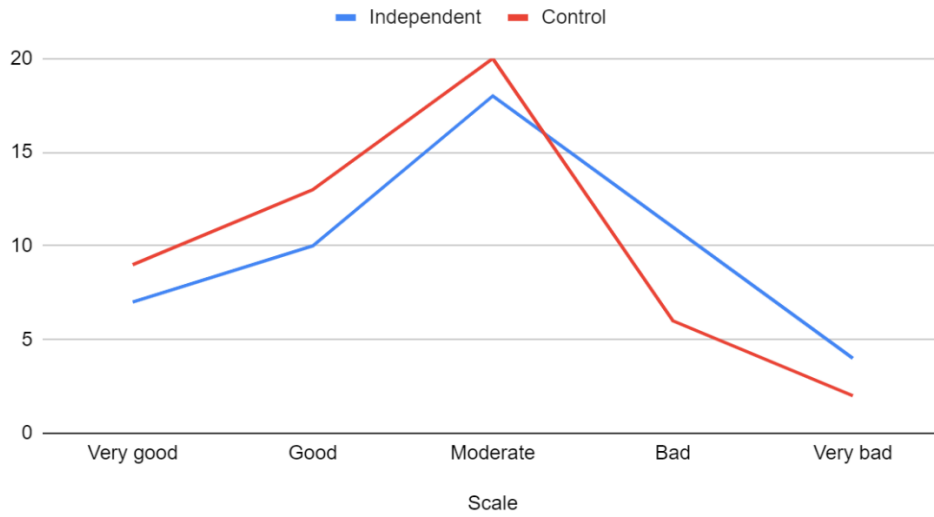


*Note.* This graph demonstrates the post-operative data of both independent and control group illustrating negative thoughts after the surgery.

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**Figure 9**

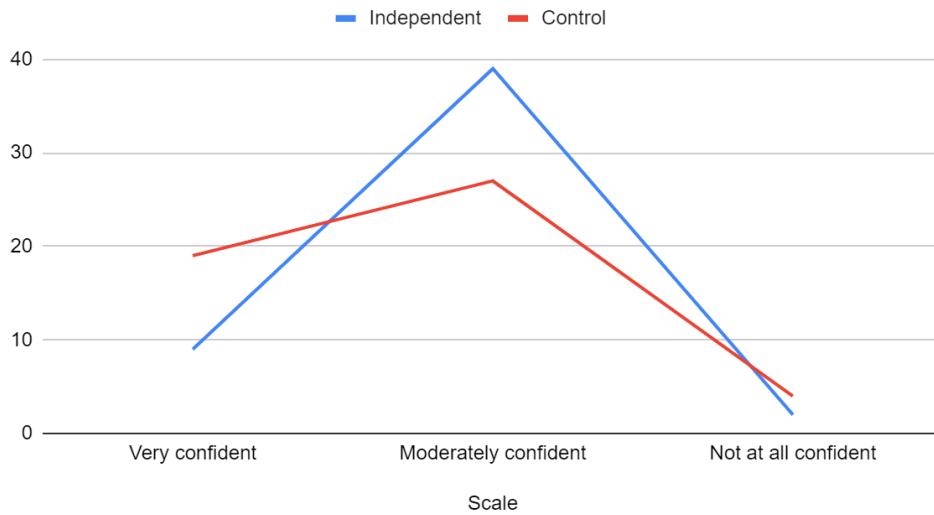
### *Pain tolerance*



*Note.* This graph demonstrates the pre-operative data of both independent and control group illustrating pain tolerance before surgery.

**Figure 10**

### *Confident after the surgery*



*Note.* This graph demonstrates the post-operative data of both independent and control group illustrating confidence after the surgery.