



The Psychological Effects of a Total Knee Arthroplasty: A Single Focus on the Past: A Study in the Past

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Abstract

Background For some time, mental illness has had a significant impact on how total knee arthroplasty results are evaluated. Mental illness diagnoses are associated with higher medical treatment costs, longer recovery times, and hospital stays, in addition to other patient-related factors. This paper compares and contrasts how mental illness and the general population influence surgical outcomes. The experimental group in our hospital's retrospective study, which ran from June 2020 to January 2022, consisted of patients with mental illnesses like schizophrenia, bipolar disorder, depression, and substance abuse. The control group consisted of patients who had total knee arthroplasty but did not have a mental illness. During the study, postoperative complications and length of stay were also recorded. From June 2020 to January 2022, 634 patients underwent total knee arthroplasty at our clinic, 239 of whom had mental illness. As outcome measures, the Knee Society Score (KSS) and the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) were utilized. The majority of patients, 61 percent, were female, and the average length of stay for mental illness patients was significantly longer (6.8 days versus 2.8 days). Preoperative WOMAC and KS function scores (67.83 17.8 versus 62.75 15.7 and 29.31 19.8 versus 34) showed statistically significant differences between the groups. On all postoperative functional scores, the control group performed significantly better than the mental illness group. Lower TKA scores appear to be linked to mental illness before and after surgery.

Keywords: Tka; Osteoarthritis; Psychiatry

Introduction

For patients with severe osteoarthritis, total knee arthroplasty is a common surgical procedure to improve quality of life and reduce pain. Greater gains in mobility and function are reported by total knee arthroplasty patients [1]. Despite this, not every knee function recovery is the same. Comorbidities and patient-related factors are more reliable prognostic factors in total knee arthroplasty than the selected surgical technique and implant type. Poor postoperative outcomes frequently result from factors that are related to the patient [2]. These include being female, being elderly, having a high body mass index (BMI), having previously undergone surgery, and having comorbid conditions like diabetes, kidney disease, and other conditions. For a long time, mental illness has been a big factor in how well a total knee arthroplasty works [3]. Mental illness may also influence the surgeon's choice of implant and the time before surgery for a better psychological and functional outcome. Underdiagnosis of mental health conditions was linked to an increase in complications following total knee arthroplasty [4]. Similar to those with other conditions, people with mental illnesses spend more on medical care, take longer to recover, and spend more time in the hospital. Mortality and morbidity are rising in people with mental illness. Depression before surgery is also linked to less satisfaction after surgery and a longer recovery period. A better postoperative outcome is essential with a careful history of comorbidities and a good selection of patients [5]. However, prior to total knee arthroplasty, many patients are underdiagnosed. The patient's mental health might have an impact on knee function, according to our hypothesis. This paper compares mental health patients' surgical outcomes to those of the general population [6].

Materials and Methods

Between June 2020 and January 2022, our hospital carried out a retrospective study that included patients who were at least 60 years old. There were no interventions or revisions with multiple stages included. Also excluded were patients who died before the last follow-up or for whom there were no medical records available.

In this retrospective study, the same surgeon performed the same surgical procedure on each and every patient—the medial subvastus approach. They began physical therapy simultaneously, either at home or in a specialized clinic, right after surgery.

The experimental group consisted of individuals with mental disorders such as schizophrenia, bipolar disorder, depression, and substance abuse. The control group consists of patients who underwent TKA but did not have a mental illness. Postoperative complications and length of stay were also recorded during the study. Six hundred ninety-nine patients underwent total knee arthroplasty at our clinic, and 25 of them passed away during follow-up. There were no statistically significant age differences between the groups (61.65 8.34 versus 62.35 6.7), and the majority of patients (61%) were women.

Outcome Measures [7-12]

Patients completed an outcome measure two weeks before the surgery and one year later. The Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) and the Knee Society Score (KSS) were utilized as outcome measures. Pain, stiffness, and physical function are the three subscales of the 24-item WOMAC questionnaire. The WOMAC is used to evaluate the pain, stiffness, and function of the operated pelvic limb. The KSS is used to evaluate the knee's function, pain, and range of motion. It is an objective as well as a subjective outcome measurement. A one-dimensional pain scale known as the Visual Analog Scale (VAS) is typically used to assess a patient's

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Received: 01-Oct-2022, Manuscript No: tpctj-22-77783; **Editor assigned:** 08-Oct-2022, Pre-QC No: tpctj-22-77783 (PQ); **Reviewed:** 22-Oct-2022, QC No: tpctj-22-77783; **Revised:** 26-Oct-2022, Manuscript No: tpctj-22-77783 (R); **Published:** 31-Oct-2022, DOI: 10.4172/tpctj.1000166

Citation: Ahasan R (2022) The Psychological Effects of a Total Knee Arthroplasty: A Single Focus on the Past: A Study in the Past. Psych Clin Ther J 4: 166.

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level of discomfort. The relationship between implant positioning and knee function can also be accurately determined using this method.

During the postoperative physical examination, great care is taken to highlight signs of possible prosthesis loosening and infection (swelling, tenderness) while completing KSS. The radiological evaluation was carried out with plain X-rays, which included lateral and anterior-posterior views. These were obtained six weeks, three months, and six months after the surgery. Additionally, we obtained X-rays of the lower limbs that were capable of supporting weight in order to develop preoperative planning. A potential component loosening is evaluated with X-rays and the modified Knee Society radiology assessment.

Surgical Technique [13-15]

The same surgeon performed each patient's surgery using the same medial subvastus approach. We followed the implanting instructions provided by the manufacturer and international guidelines during surgery. Under a laminar flow system, the procedure was carried out with a Zimmer Biomet NexGen LPS implant.

Depending on the patient's age, disease history, and preoperative laboratory tests, spinal or general anesthesia was used. Within the first twenty-four hours after surgery, they received drug prophylaxis against deep vein thrombosis in addition to intravenous antibiotics. The day after their surgery, each patient began their rehabilitation.

Discussion

This study provides evidence to support the hypothesis that patients who have been diagnosed with a mental illness prior to surgery are more likely to experience medical and surgical complications. By 2030, the World Health Organization projects that depressive disorders will be the most pressing medical problem, and this problem is also driving up the annual rate of total knee replacements.

According to numerous studies, patients who had psychiatric disorders prior to total knee arthroplasty are more likely to have worse functional outcomes.

As ours and other studies have demonstrated, postoperative mental illness and outcomes are significantly correlated. Mental health patients spend more time in the hospital, according to numerous studies. Mentally ill patients typically require more adjustment from recovery programs. They have limited mobility, require more time to recover, are more dependent on family, and mobilize more slowly. We observed a significantly longer length of stay in relation to these criteria than the control group (0.05), which we believe is in line with other research.

Patients with mental illnesses had lower WOMAC scores, KS knee scores, and function scores before and after surgery than the control group, which is an additional clinically relevant contribution of our paper. These results are in line with those of other studies that show the same results. Pain perception may be linked to more than just changes in osteoarthritis because mental health patients appear to believe they are in a worse clinical and functional state.

Even though the mental illness group performed worse than the control group, it made significant statistical progress. Because the level of pain can significantly contribute to depression, some authors even suggested that these functional improvements may benefit patients' mental health.

It is common knowledge that mental illnesses have an effect on cognitive functions, raise mortality rates, make hospital stays longer, and raise the likelihood of serious complications. It has been discovered

that delirium following a total knee arthroplasty not only reduces the amount of functional rehabilitation that can be performed, but also raises costs and lengthens hospital stays. In addition, it causes issues within the first year following surgery. The numerous complications that occur during total knee arthroplasty may provide an explanation for the extremely high costs associated with treating psychiatric patients. Patients with severe mental illnesses are more likely to experience these complications than the general population, and the prevalence of periprosthetic joint infections was significantly higher in our study than in the control group ($p < 0.05$).

Due to a periprosthetic fracture, six patients required readmission, four of whom had been diagnosed with mental illness. Mental illness might also be involved in this. The connection between injury susceptibility and underlying mental illness is supported by a number of additional papers in the literature. A study by Jørgensen et al. says, Psychiatric disorders raise the risk of pulmonary complications and postoperative anemia, both of which can prolong hospitalization, as well as a risk factor for readmission following falls following TKA and THA.

When interpreting those findings, it is necessary to draw attention to a few of the limitations of this article. First, the patients included are not typical of our nation's general population. In those instances, only one medical facility performed the surgeries. Second, in order to fully assess the risk of local complications and evaluate functional results, a longer patient assessment and a larger cohort may be required. In addition, medical postoperative complications, which may influence postoperative outcomes in some instances, were not included in this paper. Thirdly, because this is a retrospective study, there is only one point of data for each case's functional scores before and after surgery. As a result, we were unable to fully monitor the progress. All of these limitations could be addressed in the future by a large prospective study involving multiple centers.

Conclusions

We have shown that patients with mental illnesses spend more time in the hospital, experience more complications, and return to the hospital more frequently than patients in the control group. In order to identify patients who are experiencing worse mental states, it is suggested that a comprehensive mental status assessment be performed during the initial consultation. Patients undergoing total knee arthroplasty who have a history of mental illness should first see a psychiatrist for help with their symptoms. It is more likely that these patients will be discharged much later than usual. In conclusion, lower scores prior to and following TKA appear to be linked to mental illness.

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