

Frequency of Knee Stiffness in Patients Undergoing TKR in Ghurki Trust Teaching Hospital

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ABSTRACT

Aim: To analyze the effects of knee exercises for functional outcome of patients after total knee replacement

Subject: A sample of 50 patients were taken from Aug 1, 2012 to January 28, 2013. The history of exercise performed at home and their effects on knee range of motion were taken through a structured questionnaire.

Methodology: A cross sectional survey was done. Participants of the study were of both gender and age between 20-80 years, undergone TKR. History of patients taken and a questionnaire Performa was filled. The questionnaire was administered through interview method. Data was collected through interview by the patients who reported after two weeks for follow up in the department.

Results: 70 questionnaires were filled by patients undergone total knee replacement (TKR). Out of which 50 were found reliable to be included in the research. 22 (44%) of them were male and remaining 28(36.6%) were female. Most of people had mild pain (34%). Data revealed that patients who performed exercises were (74%). Patients who performed exercises lied more in mild to moderate pain intensity. But the patients who did not perform exercises were lied more in severe pain intensity area. Data revealed that 37 (74%) patients performed exercises and out of which 6 patients bended their knees below 90 degrees (knee stiffness) and 31 patients bended their knees above 90 degrees. Patients not performed exercises were 13 and all of them couldn't bended their knees. 46 (92%) patients had knee pain in operated knee and 4(8%) had no pain at all.

Conclusion: Frequency of knee stiffness is less in patients who were performing knee exercises (knee bending) regularly after removal of stitches. Physiotherapy rehabilitation protocols are very important in patient's undergone TKR procedure in making them functional.

Key words: TKR (total knee replacement), knee stiffness, goniometry.

INTRODUCTION

Knee pain is a common complaint that affects people of all ages. Knee pain may be the result of an injury, such as a ruptured ligament or torn cartilage. Medical conditions, including arthritis, gout and infections, also can cause knee pain. The reported frequency varies widely; knee pain on the whole is a very common condition and frequent problem presenting to general practitioners. The incidence increases steadily with age. Furthermore, the severity of the pain increases with age and a greater percentage have pain associated with disability. Even in today's world of technology, physicians rely on a detailed history and examination more than any single test.

Physical examination: The doctor will likely have you disrobe to completely expose the knee. The doctor will then inspect the knee and press around the knee to see exactly where it is tender. In addition,

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the doctor may perform a number of maneuvers to stress the ligaments, tendons, and menisci of the knee and evaluate the integrity of each of these. An experienced health care professional will be able to make a preliminary diagnosis based on this examination. These maneuvers can establish potential tendon, ligament, or meniscus injuries.

- **X-rays and CT scans**

- **MRI**

- **Fluid removal**

- The knee and all bursae of the knee are filled with fluid. If your symptoms suggest infection, inflammation, or certain types of arthritis your physician may use a needle to remove fluid from the knee.

- **Blood tests:** The doctor may also elect to perform certain blood tests to evaluate for signs of infection or diseases such as rheumatoid arthritis and diabetes.

Arthroscopy

- The orthopedic surgeon may elect to perform arthroscopy if you have chronic knee pain.

- This is a surgical procedure where the doctor will place a fiber optic camera within the knee joint itself.

Red flags: Warning signs and symptoms indicating an increased likelihood of serious KNEE pathology

- You have pain when putting any weight on the knee.
- Your knee is swollen or obviously deformed.
- There is redness on or around the knee.
- You have a fever along with redness, warmth, or swelling of the knee

Indications for Surgery

The following are common indications for TKA.

- Severe joint pain with weight bearing or motion that compromises functional abilities.
- Extensive destruction of articular cartilage of the knee secondary to advanced arthritis.
- Marked deformity of the knee such as genu varum or Valgum.
- Gross instability or limitation of motion.

METHODOLOGY

The simple purpose of the design is to solve the problem and is used for the development of a non-experimental strategy for obtaining empirical data that will answer our question. Direct personal method was used in this study; the researcher approached the patients and interviewed them. The research design constitute a blue print for the collection, view observations, they analysis of records stimulations or combinations of these. The principle purpose of the research design is the development of descriptive strategy for obtaining the empirical data that will

answer the question. This is not true experimental design because treatments are assigned to the experimental units. A cross sectional survey was done. Participants of the study are of both gender and any age having established diagnosis of chronic low back pain. History of workers was taken and a questionnaire Performa was filled.

RESULTS

70 questionnaires were filled by patients undergone total knee replacement (TKR). Out of which 50 were found reliable to be included in the research. 22 (44%) of them were male and remaining 28(36.6%) were female.

Most of people had mild pain (34%). Data revealed that patients who performed exercises were (74%). Patients who performed exercises lied more in mild to moderate pain intensity. But the patients who did not perform exercises were laid more in severe pain intensity area. Data revealed that 37 (74%) patients performed exercises and out of which 6 patients bended their knees below 90 degrees (knee stiffness) and 31 patients bended their knees above 90 degrees. Patients not performed exercises were 13 and all of them couldn't bended their knees.46 (92%) patients had knee pain in operated knee and 4(8%) had no pain at all. Knee pain in males fall more in mild and moderate intensity whereas in females it fall more in mild and severe intensity level. Percentage of females with mild intensity is considerable. 74% of the patients follow exercise plan and bend their knee and have mild pain in knee.

	Study sample	The intensity of knee pain					No pain
		Unbearable	Severe	Moderate	Mild	Discomfort	
Male	22(44%)	3(13.6%)	3(13.6%)	6(27%)	8(36%)	2(9%)	0
Female	28(36.6%)	0	6(21.4%)	4(14%)	9(32%)	5(17.8%)	4(14%)
Exercise follow							
Yes	37(74%)	0	02(5.4%)	7(18.9%)	17(34.9%)	7(18.9%)	4(10.8%)
No	13(26%)	3(23%)	7(53.8%)	3(23%)	0	0	0

Exercise plan follow and bend the knee * pain in operated knee Crosstabulation

exercise plan follow and bend the knee	Pain in operated knee		Total
	Yes	No	
Yes	33	4	37
No	13	0	13
Total	46	4	50

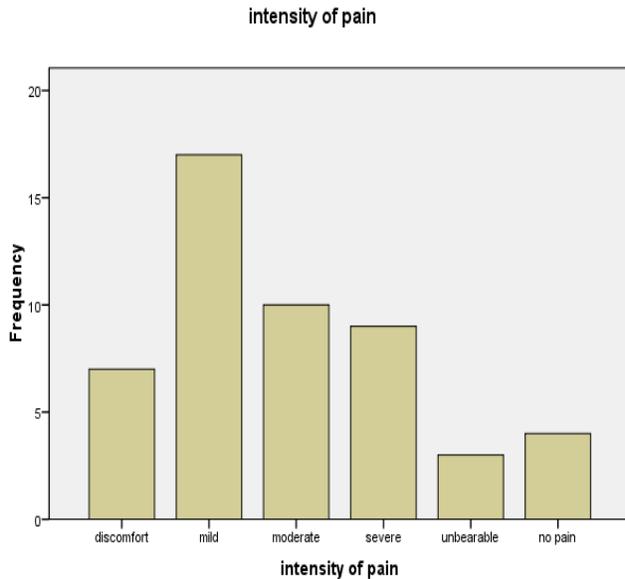
P = .049
Data show no relation between the two variables

ROM achieved at operated knee * exercise plan follow and bend the knee Cross tabulation

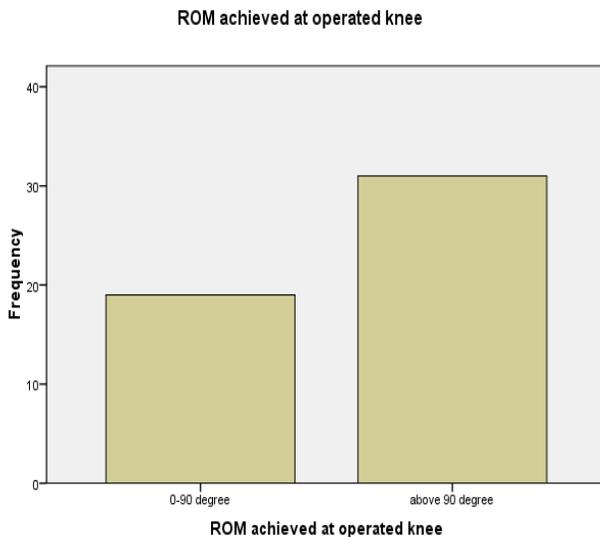
ROM achieved at operated knee	exercise plan follow and bend the knee		Total
	Yes	No	
0-90 degree	6	13	19
above 90 degree	31	0	31
Total	37	13	50

P= .082

Data show strong association between the two variables



The above graph shows that the intensity of pain is greater than 15 percent and that is mild.



The above Graph shows that the ROM achieved at operated knee is greater than 90 degree.

CONCLUSION

According to the results it is concluded that frequency of knee stiffness is less in patients who were performing knee exercises (knee bending) regularly after removal of stitches. Physiotherapy rehabilitation

protocols are very important in patient's undergone TKR procedure in making them functional.

DISCUSSION

We found that patients performing exercises regularly have better pain relief, less stiffness and better function. Because restricted knee ROM affects functional activities, knee ROM and knee function are regarded as the primary indicators of successful TKA. Potential effects of the intervention under study include rapid return of knee flexion accompanied by earlier return to functional activities of daily life. There were no adverse effects reported by subjects in either group. This suggests that performing knee exercises post TKR was safe as previous studies are done in conservative management. There was significant improvement in pain in both the groups (one performing knee exercises other not). This can be attributed to the surgical procedure that is removal of pain producing structures, ligamentous balancing to correct the deformity and by reducing the stresses on the periarticular structures. Additionally they also received gait training, isometric exercises, open kinetic chain exercises and stretching as treatment to reduce pain, and improve function. Isometric exercises promote muscle relaxation and increase in circulation to wash out the chemical irritants. As strength training requires higher force progressively, there is increased synchronization and improvement in the rate of motor unit firing. This leads to decrease in the inhibitory function of the central nervous system; hence, muscle strength increases. Increase in muscle strength may have contributed in improving the overall functional status of the patient. In exercise plan, the pain relief was better than other conventional therapy group.

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