

“A Study to Assess the Effectiveness of Information on Knowledge regarding Urinary Tract Infection and its Prevention among Post TKR patients in Apollo Speciality Hospitals, Jayanagar, Bengaluru”.

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Abstract:

Arthroplasty surgery is always bothered to joint infection. Urinary tract infection (UTI) is a key factor to be a silent problem causing haematogenous spread of infection. We wanted to conduct a focused study to reveal this fact and the measures that can be taken to lower the rate of such infections. We assessed the records of 150 patients who went through arthroplasty procedures in our hospital in the past 10 months. We checked for UTI history, treatment history and any joint infections. We also checked to peri operative catheterization history and epidural anaesthesia history. 12 out of the 40 patients (30 %) who were catheterized had a post-operative UTI while 2 of them (5%) also got a post-operative wound infection. On the other hand, only 1 out of the 110 (< 1%) non catheterized patients got post-operative UTI and none of them had any post-operative wound infection (0%). Patients with epidural anaesthesia had a higher UTI (34%) and wound infection rate (7%) as compared to the rest (2.4 % and none). There is a definite correlation between UTI and post op wound infection, Peri operative catheterization leads to higher UTI and wound infection and so does epidural catheterization. Pre op patients treated adequately with an antibiotic regimen fair almost as well as non UTI patients. **Materials and Methods:** A Pre-Experimental one group pre-test and post-test design was used to assess the Knowledge regarding Urinary Tract Infection and its Prevention of 50 patients on Post Total Knee Replacement. A structured questionnaire was develop to assess to assess the knowledge of UTI among patients. The study started with the pre-test followed by structured information program and post-test. **Result:** Post test showed significant improvement in the knowledge regarding Urinary Tract Infection and its prevention in Post Total Knee Replacement patients In the pre-test 13 patients had good knowledge and 37 patients had average level of knowledge The post test revealed that 41 patients had very good knowledge and 09 had good level of knowledge Paired t-test value of knowledge and practice was 10.4 and 18.6 respectively, which is higher than the table value 2.72* at <0.05 hence the structured teaching programme was found to be effective in improving the knowledge on Urinary Tract Infection and its prevention of the patients. **Conclusion:** Post Total Knee Replacement patients acquired knowledge on Urinary Tract Infection and its prevention and have an improvement in the hydration, mobilization and bedside exercise to prevent other complication.

Key words: Structured Teaching material, TKA, TKR, UTI, Prosthetic joint infection, Joint arthroplasty

I. Introduction:

Prosthetic joint infection (PJI) is the most intractable complication after joint arthroplasty that leads to an unnecessarily prolonged hospital stay and high costs.¹ Moreover, PJIs are associated with a mortality rate as high as 2.5%.² Although the incidence of PJI ranges from 0.29% to 1.8%,^{1,3, 4, 5, 6} the annual volume of joint replacement surgical procedures is high. An estimated 5.2 million total knee replacements were performed from 2000 through 2010 in the United States.⁷ The volume of joint replacement surgical procedures

has increased because of the growing elderly population,⁸ with projections of greater than 4 million by 2030 in the United States.⁹ Thus, as the volume of joint replacement surgery increases, so may the incidence of PJI. Recognizing the factors of PJI and taking effective preventive measures are of paramount importance. Microorganisms for PJI originating from the genitourinary tract that harbours bacteria was reported in the 1970s.¹⁰ Therefore, urinary tract infection (UTI) has been considered as a possible source of PJI. Several investigators reported that patients with a UTI had a high risk of PJI after total hip arthroplasty (THA) and total knee arthroplasty (TKA). However, others demonstrated no association between PJI and UTI. UTI as a risk factor of PJI remains controversial.

II. Material and Methods:

Study Design: Pre-experimental, one group pre-test and post-test design. And study conducted at Apollo Speciality Hospitals, Jayanagar, Bangalore from 12-01-2025 to 15-06-2025. Study conducted for 50 Post Total Knee Replacement patients. The sample size was collected from the hospital inpatients among who are all underwent Total Knee Replacement and interested in the study. And subjects and selection method: Non-Probability Sampling pre- test and post-test method was applied to select the research material. **Inclusion Criteria-** Post-Operative Total Knee Replacement patients were included in the study: those who are Able to read, write and understand English. Admitted in the Apollo Speciality Hospital, Jayanagar, Bangalore. Post Total Knee Replacement patients. **Exclusion Criteria** Not willing to participate in the study Not available at the time of data collection. Post Total Knee Replacement patients having any medical discomfort or any complication. Patient age above 75 years

Procedure methodology:

A structured questionnaire used to collect data regarding patient's knowledge on Urinary Tract Infection among Post Total Knee Replacement patients. The questionnaire consists of self-declaration for study, Urinary System and Type of surgery. A multiple-choice questionnaire used to assess the knowledge. It consists of 10 questions in which each question carries 1 mark. Handwritten check list questions were given to patients. Questions includes the parameter such as Knowledge on Urinary Tract Infection, prevention of Urinary Tract Infection, Dehydration, Total Knee Joint, Osteoarthritis and Surgery. A randomly selected 50 patients under inclusion criteria had done the pre-test for assessing knowledge and its prevention. A structured Teaching Programme conducted for patients in regards to improve their knowledge on Urinary Tract Infection and its prevention on Post Total Knee Replacement patients. Post-test given to the patients to assess knowledge on Urinary Tract Infection and its prevention on Post Total Knee Replacement had conducted using same questionnaire checklist on the same patients on the same day.

III. Result

After successfully giving information to the patients who participated in the study, their knowledge level on Urinary Tract infection and its prevention has improved by showing difference in the parameters, which is statistically significant. Their knowledge has been improved which is evident in post-test with significant difference in the parameters. Table 1 shows demographic variables with percentage distribution according to (1) Gender, 15 (30%) of them were Male, 35(70%) of them were Female. (2) Age in years, 20 (40%) patients were 41-60 years of age and 30 (60%) patients were 61-74 years of age. In regard to the (3) Religion- 28 (56%) were Hindu, 9(18%) were Muslims, 13 (26%) were Christians. (4) Education - 5 (10%) patients were completed PUC, 24 (48%) patients were completed Undergraduate, 20 (40%) patients were completed the Post-graduation and 1 (2%) patient were completed the PhD. (5) In regard to the Occupation- 10 (20%) patients were doing Govt job, 25(50%) patients were doing Private Job, 15(30%) were doing Business.

Table1 - Demographic variables with percentage distribution

Sl No	Variables	f	%
1	Gender		
	Male	15	30
	Female	35	70
2	Age In Years		
	41-60 years	20	40
	61-74 years	30	60
3	Religion		
	Hindu	28	56
	Muslim	9	18
	Christian	13	26
4	Education		
	PUC	5	10
	Undergraduate	24	48
	Post-graduate	20	40
	PhD	1	2
5	Occupation		
	Govt Job	10	20
	Private Job	25	50
	Business	15	30

Table no 2 shows the knowledge level regarding Urinary Tract Infection and its prevention among Post Total Knee Replacement patients. In the pre-test 37 (74%) patients had average level of knowledge and 13(26%) had Good knowledge. Whereas, in post-test 41(82%) patients had Very Good knowledge and 09(18%) had good level.

Table 2-The level of knowledge in Pretest and Posttest

Level of Knowledge	Very Good		Good		Average	
	Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)
Pre-test	0	0	13	26%	37	74%
Post-test	41	82%	09	18%	0	0

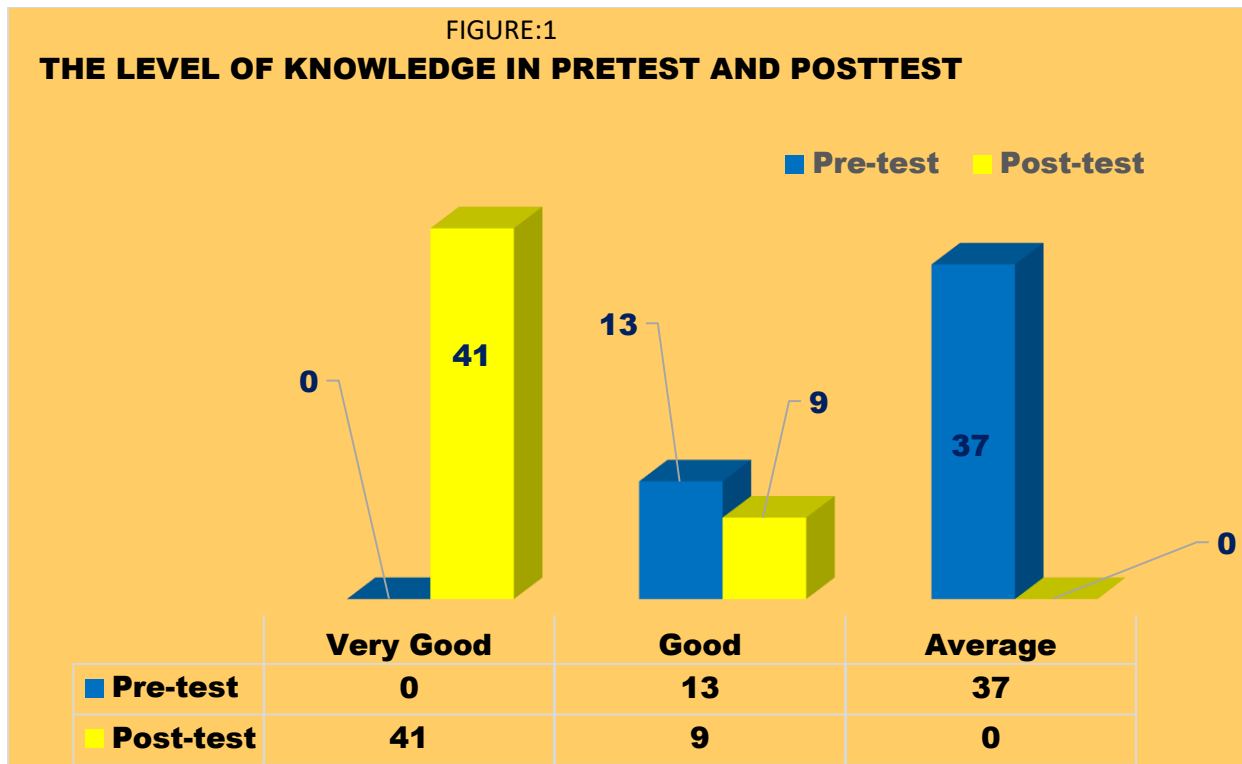


Table no 3 shows Paired t-test value of knowledge on UTI was 10.4 and 18.6 respectively, which was higher than the table value 0.699 at $p < 0.05$ hence the structured teaching program was found to be effective in improving the knowledge on Urinary Tract Infection among post Total Knee Replacement patients.

Knowledge Score	Max score	TKR Patients			Paired 't' test
		Mean $\bar{x}$	Mean Percentage $\bar{x}(\%)$	SD(σ)	
Pre-test	10	5.43	19.84	2.84	2.84
Post-test	10	8.9	29.94	1.20	
Enhancement	10	1.87	7.45		

IV. Discussion

This chapter deals with discussion, based on the formulated objectives of the study and hypothesis. The study was design to assess the effectiveness of Structured Teaching Programme on knowledge on Urinary Tract Infection and its prevention among post Total Knee Replacement patients among patients in Apollo Speciality hospitals, Jayanagar, Bangalore. Eighty-two percent participants thought that they had adequate knowledge regarding Urinary Tract Infection and its prevention after Total Knee Replacement, but most of them were not adhering to education. There is a need of continued education. We believe that the introduction of standardized routines and education, combined with an exchange of the existing paper-based referral management system with an electronic system for managing referrals, could increase the knowledge and its prevention, with positive effects on patient knowledge. Given the importance of adequate hydration and not to control bladder for more time in a patient care, a more extensive study covering other hospital wards and primary health-care centres is needed. Most evidence point to the safety and feasibility of conservative treatment (clinical follow-up) of retention of urine, frequency of urination, pain tolerance in osteoarthritis in knee joint. However, in cardiac and Renal risk of patients and those with water restriction, a prophylactic treatment and education is recommended. To establish these recommendations, more studies with better levels of evidence must be conducted.

V. Conclusion

The study concluded that a significant knowledge gap existed among inpatients regarding the differentiation of Urinary Tract Infection (UTI), dehydration, cardiac and kidney-related problems, osteoarthritis, and age-related health changes. Following the implementation of a structured teaching programme, patients demonstrated improved understanding of these conditions and their distinguishing features. The educational intervention effectively reduced misconceptions, knowledge deficits, and miscommunication, thereby enhancing patients' awareness and ability to recognize health-related symptoms appropriately. Overall, the structured teaching programme proved to be an effective strategy for improving patient knowledge and promoting better health understanding.

ACKNOWLEDGMENTS

First and foremost, praises and thanks to the God, the Almighty, for His showers of blessings throughout my research work to complete the research successfully. We are grateful to all the subjects who participated in the study with all their time constraint. I would like to express my deep and sincere gratitude to my Unit Head & Vice President Dr. Govindaiah Yatheesh, Apollo Speciality Hospitals Jayanagar, Bangalore. I would like to express my special gratitude and thanks to Dr. Capt. Usha Banerjee, Group Director Nursing, Apollo Hospitals, for being a good mentor and for guiding us on the right path. I would like to express my special appreciation to Ms. Sheeja Joseph, Senior Nursing Manager, Apollo Speciality Hospitals Jayanagar, Bangalore. I would like to express my heartfelt gratitude Ms. Maryline Flinsi Principal ASON Delhi & Ms. Rohini Sharma Vice principal ASON Delhi for their endless support in guidance and approving the Research study.

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