EFFECTIVENESS OF VIDEO ASSISTED TEACHING MODULE ON KNOWLEDGE, ATTITUDE AND PRACTICE AMONG THE PATIENTS UNDERGOING TOTAL KNEE REPLACEMENT.

By

T.Mugeshwari

A DISSERTATION SUBMITTED TO THE TAMILNADU DR.M.G.R. MEDICAL UNIVERSITY, CHENNAI, IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR DEGREE OF MASTER OF SCIENCE IN NURSING

MARCH 2011
EFFECTIVENESS OF VIDEO-ASSISTED TEACHING MODULE ON KNOWLEDGE, ATTITUDE AND PRACTICE AMONG THE PATIENTS UNDERGOING TOTAL KNEE REPLACEMENT

Approved by the dissertation committee on: __________________________

Research Guide: __________________________

Prof. S. Ani Grace Kalaimathi
M.Sc. (N), PGDNA, DQA, Ph.D
Principal,
MIOT College Of Nursing,
Chennai.

Nurse Guide: ______________________________

Prof. N. Jayasri M.Sc. (N), M.Phil
Ph.D
Vice principal,
HOD, Medical Surgical Nursing,
MIOT College Of Nursing,
Chennai.

Medical Guide: ______________________________

Dr. Ram Prasad
DNB (ortho) D.ortho.
Senior consultant orthopedic surgeon,
MIOT Hospitals,
Chennai.

A DISSERTATION SUBMITTED TO THE TAMILNADU DR.M.G.R.
MEDICAL UNIVERSITY, CHENNAI, IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR DEGREE OF MASTER OF SCIENCE IN NURSING

MARCH 2011
DECLARATION

I hereby declare that the present dissertation entitled “EFFECTIVENESS OF VIDEO-ASSISTED TEACHING MODULE ON KNOWLEDGE, ATTITUDE AND PRACTICE AMONG THE PATIENTS UNDERGOING TOTAL KNEE REPLACEMENT” is the outcome of the original research work carried out by me under the guidance of Prof. S. Ani Grace kalaimathi M.Sc.(N), PGDNA,DQA, Ph.D, Principal and Prof. N. Jayasri M.Sc.(N), M.Phil, Ph.D, Vice principal, HOD, Medical surgical nursing, MIOT college of nursing, Chennai. I also declare that the material of this has not been formed in anyway, the basis for the award of any degree or diploma in this university or other universities.

Mugeshwari.T

II Year M.SC. (N)
ACKNOWLEDGEMENT

I wish to acknowledge my heartfelt thanks to the Almighty who pours his blessings and physical strength for me to complete this dissertation in a successful way.

I wish to acknowledge my whole hearted gratitude to the Managing trustee of MIOT Educational Institutions for permitting me to conduct this study.

I express my sincere and heartfelt gratitude to Prof.(Mrs).S. AniGrace Kalaimathi M.Sc.(N) PGDNA, DQA, Ph.D., Principal, MIOT College of Nursing for her valuable guidance, suggestions, constant motivation and support that enabled me to complete the dissertation successfully.

I am highly indebted to Prof. (Mrs).N.Jayasri M.Sc.(N) M.phil, Ph.D, Vice principal, MIOT College of Nursing for her valuable guidance, suggestions, patience, constant support and motivation for me throughout this dissertation.

I am grateful to thank Dr. Ramprasad DNB (ortho), D.Ortho, Senior Consultant, Orthopedic Surgeon, MIOT Hospitals, Chennai for his excellent guidance that helped me to finish this dissertation in a successful way.

I express my genuine thanks to Dr.Barry D Rosario Director, Department of Knee Replacement and Computer Navigation, MIOT Hospitals, Chennai for his guidance throughout my study.

I am greatly indebted to Prof. Dr.A. Amalraj, Msc, Ph.D., Bio statistician for his guidance and help in statistical analysis.

I express my sincere thanks to Mrs.Kavitha M.Sc. (N), Lecturer, MIOT College of Nursing for her guidance in every step of this study.

I express my special thanks to Miss.Kanimozhi M.Sc.(N), Lecturer MIOT College of Nursing for her valuable suggestions and support.
I express my thanks to all the faculties of MIOT College of Nursing for their motivation and support.

I express my special thanks to Mrs.Bhuvaneswari, M.Lis, Librarian, MIOT College of Nursing who helped me throughout this study.

I thank all the staff nurses and physiotherapists of C1 and C2 wards of MIOT Hospitals for their help during my study.

I wish to thank my parents Mr.Thayalan and Mrs.Bhuvaneswari for their constant support and motivation. I express my heart felt thanks to my beloved brothers Mr.T.Priyanathan BE., and Mr.T.Dharmaseelan BE., for their constant support, encouragement and motivation that enabled me to complete this study.

With my deep gratitude, I acknowledge my friends and classmates for their concern and contribution.
ABSTRACT

A study to assess the effectiveness of Video Assisted Teaching Module on Knowledge, Attitude and Practice among the patients undergoing Total Knee Replacement at MIOT Hospitals, Chennai.

The conceptual framework was developed on the basis of Orem’s General theory of nursing model. An experimental research approach with pre-experimental one group pre-test post-test design was used to achieve the objectives of the study. The present study was conducted at MIOT hospitals, Chennai, with a sample size of 45 patients. They were selected through non-probability convenient sampling technique. The investigator used a demographic variable proforma, 30 structured questionnaire on knowledge, 10 attitude questionnaire & practice observation check list on total knee replacement to collect the data. After the pre-test, video assisted teaching module on total knee replacement was administered to the patients with total knee replacement. The post-test was done on 7th day. The collected data were tabulated and analyzed using descriptive and inferential statistics.

The significant findings of the demographic variable of the participants were that the majority of them were females (86.7%) in the age group of 61-70 years (51.1%), 60% of the participants were studied up to higher secondary and 75.6% participants did not have the previous exposure of information on total knee replacement. The researcher found that the majority of the participants needed education on total knee replacement. The level of knowledge among the patients undergoing total knee replacement in the pre-test was noted that 37 (82.2%) of the participants had
inadequate knowledge, whereas in the post-test majority of them (88.9%) had gained adequate knowledge.

It was also noted that there was a significant improvement in the post-test mean score (M=86.96, SD =8.09) in comparison with the pre-test scores (M=44.15, SD =10.99) with the‘t’ value of 23.143. It was statistically significant at P<0.001 level.

There was a significant association between the demographic variables and the pre-test level of knowledge and attitude. But in the post-test there was no significant association found. It was noted that there was an association between the practice with selected demographic variable only in the age group was significant at P<0.05 level. Hence the research hypothesis was accepted. The result of the study shows that video-assisted teaching module was an effective tool to impart knowledge and develop positive attitude and practice among the patients on total knee replacement.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>CHAPTER</th>
<th>CONTENT</th>
<th>PAGE NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>INTRODUCTION</td>
<td>1-7</td>
</tr>
<tr>
<td></td>
<td>• Need for the study</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Statement of the problem</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Objectives</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Operational definitions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Hypothesis</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Assumption</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Delimitation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Projected outcome</td>
<td></td>
</tr>
<tr>
<td>II</td>
<td>REVIEW OF LITERATURE</td>
<td>8-21</td>
</tr>
<tr>
<td></td>
<td>Reviews related to total knee replacement</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Review related to video assisted teaching module</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CONCEPTUAL FRAMEWORK</td>
<td></td>
</tr>
<tr>
<td>III</td>
<td>METHODOLOGY</td>
<td>22-27</td>
</tr>
<tr>
<td></td>
<td>• Research approach</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Research design</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Setting</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Population</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Sample</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Sample size</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Sampling technique</td>
<td></td>
</tr>
</tbody>
</table>
• Inclusion criteria
• Exclusion criteria
• Data collection tool
• Validity
• Reliability
• Pilot study
• Data collection procedure
• Ethical consideration

IV  DATA ANALYSIS & INTERPRETATION  28-53
V  DISCUSSION  54-57
VI  SUMMARY, CONCLUSION, LIMITATIONS, IMPLICATIONS & RECOMMENDATIONS  58-62
  REFERENCES  63-66
  APPENDICES
<table>
<thead>
<tr>
<th>S.NO</th>
<th>TABLES</th>
<th>PAGE NO.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Frequency and percentage distribution of demographic variables.</td>
<td>29-30</td>
</tr>
<tr>
<td>2</td>
<td>Mean and standard deviation of pre-test knowledge score.</td>
<td>31</td>
</tr>
<tr>
<td>3</td>
<td>Frequency and percentage distribution of knowledge score in pre-test.</td>
<td>32</td>
</tr>
<tr>
<td>4</td>
<td>Mean and standard deviation of pre-test attitude score.</td>
<td>33</td>
</tr>
<tr>
<td>5</td>
<td>Mean and standard deviation of post-test knowledge score.</td>
<td>35</td>
</tr>
<tr>
<td>6</td>
<td>Frequency and percentage distribution of knowledge score in post-test</td>
<td>36</td>
</tr>
<tr>
<td>7</td>
<td>Mean and standard deviation of post-test attitude score.</td>
<td>37</td>
</tr>
<tr>
<td>8</td>
<td>Effectiveness of knowledge score on total knee replacement.</td>
<td>39</td>
</tr>
<tr>
<td>9</td>
<td>Effectiveness of attitude score on total knee replacement.</td>
<td>40</td>
</tr>
<tr>
<td>10</td>
<td>Mean and standard deviation of practice score.</td>
<td>41</td>
</tr>
<tr>
<td>11</td>
<td>Correlation between the knowledge, attitude and practice.</td>
<td>43</td>
</tr>
<tr>
<td>12</td>
<td>Association between level of knowledge on total knee replacement and demographic variables in pre-test.</td>
<td>44-45</td>
</tr>
<tr>
<td></td>
<td>Association</td>
<td>Page</td>
</tr>
<tr>
<td>---</td>
<td>-----------------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>13</td>
<td>Association between level of attitude on total knee replacement and demographic variables in pre-test.</td>
<td>46-47</td>
</tr>
<tr>
<td>14</td>
<td>Association between level of knowledge on total knee replacement and demographic variables in post-test.</td>
<td>48-49</td>
</tr>
<tr>
<td>15</td>
<td>Association between level of attitude on total knee replacement and demographic variables in post-test.</td>
<td>50-51</td>
</tr>
<tr>
<td>16</td>
<td>Association between level of practice on total knee replacement and demographic variables.</td>
<td>52-53</td>
</tr>
</tbody>
</table>
## LIST OF FIGURES

<table>
<thead>
<tr>
<th>S.No</th>
<th>DESCRIPTION</th>
<th>PAGE NO.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Distribution of Percentage in pre-test attitude score</td>
<td>34</td>
</tr>
<tr>
<td>2</td>
<td>Distribution of Percentage in post-test attitude score</td>
<td>38</td>
</tr>
<tr>
<td>3</td>
<td>Distribution of percentage in practice score</td>
<td>42</td>
</tr>
</tbody>
</table>
## LIST OF APPENDICES

<table>
<thead>
<tr>
<th>S.No</th>
<th>DESCRIPTION</th>
<th>PAGE NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Letter seeking permission to conduct the study</td>
<td>xi-xii</td>
</tr>
<tr>
<td>B</td>
<td>Research participants consent form</td>
<td>xiii</td>
</tr>
<tr>
<td>C</td>
<td>Data Collection Tool- English</td>
<td>xiv-xx</td>
</tr>
<tr>
<td>D</td>
<td>Data Collection Tool- Tamil</td>
<td>xxi-xxviii</td>
</tr>
<tr>
<td>E</td>
<td>Video Assisted Teaching Module</td>
<td>xxix-xxxvi</td>
</tr>
<tr>
<td></td>
<td>-English</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-Tamil</td>
<td>xxxvii-xlili</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
CHAPTER I
INTRODUCTION

Life is a movement; a champion gets up, even when he cannot…

“Human body has the capacity to produce nearly an infinite variety of postures and movements that require the tissues of the body to both generate and respond to forces that produce and control movement at the body’s joints”.

“Knee osteoarthritis isn’t life threatening, but it makes life miserable”

- Dr. Losina

Therefore the aim of the treatment is not to add years to life but to improve its quality.

Arthritis of the knees is extremely common in India. In arthritis all the movements of the joints are restricted by pain. Beyond certain stage, pain killers, injections, massage or any other form of healing may not be adequate. So there becomes need for total knee replacement. Total knee replacement is the gold – standard operation for knee arthritis. Total knee replacement is a wonder of modern surgery, and it is most commonly performed orthopedic procedure. Agency for Health Care Research and Quality’s Health Care Cost and Utilization Project (HCUP): reported that the number of total knee replacements (TKRs) performed in the United States almost doubled between 1995 (2, 93,086) and 2005 (5, 49,867). According to Indian joint replacement statistics, worldwide 5, 00,000 replacement surgeries have been performed each year. A total of 45,000 TKR were performed last year in India. This may lead to more than 3, 50,000 TKRs per year by the end of the decade.

The first hinged knee prosthesis, made up of ivory was inserted in the year 1891 by German Surgeon “Themistocles Gluck” to replace a tubercular joint. The introduction of the “total condylar prosthesis” by Insall and Colleagues in 1972 is
generally agreed to mark the era of “Modern” knee replacements. This prosthesis was the first to replace all the compartment of the knee. According to the HCUP, acute care discharge disposition for TKR in 2005 was 41% in rehabilitation center, in the nursing home it was 32% and 26% was in the home health care setting.

In collaboration with the Office of Medical Applications of Research (OMAR), National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS), TKR planning committee and the Agency for Health Care Research and Quality (AHRQ) suggest that Total knee arthroplasty improves the functional status and relieves pain resulting in relatively low perioperative morbidity.

**Seth S. Leopold, M.D. (2008)** says that total knee replacements are performed over three decades, generally with excellent results. Most of the reports showed 90 percent success rate after surgery. Broadly speaking there are two types of knee replacements that they are total knee replacement and minimally invasive partial knee replacement. Both have long “track records” and good clinical results in India. In 2003, the National Institutes of Health held the Consensus Development Conference on Total Knee Replacement, where they discussed about the patient’s decision about surgery and the factors affecting the outcome of surgery. They identified four overarching themes in patients’ experience of TKR which was named as follows,

“Putting up and putting off”,
“Waiting and Worrying”,
“Letting go and Letting in”
“Hurting and Hoping”.

These four overarching themes have been explained that first, many peoples delayed surgery for months to years, despite of increasing pain and limitation. Second, once
patient decided to proceed with surgery, they entered a period of waiting and worrying about what would happen during and after surgery. **Third,** both pre and post-operative patients struggled with the need for independence, as well as learning to accept the new knee. **Fourth,** patients experienced post-operative pain associated with surgery and rehabilitation, yet reported having hope that they had regained the function. Most of the health professionals like doctors, nurses, physiotherapist, and dietician say that the solution is theoretically simple to improve the quality and frequency of medical care and education about the total knee replacement to the patients. The researcher has undertaken the study to educate the client about total knee replacement in order to improve their knowledge and to develop a positive attitude on total knee replacement.

**NEED FOR THE STUDY**

Total Knee Replacement (TKR) is one of the most common orthopedic operations in India, but few researchers have examined patient’s experience of the procedure. One orthopedic surgeon who has written on this topic “**Peter Bonutti**,” stated in this way “May be we don’t understand what our patients care about”. He cited two study findings that one – third of patients were dissatisfied with TKR, and he identified the need to undergo the procedure from the patient’s view rather than the surgeons’ point of view. The difference in perspective was highlighted in another study of 108 patients who underwent 120 TKRs, patients subjective and physician’s objective assessments of outcomes correlated poorly. The researcher concluded that “Surgeons are more satisfied than patients”. “Nurses have distinct role to play not only in treatment and care of ailment but also in the prevention of sickness and promotion of health. She makes tremendous contribution in the attainment of total
Health of an individual, family and the community at large” (Malhothra, 1988). Video assisted teaching Module on total knee replacement provides knowledge and to develop positive attitude and how to follow practice of exercises in hospital as well as at home of the client. Imparting knowledge about the total knee replacement to the client will improve their quality of life.

Tracey O’Neill (2009) says that the decision making process regarding TKR surgery is extremely complex. Patients have to weigh up numerous considerations before they can make a decision about surgery. By synthesizing ten qualitative studies, they have illuminated the importance of the health care professional during this process. Nurses’ role is more in educating the client and creates awareness about total knee replacement. Providing video assisted teaching module to the client will improve their knowledge about total knee replacement.

Patient says often,” Don’t let me just read it in a book or in a pamphlet or whatever. That’s all well and good, but I want to talk to some body”. Most of the clients are having so many questions and doubts about total knee replacement. Once patients decided to proceed with surgery, they anticipate it with anxiety. The common sources of anxiety are general fear about anesthesia, surgery and complications. Video assisted teaching module regarding anatomy & physiology of knee joint, signs & symptoms of knee osteoarthritis, anesthesia, surgery, exercises, diet and complications after surgery will help the client to avoid fear and anxiety.

Patient says often,” I’m telling myself, and I’ll tell somebody else, “Don’t give up until you get full mobility back”. Most of the patients are not practicing the exercises as early as possible after the surgery that will lead to stiffness of the knee. Video assisted teaching module regarding exercises before and after the surgery and
activities at hospital as well as at home will improve the client’s knowledge on rehabilitative measures. This study was being undertaken to assess the pre-existing knowledge & attitude of the client on total knee replacement and to assess the effectiveness of video assisted teaching module on total knee replacement among the patients undergoing total knee replacement.

**Statement of the problem**

A study to assess the effectiveness of video assisted teaching module on knowledge, attitude and practice among the patients undergoing total knee replacement at MIOT Hospitals, Chennai.

**Objectives**

- To assess the existing knowledge and attitude of patient on total knee replacement.
- To assess the effectiveness of video assisted teaching module on knowledge, attitude on total knee replacement.
- To assess the existing practice of patient after surgery.
- To correlate between knowledge, attitude and practice on total knee replacement among the patient undergoing total knee replacement.
- To associate the knowledge, attitude and practice of patient on total knee replacement with selected demographic variables like age, sex, occupation, educational status, place of residence etc.

**Operational definition**

**Effectiveness**

It refers to the outcome of the study in terms of knowledge gained & developing positive attitude.
Knowledge

It refers to client’s range of information and level of understanding on total knee replacement as measured by a questionnaire on knowledge.

Attitude

It refers to the expressed beliefs and perspectives of respondents regarding total knee replacement as measured by an attitude scale.

Practice

It refers to the client’s performance or activities after total knee replacement as measured by practice observation check list.

Video-assisted teaching module

It refers to video used as a teaching aid with developed instructions and teaching programme for patients undergoing total knee replacement. It includes anatomy of knee joint, surgical procedure of TKR, diet, exercise, etc.

Total Knee Replacement

It refers to the surgery in the knee joint where the diseased joint is replaced with artificial material. It will be hereafter referred to as TKR.

Hypothesis

H₁: There is a significant difference in the knowledge & attitude of patient regarding total knee replacement before and after administration of Video-assisted teaching module.

H₂: There is a significant association between the knowledge & attitude of patient regarding total knee replacement with selected demographic variables in the pretest.
Assumption

- Administering the Video-assisted teaching module may help in improving the knowledge level of patients regarding total knee replacement.
- Video-assisted teaching module may develop positive attitude and practice of patients towards total knee replacement.
- Patient’s knowledge may vary with the selected demographic variables.

Delimitation

- The study is limited to patients undergoing total knee replacement.
- The study is limited to patients in In-patient department.
- The study is limited to patients in C₁ and C₂ ward at MIOT Hospital, chennai.
- Period of data collection is limited to 6 weeks.
- Convenient sampling technique was selected due to inadequacy of sample.

Projected outcome

- An increase in the knowledge level of client regarding total knee replacement after giving Video-assisted teaching module.
- Patient will develop positive attitude and practice towards total knee replacement.
- Based upon the results of the study, the investigator can make appropriate recommendations to improve the level of knowledge of clients regarding total knee replacement by giving Video-assisted teaching module.
CHAPTER II
REVIEW OF LITERATURE

Introduction

“Knowledge is of two kinds, we know a subject ourselves or we know where we can find information upon it”.

-Samuel Johnson

This chapter deals with the literature relevant to the topic of study. This review of literature was done in the following sections.

Review of literature is divided into

Section I: Review of literature related to Total Knee Replacement

Section II: Review of literature related to Video-Assisted Teaching Module.

SECTION-I

Review of literature related to Total Knee Replacement

Nilen shah (2009) conducted a prospective randomized trial on unicompartmental knee replacement (UKR) & total knee replacement with the sample of 100 patients. Two well-matched groups were obtained with an average age of 69 years. The same surgical team carried out UKR & TKR according to the randomization. Fifty patients were received the UKR and 52 patients were received the TKR. The patients had an identical post-operative regimen and mobilization with the help of physiotherapists. The patients were evaluated in a standard fashion clinically, radio graphically, pre and post-operatively. The patients were followed up for a minimum period of 5 years. The 5 year results were revealed that the unicompartmental knee replacement (UKR) group had a lesser perioperative morbidity with early regain of the range of movement of the knee. After 5 years review, the UKR and the TKR were equally effective in relieving pain.
Scopaz et al (2009) conducted a study to assess the effect of quadriceps strengthening exercise after total knee replacement with the sample of 50 patients. The results revealed that the patient who received quadriceps strengthening exercises improved the movement of knee after total knee replacement.

Biasca N et al (2009) conducted a study on Minimally invasive computer-navigated total knee arthroplasty. Modern computerized knee navigation systems aid surgeons both in the conventional and in the minimally invasive approach to optimize mechanical and rotational alignments of the components in all three planes to avoid any malrotation and/or any errors in coronal, sagittal and axial alignments. The advantages of minimally invasive total knee arthroplasty can be achieved without loss of accuracy. There is an increasing evidence of a positive correlation between accurate mechanical alignment after total knee replacement and the quality –of –life of patient outcomes.

Gillian et al (2009) conducted a study on health related quality of life after knee replacement. The findings of the present study suggested that age and obesity did not have a negative impact on patient – relevant outcomes (pain and physical function). Dissemination of these findings had the potential to increase appropriate referrals for knee replacement and thereby reduced the pain and functional disability due to osteoarthritis of the knee.

Tracey O’ Neill (2009) conducted a study to assess the decision making on TKR. A meta-synthesis was undertaken and the results revealed that the decision making process regarding TKR surgery was extremely complex as patients had to weigh up numerous considerations before they could make a decision about surgery. By
synthesizing ten qualitative studies, they have illuminated the importance of the health care professional during this process.

Nunez et al (2009) conducted a study to health related quality of life and the factors influencing long term outcomes. To evaluate health-related quality of life (HRQOL) in patients with osteoarthritis undergoing total knee replacement (TKR) identified the influence of socio-demographic, clinical, intra-operative, and postoperative variables on HRQOL; and determined the patient’s perceptions for 7 years. They conducted a prospective study with 7 years of follow up. HRQOL measures (Western Ontario and McMaster Universities Osteoarthritis Index [WOMAC] and Short Form 36 [SF-36]); socio-demographic, clinical, intra-operative, inpatient, and postoperative data; patient perceptions of TKR outcomes; and physical activity for 7 years were determined. The results revealed that among 146 eligible patients, 112 (86 women, mean age 67.3 years) completed follow up data. There were significant differences between pre and post-operative WOMAC pain, stiffness, and function scores (P < 0.001).

Seth. S. Leopold, M.D. (2008) conducted a study on functional outcome of total knee replacement. The results revealed that the total knee replacements are done well, and the implant serves the patient well for many years. 90-95% of TKR are still functioning well for 10 years after the surgery. Most of the patients walked with a cane, most could do stairs and arise from chairs normally and most of them resumed their desired level of recreational activity.

Ghani et al (2005) conducted a study to assess the difference between right and left side in total knee replacement and unicondylar knee replacement. An observational study revealed that the unicondylar knee replacement was performed
more commonly on the left side 66% as compared to only 34% on right side. They concluded that the total knee replacement was more common on the right side (64%) as compared to (36%) on left side.

Robert L. Kane MD et al (2005) conducted a study to assess the functional outcome of total knee arthroplasty. The results revealed that Sixty-two studies met the criteria and the researchers were reviewed. Total knee arthroplasty was found to be associated with substantial functional improvement, with the effect sizes varying with the measure that was used. Physician-derived measures showed effect sizes of 2.35 and 3.91, whereas patient-derived measures showed smaller effect sizes (1.27 and 1.62). Few investigators used multivariate models to identify associations between outcomes and patient characteristics. They concluded that the total knee arthroplasty is a generally effective procedure.

Albert A (2003) conducted a study to assess the outcome of total knee replacement. The outcome of research on TKR emphasized before and after studies, there are variations on case series of various techniques and prosthesis with little attention to the role of other factors or to attrition. There is an evidence of improved function after TKR.

Allyson Jones et al (2003) conducted a study to assess the determinants of function after total knee arthroplasty. The results proved that 6 months after surgery, the average WOMAC physical function score was 70.5 (SD=18.2) and the average SF-36 physical function score was 44.8 (SD=25.3). Using multiple regression analysis, baseline function, walking device, walking distance, and co-morbid conditions predicted 6-month function (WOMAC: $R^2=.20$; SF-36 physical function: $R^2=.27$). Patients who have lower preoperative function may require more intensive
physical therapy intervention because they are less likely to achieve functional outcomes similar to those of patients having less pre-operative dysfunction.

SECTION - II

**Review of literature related to Video-Assisted Teaching Module**

Dansethakul P et al (2010) conducted a study of solving the barriers to diabetes education through the use of multimedia. This study examined the knowledge capacity of villagers in the Klongmai community of Nakhon Pathom, Thailand, regarding diabetes by way of action research. A health status assessment and a survey of the community were carried out and used as the basis for designing an educational video on diabetes that is accessible regardless of age and educational background. Evaluations of the pre- and post study questionnaires were carried out using statistical analysis. The results indicated that the devised educational materials were effective in encouraging the communities’ self-awareness and perception of diabetes at the significance level of 0.05. Most importantly, the participants demonstrated that the proficiency in adapting the knowledge was gained from the workshop to their own lifestyle.

Bierens JJ et al (2010) conducted a study of Comparison of instructor-led automated external defibrillation training and three alternative DVD-based training methods. This prospective randomized study with a non-inferiority design compared traditional instructor-led training with three DVD-based AED-training methods (2.5min DVD without practice; 4.5min DVD with manikin practice; 9min DVD with manikin practice and scenario training). After DVD BLS-training, 396 participants were assigned to one of the four AED-training methods by randomization stratified for age. Participants were tested immediately after the training (post-test) and 2
months later (retention-test) using modified Cardiff criteria. The primary endpoint was the percentage of providers scoring 70% or higher on testing. The performances of participants in all DVD-based training groups were significantly higher on the retention-test than on the post-test. Those who received scenario training scored higher on the post-test was compared to the other DVD-training groups (p<0.001). Scenario training is a useful addition, but instructor-facilitated training remains the best method.

Matsui M. (2010) conducted a study to assess the effectiveness of end-of-life education among community-dwelling older adults through video. A quasi-experimental design was used. A total of 121 older adults, aged 65 years consented to participate. Data from 55 intervention and 57 control participants were used for the analysis. The intervention consisted of an education program comprising a video, a lecture using a handout, and discussion among participants. The control group received only the handout. Both groups were followed up after one month. The intervention groups attitude became more favorable towards advance directives, especially living wills (P = 0.024). In addition to their expression of preference for life-sustaining treatment by means of artificial nutrition was less at follow up, demonstrating that these older adults had become more autonomous (P = 0.008). There was a greater acceptance of the intervention as a whole by the intervention group compared with the control group (P = 0.011). Although few participants completed living wills, at follow up twice as many in the intervention group had discussed end-of-life matters with family members.

Banda et al (2010 conducted a study of video modeling interventions to teach spontaneous requesting using AAC devices to individuals with autism: a preliminary
investigation. His multiple baseline study investigated to what extent individuals with autism would learn to operate a speech generating device (SGD) to request a preferred object by observing a video model. The intervention consisted of each participant viewing a 10 to 15 video model that demonstrated the requesting of a preferred object using a SGD. After viewing the video model, two participants displayed the ability to request preferred items using the SGD without prompting cues. The study proved that the video modeling could be used to teach individuals with autism.

Nagurka R et al (2010) conducted a study on Effectiveness of stroke education in the emergency department’s waiting room through video. In this, pilot randomized controlled trial, research team enrolled patients and visitors in the fast-track waiting area of the ED. The intervention group received an educational video program, one-on-one counseling, and stroke education materials, and completed a 13-question test after receiving the education. The control group completed the same test without receiving any education. Both groups completed the same test again for 1 and 3 months to assess stroke knowledge retention. There were a total of 329 participants: 151 in the control group and 178 in the intervention group. ED stroke education, which includes video program, one-on-one counseling, and written educational materials, is able to significantly increase knowledge on stroke. Modification and reinforcement of education is needed to achieve better knowledge retention and favorable lifestyle modifications.

Babu (2003) conducted a study to assess the effectiveness of video assisted teaching on knowledge, attitude and practice of self insulin injection procedure. Quasi-experimental studies with the sample size of 50 patients were selected. They
concluded that the experimental group had significantly improved the knowledge, attitude and practice. The result was more significant (P < 0.001).

Wong I.V (2003) conducted a study stated that culturally sensitive educational video material using familiar metaphors could be shown to have a statistically significant effect on patients knowledge of medication taking concepts. The success of the video had resulted in its wide spread use in ARV roll out in South Africa.

Cindy et al (2002) conducted a study to compare the outcomes of preoperative education provided in a non-interactive versus an interactive DVD programme. Experimental Design was used. Convenience sample of 58 elective joint replacement patients were selected. Subjects were randomly assigned to the video or DVD group. Measurements included post education test of knowledge, patient satisfaction questionnaire, and post discharge collection of data on physical therapy participation, complications, pain behaviors, and length of stay. Participants in the DVD group had statistically higher knowledge scores and significantly more physical therapy visits.

Bowering et al (2000) conducted a study to assess the video tape preparation of patients before hip replacement surgery with the aim of reducing stress and anxiety. The use of video–tape decreased anxiety and stress. It was measured in terms of urinary cortical excretion and intra-operative systemic blood pressure in patients undergoing hip replacement surgery and prepared them to cope better with the post-operative pain.

Giocoma et al (1999) investigated the effect of video teaching on renal transplant recipient outcomes among 59 adults under going renal transplantation. The
Quasi-experimental study concluded that the experimental group who received the video teaching had significantly greater improvement in knowledge scores in post teaching.

Sanguinetti and catanzaros (1998) conducted a study to assess the discharge teaching video tape on cognitive dysfunction. The study results indicated that patient and family caregivers who received a discharge teaching video tape on cognitive dysfunction were more informed and better prepared to help loved ones compensate for cognitive dysfunction.

Well et al (1998) conducted a study with sample of 128 women newly referred for breast cancer risk counseling when randomized to receive the video before counseling, observations of misunderstanding and distress emphasize the video should be seen as an aid for communication at the clinic.

Weston et al (1997) conducted a study with 90 prenatal mothers. The results proved that a patients information video combined with an information sheet may result in greater participation in a research trails and may increase women knowledge of a specific health problem and related research trail.

Lin PC et al (1997) conducted a study to compare the effectiveness of different educational programs for patients with total knee arthroplasty. Researcher compared the effects of pre-admission and post-admission educational programs for patients with total knee arthroplasty. Quasi-experimental study with the sample of 60 total knee arthroplasty patients was selected. Subjects in the experimental group received pre-admission pre-operative teaching with an instruction booklet during a pre-operative outpatient clinic visit. The control group received only post-admission pre-operative teaching with the same instruction booklet and no video. The results
revealed that the experimental group had a significantly higher knowledge level than the control group, the experimental group performed exercise more regularly and correctly than those in the control group and the experimental group had greater flexion of the operative knee joint than the control group. Pre-admission teachings with a videotape program and a health manual for patients with total knee arthroplasty were recommended.

Wood’s et al (1996) conducted a research explored that the efficacy of using video self instruction kits to increase breast self examination proficiency and knowledge about breast cancer among a sample of 62 mothers. The results indicated that the self instruction program had significant and positive impacts on the two BSE proficiency measures skill demonstration (P=0.0001) and limp detection using a simulation model. The results revealed that the knowledge about breast cancer scores also improved from pre-test to post test.

ISKO (1995) reemphasized the need for development and use of pre-operated video taped patient education over self care deficit theory. They used a nursing theory framework; the intervention was piloted on four subjects. They expressed positive evaluation of the alternative educational strategy.
CONCEPTUAL FRAMEWORK

The conceptual framework for this study was derived from Orem’s general theory of nursing (1959). It is based on the concepts of self-care, self care agency, self-care requisites and therapeutic self-care demand.

Self-care deficit theory

Nursing care is necessary to meet the self care requisites through guiding, teaching, supporting, acting or doing for, and providing an environment for the patient. Here the researcher educates the patient about the anatomy and physiology of knee joint, preparing for surgery, surgical procedure, exercises, diet, complication and general information on TKR which helps to gain knowledge and to develop positive attitude.

Self-care

It comprises those activities performed independently by an individual to promote and maintain personal well-being throughout life. The patient who underwent total knee replacement is unable to perform self care activities especially their mobility is affected.

Self-care agency

It refers to the individual’s ability to perform self-care activities. It has two agents:

- Self-care agent (person who provides self care)
- Dependent care agent (patient who underwent total knee replacement need care from the nurse).

Self-care requisites

- Universal (maintaining air, water & food intake)
- Developmental (adjusting the change in body image). Here the patient’s diseased joint is replaced with artificial material and they have to accept the new joint in order to improve their mobility.

- Health deviation (includes action such as seeking medical assistance). Here the patient is deviated from their normal life during the initial stage of surgery and they need a health care assistance to get their mobility back.

Therapeutic self care demand

The clients who underwent total knee replacement needs education regarding the surgical procedure, exercises and diet after surgery.

Nursing agency

The researcher aimed to provide video-assisted teaching on total knee replacement.

Nursing systems theory

It is composed of three systems. It includes,

- Wholly compensatory system
- Partly compensatory system
- Supportive educative system

Patient who had undergone total knee replacement required information regarding the total knee replacement procedure, preparation for surgery, activities and exercises after surgery. Patient who had undergone total knee replacement needed supportive educative system.
Conceptual framework based on Orem’s Self-Care Deficit Theory (1959)

**Self Care**
Patient undergone total knee replacements are not able to perform exercises due to pain after the surgery.

**Therapeutic Self-care demand**
- Total knee replacement client needs education regarding the procedure, exercises and diet after surgery etc

**Nursing Agency**
- Providing video-assisted teaching module on total knee replacement regarding anatomy of knee joint, TKR procedure, preparing for surgery, activity and exercise, diet, complications etc

**Self Care Agency**
Client need to develop adequate knowledge, positive attitude and practice towards total knee replacement for which he/she need of assistance from orthopedic surgeon, nurses, physiotherapist, dietician etc.

**PATIENT**
Patient undergone total knee replacements are not able to perform exercises due to pain after the surgery.
Conceptual Frame Work Based On Orem’s General Theory Of Nursing (1959)

Demographic variables

- It includes age, sex, educational status, occupation, income, place of residence, duration of knee osteoarthritis, family history of knee osteoarthritis, source of information on TKR.

Assessment

- Pre test will be given to all participants. Assessment of knowledge and attitude of patient regarding total knee replacement. Development of video assisted teaching module.

Supportive – educative system

- Investigator Action Providing video assisted teaching module on TKR includes anatomy of knee joint, surgical procedure of TKR, diet, exercise etc.,

- Subject action Observing & listening video module on TKR includes anatomy of knee joint, surgical procedure of TKR, diet, exercise etc.,

Evaluation

- Adequate Knowledge and developing positive attitude towards total knee replacement.

- Moderate Knowledge and attitude towards TKR. Need reinforcement

- Inadequate Knowledge and negative attitude towards TKR.

RESSESSMENT
CHAPTER III
METHODOLOGY

Research methodology is a systematic way to solve the research problem. 

*Pearson (1992)* stated that, there is no shortcut to truth. There is no way to gain the knowledge of the universe except through the gateway of scientific method. Methodology is one which enables the researches to project a blueprint of the research undertaken.

**Approach**

The approach employed for this study was quantitative approach.

**Design**

A pre-experimental design was adopted in this study.

One group pre-test and post-test design

\[ O_1 \rightarrow X \rightarrow O_2 \]

Where, \( O_1 \) --- pretest, \( O_2 \) --- post test, \( X \) --- intervention (video assisted teaching module)

**Setting**

This study was conducted at C1 & C2 wards of MIOT Hospitals, Chennai. MIOT has performed more than 2,500 Total Knee Replacement successfully over the last 5 years without infection or major complications, making it the preferred destination for knee replacement surgery. They were using variety of knee prostheses, including the latest Hiflex Knee offering 150 degree flexion. MIOT is also a pioneer in “Computer Navigated Total Knee Replacement” which helps in ligament balancing and placement of prosthesis with zero error. This surgery should be vastly improving the longevity of the joint. Here Total Knee Replacement is performed with just a small 8-10cm incision and the patients can
recover completely within 3 weeks time. After surgery patients are immediately put on a CPM (Continuous Passive Motion) machine and encouraged to walk the next day, which decreases the incidence of Deep vein thrombosis. They are claiming staircase by the 5th day and are discharged on the 7th post-operative day.

**Population**

Population selected for this study was patients who were undergoing total knee replacement.

**Sample**

Patients who were admitted in C1 & C2 Wards of MIOT Hospitals, Chennai.

**Sampling Technique**

The sample was selected by using a non probability convenient sampling technique.

**Sample size**

Sample size selected for this study was 45.

**Inclusion criteria**

- Patients who were undergoing total knee replacement.
- Patients who were willing to participate in this study.
- Patients who could speak and read Tamil and English.

**Exclusion criteria**

- Clients who were attending out patient department.
- Clients who were critically ill.
Data collection tool

The tool used for data collection was structured questionnaire. It has four parts.

Part I of the tool, the demographic and baseline data. It consists of 12 items related to demographic and other baseline data of the patients undergoing TKR.

Part II of the tool contains knowledge questionnaire. It has 30 questions each right answers scores one mark and wrong answer does not score mark, the maximum score is 30. The scoring were Adequate Knowledge 75 – 100%, Moderate Knowledge 51 – 74%, Inadequate Knowledge < 50%

Blueprint of the tool

<table>
<thead>
<tr>
<th>Content</th>
<th>Knowledge</th>
<th>No. of items</th>
<th>Comprehension</th>
<th>No. of items</th>
<th>Skills</th>
<th>No. of items</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anatomy &amp; physiology</td>
<td>1,2</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>Surgical condition</td>
<td>3,4,8,9</td>
<td>4</td>
<td>5,6,7,10,1</td>
<td>5</td>
<td>-</td>
<td>-</td>
<td>9</td>
</tr>
<tr>
<td>Pain management</td>
<td>19</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Diet &amp; Exercise</td>
<td>21,22,23,24,25</td>
<td>5</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>5</td>
</tr>
<tr>
<td>Complication</td>
<td>26,27</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2</td>
</tr>
</tbody>
</table>
Part III of the tool contains attitude questionnaire. It has 10 statements (5 positive & 5 negative statements) related to patient’s attitude on TKR which are responded as strongly agree, agree, disagree, strongly disagree and don’t know.

<table>
<thead>
<tr>
<th>Positive Question Score</th>
<th>Negative Question Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>-4 marks</td>
</tr>
<tr>
<td>Agree</td>
<td>-3 marks</td>
</tr>
<tr>
<td>Disagree</td>
<td>-2 marks</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>-1 mark</td>
</tr>
<tr>
<td>Don’t Know</td>
<td>-0 marks</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>-1 mark</td>
</tr>
<tr>
<td>Agree</td>
<td>-2 marks</td>
</tr>
<tr>
<td>Disagree</td>
<td>-3 marks</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>-4 marks</td>
</tr>
<tr>
<td>Don’t Know</td>
<td>-0 marks</td>
</tr>
</tbody>
</table>

The maximum score is 40 marks

- Good attitude 75-100%
- Fair attitude 51-74%
- Poor attitude <50%.

Part IV of the tool contains Practice Observation check list for observing practice of client undergoing total knee replacement. It consists of 15 questions regarding practices followed by the client after TKR. Maximum score was 15.

Scoring and interpretation:

- Adequate practice 75-100%
- Moderate practice 51-74%
Inadequate practice <50%

**Part V-** Video assisted teaching module on TKR.

It consists of Anatomy of knee joint, surgical procedure of TKR, signs and symptoms of knee joint infection, preparing for surgery, diet, exercise guidelines for TKR, complications and general information on TKR.

**Validity**

The tool was developed through an extensive review of literature. The tool was reviewed by experts in the field of nursing and orthopedics for validation.

**Reliability**

The reliability of a tool was established by conducting pilot study. The knowledge reliability of the tool was established by test – retest method, score was $r = 0.895$. The attitude reliability was established by split half method, the score was $r = 0.85$ and the practice reliability was established by split half method, the score was $r = 1$.

**Pilot study**

The pilot study was conducted on a sample of 5 patients with total knee replacement. The results proved that the instruments were valid and reliable.

**Data collection procedure**

A formal permission was obtained from the department of knee replacement to conduct the main study. Data collection was carried out for six weeks. The total forty five samples were selected by the method of non -probability convenient sampling technique. After getting informed consent from the participants, the structured questionnaire on the knowledge, attitude of total knee replacement was given. After that video assisted teaching
module was given on the day of admission and then practice of exercises was observed by using check list by the investigator from the day of surgery to 7th post operative day. The post test was given at the day of discharge. The knowledge, attitude and practice of the patient on total knee replacement were assessed.

**Human rights protection**

The pilot and main study were conducted only after approval of the research proposal by the College of Nursing and the institutional ethical committee. Permission was obtained from the concern head of the department to conduct the study. The written consent was obtained from all the patients who participated in the study.
CHAPTER IV

DATA ANALYSIS AND INTERPRETATION

This chapter deals with analysis and interpretation which includes both descriptive and inferential statistics. Analysis is defined as the method of organizing data in such a way that the research question can be answered. Interpretation is the process of making a sense of the result and of examine the simplification of the finding within a broader context (polit and beck, 2004).

Organization of finding

The finding of the study were organized and presented under the following headings.

Section–I Description of demographic variables in frequency and percentage.
Section–II Distribution of existing knowledge and attitude score in the pre-test.
Section–III Distribution of knowledge and attitude score in the post-test.
Section–IV Distribution of effective knowledge & attitude score on TKR.
Section–V Distribution of existing level of practice of patients after TKR.
Section–VI Correlation between the knowledge, attitude and practice of patient
Section–VII Association between selected demographic variables and pretest knowledge, attitude score of patient
Section–VIII Association between selected demographic variable & post-test knowledge, attitude and practice score of patient.
SECTION – I

This section deals with the description of demographic variables in frequency and percentage.

Table – 1 Distribution of demographic variables of the patients undergoing total knee replacement.

<table>
<thead>
<tr>
<th>Demographic Variables</th>
<th>N.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Age in years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) &lt; 50 yrs</td>
<td>4</td>
<td>8.9</td>
</tr>
<tr>
<td>b) 51 – 60 yrs</td>
<td>12</td>
<td>26.7</td>
</tr>
<tr>
<td>c) 61 – 70 yrs</td>
<td>23</td>
<td>51.1</td>
</tr>
<tr>
<td>d) &gt; 70 yrs</td>
<td>6</td>
<td>13.3</td>
</tr>
<tr>
<td>2. Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Male</td>
<td>6</td>
<td>13.3</td>
</tr>
<tr>
<td>b) Female</td>
<td>39</td>
<td>86.7</td>
</tr>
<tr>
<td>3. Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Illiterate</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>b) Primary</td>
<td>1</td>
<td>2.2</td>
</tr>
<tr>
<td>c) High school</td>
<td>17</td>
<td>37.8</td>
</tr>
<tr>
<td>d) Hr. Sec.</td>
<td>27</td>
<td>60.0</td>
</tr>
<tr>
<td>e) Degree / Diploma / Professional</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>4. Occupation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Unemployed</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>b) Government</td>
<td>5</td>
<td>11.1</td>
</tr>
<tr>
<td>c) Private</td>
<td>3</td>
<td>6.7</td>
</tr>
<tr>
<td>d) Self employed</td>
<td>2</td>
<td>4.4</td>
</tr>
<tr>
<td>e) House wife</td>
<td>35</td>
<td>77.8</td>
</tr>
<tr>
<td>5. Family income</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) &lt; Rs.10000</td>
<td>10</td>
<td>22.2</td>
</tr>
<tr>
<td>b) Rs.10001 – 15000</td>
<td>32</td>
<td>71.1</td>
</tr>
<tr>
<td>c) Rs.15001 – 20000</td>
<td>2</td>
<td>4.4</td>
</tr>
<tr>
<td>d) &gt; Rs.20000</td>
<td>1</td>
<td>2.2</td>
</tr>
<tr>
<td>6. Place of Residence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Urban</td>
<td>26</td>
<td>57.8</td>
</tr>
<tr>
<td>b) Rural</td>
<td>19</td>
<td>42.2</td>
</tr>
<tr>
<td>7. Type of Family</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Joint</td>
<td>5</td>
<td>11.1</td>
</tr>
<tr>
<td>b) Nuclear</td>
<td>40</td>
<td>88.9</td>
</tr>
</tbody>
</table>
Table – 1 reveals that more number of the participants were in the age group of 61-70 years (51.1%), majority were female participants (86.7%), (60%) of the participants were educated up to higher secondary. Most of the participants were suffering from 3-6 years with osteoarthritis of Knee (53.3%), 75.6% of the participants did not have previous exposure of information on TKR. This shows that majority of the participants need education about total knee replacement.
SECTION – II

This section deals with the distribution of existing knowledge and attitude of patient

Table–2 Mean & standard deviation of knowledge score on Total Knee Replacement in the Pre Test

<table>
<thead>
<tr>
<th>Knowledge Aspects</th>
<th>Descriptive Statistics</th>
<th>Ranges</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>S.D.</td>
</tr>
<tr>
<td>Anatomy &amp; physiology</td>
<td>98.89</td>
<td>7.45</td>
</tr>
<tr>
<td>Signs &amp; symptoms</td>
<td>100.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Surgical procedure</td>
<td>40.44</td>
<td>27.79</td>
</tr>
<tr>
<td>Preparing Surgery</td>
<td>17.78</td>
<td>26.21</td>
</tr>
<tr>
<td>Activity &amp; Exercise</td>
<td>44.44</td>
<td>11.17</td>
</tr>
<tr>
<td>Pain Management</td>
<td>97.78</td>
<td>14.91</td>
</tr>
<tr>
<td>Diet</td>
<td>51.55</td>
<td>15.66</td>
</tr>
<tr>
<td>Complication</td>
<td>1.1</td>
<td>7.45</td>
</tr>
<tr>
<td>General Information</td>
<td>19.26</td>
<td>26.10</td>
</tr>
<tr>
<td>Overall Knowledge</td>
<td>44.15</td>
<td>10.99</td>
</tr>
</tbody>
</table>

Table – 2 shows that in knowledge aspects all the participants know signs & symptoms of knee osteoarthritis (100%), (50%) in anatomy & physiology, Diet 20%, 25% were known about activity and exercise. The overall mean knowledge was 44.15 and SD was 10.99. This shows that the participants need education about surgical procedure, diet and exercise after TKR.
<table>
<thead>
<tr>
<th>Knowledge Aspects</th>
<th>Inadequate Knowledge</th>
<th>Moderate Knowledge</th>
<th>Adequate Knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>Anatomy &amp; physiology</td>
<td>1</td>
<td>2.2%</td>
<td>0</td>
</tr>
<tr>
<td>Signs &amp; symptoms</td>
<td>0</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Surgical procedure</td>
<td>33</td>
<td>73.3%</td>
<td>3</td>
</tr>
<tr>
<td>Preparing Surgery</td>
<td>37</td>
<td>82.2%</td>
<td>8</td>
</tr>
<tr>
<td>Activity &amp; Exercise</td>
<td>40</td>
<td>88.9%</td>
<td>5</td>
</tr>
<tr>
<td>Pain Management</td>
<td>1</td>
<td>2.2%</td>
<td>0</td>
</tr>
<tr>
<td>Diet</td>
<td>18</td>
<td>40.0%</td>
<td>25</td>
</tr>
<tr>
<td>Complication</td>
<td>45</td>
<td>100.0%</td>
<td>0</td>
</tr>
<tr>
<td>General Information</td>
<td>39</td>
<td>86.7%</td>
<td>5</td>
</tr>
<tr>
<td>Overall Knowledge</td>
<td>37</td>
<td>82.2%</td>
<td>7</td>
</tr>
</tbody>
</table>

Table – 3 reveals that most of the participants (82.2%) were having inadequate knowledge. All the participants (100%) were having adequate knowledge on signs & symptoms of knee osteoarthritis because pain is an important sign for the most of the diseases condition. This shows that majority of the participants need education on TKR.
Table – 4 Mean & standard deviation of Attitude Score on Total Knee Replacement in Pre-test

<table>
<thead>
<tr>
<th>Attitude Score</th>
<th>Descriptive Statistics</th>
<th>Ranges</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>S.D.</td>
</tr>
<tr>
<td>Pre Test</td>
<td>47.22</td>
<td>7.27</td>
</tr>
</tbody>
</table>

Table – 4 shows that the pre-test mean attitude score of the participants was 47.22 and standard deviation was 7.27.
Figure– 1 Percentage distribution of existing Level of Attitude on Total Knee Replacement in the Pre-test

Figure– 1 shows that majority of the participants were having poor attitude 33(73.3%) in the pretest. This shows that majority of the participants need education on TKR.
SECTION – III

This section deals with the Distribution of knowledge and attitude score in the post-test.

Table–5 Mean & standard deviation of knowledge score on Total Knee Replacement in the Post test.

<table>
<thead>
<tr>
<th>Knowledge Aspects</th>
<th>Descriptive Statistics</th>
<th>Ranges</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>S.D.</td>
</tr>
<tr>
<td>Anatomy &amp; physiology</td>
<td>100.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Signs &amp; symptoms</td>
<td>100.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Surgical procedure</td>
<td>94.67</td>
<td>9.91</td>
</tr>
<tr>
<td>Preparing Surgery</td>
<td>82.96</td>
<td>23.16</td>
</tr>
<tr>
<td>Activity &amp; Exercise</td>
<td>87.50</td>
<td>13.85</td>
</tr>
<tr>
<td>Pain Management</td>
<td>100.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Diet</td>
<td>83.11</td>
<td>19.05</td>
</tr>
<tr>
<td>Complication</td>
<td>60.0</td>
<td>31.26</td>
</tr>
<tr>
<td>General Information</td>
<td>83.70</td>
<td>16.85</td>
</tr>
<tr>
<td>Overall Knowledge</td>
<td>86.96</td>
<td>8.07</td>
</tr>
</tbody>
</table>

Table –5 shows that the overall mean knowledge was 86.96 and SD was 8.07 in the post test.
Table–6 Distribution of Level of Knowledge on Total Knee Replacement in the Post-test

<table>
<thead>
<tr>
<th>Knowledge Aspects</th>
<th>Inadequate Knowledge</th>
<th>Moderate Knowledge</th>
<th>Adequate Knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N.</td>
<td>%</td>
<td>N.</td>
</tr>
<tr>
<td>Anatomy &amp; physiology</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>Signs &amp; symptoms</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>Surgical procedure</td>
<td>0</td>
<td>0.0</td>
<td>1</td>
</tr>
<tr>
<td>Preparing Surgery</td>
<td>3</td>
<td>6.7</td>
<td>16</td>
</tr>
<tr>
<td>Activity &amp; Exercise</td>
<td>1</td>
<td>2.2</td>
<td>11</td>
</tr>
<tr>
<td>Pain Management</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>Diet</td>
<td>2</td>
<td>4.4</td>
<td>11</td>
</tr>
<tr>
<td>Complication</td>
<td>31</td>
<td>68.9</td>
<td>0</td>
</tr>
<tr>
<td>General Information</td>
<td>0</td>
<td>0.0</td>
<td>22</td>
</tr>
<tr>
<td>Overall Knowledge</td>
<td>0</td>
<td>0.0</td>
<td>5</td>
</tr>
</tbody>
</table>

Table-6 reveals that most of the participants (89.9%) were having adequate knowledge. All the participants (100%) were having adequate knowledge on anatomy & physiology, signs & symptoms and pain management of knee osteoarthritis. This shows that the video-assisted teaching is an effective tool to improve the knowledge of the participants.
Table-7 Mean & standard deviation of Attitude Score on Total Knee Replacement in Post test

<table>
<thead>
<tr>
<th>Attitude Score</th>
<th>Descriptive Statistics</th>
<th>Ranges</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>S.D.</td>
</tr>
<tr>
<td>Post Test</td>
<td>83.61</td>
<td>7.93</td>
</tr>
</tbody>
</table>

Table-7 shows that the post test mean attitude score of the participants was 83.61 and standard deviation was 7.93.
Figure 2 shows that the majority of the participants (86.7%) were having good attitude in the post-test.
SECTION – IV

This section deals with the Distribution of effective knowledge & attitude score on TKR.

Table – 8 Effective Knowledge score on Total Knee Replacement.

<table>
<thead>
<tr>
<th>Knowledge Aspects</th>
<th>Improvement Knowledge (n=50)</th>
<th>Paired t test and P value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>S.D</td>
</tr>
<tr>
<td>Anatomy &amp; physiology</td>
<td>1.11</td>
<td>7.45</td>
</tr>
<tr>
<td>Signs &amp; symptoms</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Surgical procedure</td>
<td>54.22</td>
<td>28.16</td>
</tr>
<tr>
<td>Preparing Surgery</td>
<td>65.18</td>
<td>37.57</td>
</tr>
<tr>
<td>Activity &amp; Exercise</td>
<td>43.06</td>
<td>16.33</td>
</tr>
<tr>
<td>Pain Management</td>
<td>2.22</td>
<td>14.91</td>
</tr>
<tr>
<td>Diet</td>
<td>31.56</td>
<td>24.67</td>
</tr>
<tr>
<td>Complication</td>
<td>58.89</td>
<td>32.49</td>
</tr>
<tr>
<td>General Information</td>
<td>64.44</td>
<td>27.89</td>
</tr>
<tr>
<td>Overall Knowledge</td>
<td>42.81</td>
<td>12.41</td>
</tr>
</tbody>
</table>

Note: *** - P <0.001 level of significant

Table-8 reveals that the effectiveness of knowledge score of participants on TKR (mean =42.81, SD=12.41) was significant at P<0.001 level. Hence the research hypothesis H₁ was accepted.
Table – 9 Effective Attitude Score on Total Knee Replacement

<table>
<thead>
<tr>
<th>Effective Attitude Score</th>
<th>Descriptive Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effective Mean</td>
<td>36.39</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>9.69</td>
</tr>
<tr>
<td>Paired t value</td>
<td>$t = 25.190$</td>
</tr>
<tr>
<td>Significant P value</td>
<td>$P = 0.000$ Significant at $P&lt;0.001$</td>
</tr>
</tbody>
</table>

Table-9 shows that the effectiveness of attitude score of participants on TKR $(M = 36.39, SD=9.69)$ was significant at $P<0.001$. Hence the research hypothesis $H_1$ was accepted.
SECTION – V

This section deals with the distribution of existing level of practice of patients after TKR

Table -10 Mean & standard deviation of practice of patient after TKR

<table>
<thead>
<tr>
<th>Practice Score</th>
<th>Descriptive Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>85.48</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>5.91</td>
</tr>
<tr>
<td>Minimum score</td>
<td>66.67</td>
</tr>
<tr>
<td>Maximum score</td>
<td>93.33</td>
</tr>
</tbody>
</table>

Table-10 shows that the mean practice score was 85.48 and the Standard deviation was 5.91.
Figure -3 Level of existing practice among the participants undergoing total knee replacement.

Figure -3 shows that majority of the participants 43 (95.6%) were having good practice after total knee replacement. This shows that the visual education of exercises enhanced the practice of patients after TKR.
SECTION – VI

This section deals with the correlation between the knowledge, attitude and practice of patient.

Table – 11 Correlations between Knowledge, Attitude and Practice on Total Knee Replacement.

<table>
<thead>
<tr>
<th>Attitude</th>
<th>Knowledge Pre Test</th>
<th>Knowledge Post Test</th>
<th>Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>r-value &amp; P-value</td>
<td>r-value &amp; P-value</td>
<td>r-value &amp; P-value</td>
</tr>
<tr>
<td>Attitude Pre Test</td>
<td>r = 0.868</td>
<td>r = 0.773</td>
<td>r = 0.166</td>
</tr>
<tr>
<td></td>
<td>P = 0.000 ***</td>
<td>P = 0.000 ***</td>
<td>P = 0.274 (N.S)</td>
</tr>
<tr>
<td>Attitude Post Test</td>
<td></td>
<td></td>
<td>P = 0.274 (N.S)</td>
</tr>
<tr>
<td>Practice</td>
<td>r = 0.166</td>
<td>r = 0.223</td>
<td>P = 0.142 (N.S)</td>
</tr>
</tbody>
</table>

Note: *** -P<0.001 level of significant.

Table – 11 shows that there is a correlation between knowledge and attitude both in the pre-test & post test. It was significant at P<0.001 level.
This section deals with the association between selected demographic variables and pretest knowledge & attitude score of patient.

Table – 12 Associations between Level of Knowledge on Total Knee Replacement and Demographic Variables in Pre Test

<table>
<thead>
<tr>
<th>Demographic Variables</th>
<th>Inadequate Knowledge (0-50%)</th>
<th>Moderate Knowledge (51-75%)</th>
<th>Chi-Square value &amp; P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>n = 45</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age in years</th>
<th>N.</th>
<th>%</th>
<th>N.</th>
<th>%</th>
<th>Chi-Square &amp; P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) &lt; 50 yrs</td>
<td>4</td>
<td>100.0</td>
<td>0</td>
<td>0.0</td>
<td>( \chi^2 = 1.300, ) d.f. = 3, P=0.729 (N.S)</td>
</tr>
<tr>
<td>b) 51 – 60 yrs</td>
<td>9</td>
<td>75.0</td>
<td>3</td>
<td>25.0</td>
<td></td>
</tr>
<tr>
<td>c) 61 – 70 yrs</td>
<td>19</td>
<td>82.6</td>
<td>4</td>
<td>17.4</td>
<td></td>
</tr>
<tr>
<td>d) &gt; 70 yrs</td>
<td>5</td>
<td>83.3</td>
<td>1</td>
<td>16.7</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gender</th>
<th>N.</th>
<th>%</th>
<th>N.</th>
<th>%</th>
<th>Chi-Square &amp; P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Male</td>
<td>6</td>
<td>100.0</td>
<td>0</td>
<td>0.0</td>
<td>( \chi^2 = 1.497, ) d.f. = 1, P=0.221 (N.S)</td>
</tr>
<tr>
<td>b) Female</td>
<td>31</td>
<td>79.5</td>
<td>8</td>
<td>20.5</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Education</th>
<th>N.</th>
<th>%</th>
<th>N.</th>
<th>%</th>
<th>Chi-Square &amp; P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Primary</td>
<td>1</td>
<td>100.0</td>
<td>0</td>
<td>0.0</td>
<td>( \chi^2 = 0.763, ) d.f. = 2, P=0.683 (N.S)</td>
</tr>
<tr>
<td>b) High school</td>
<td>13</td>
<td>76.5</td>
<td>4</td>
<td>23.5</td>
<td></td>
</tr>
<tr>
<td>c) Hr. Sec.</td>
<td>23</td>
<td>85.2</td>
<td>4</td>
<td>14.8</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Occupation</th>
<th>N.</th>
<th>%</th>
<th>N.</th>
<th>%</th>
<th>Chi-Square &amp; P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Government</td>
<td>4</td>
<td>80.0</td>
<td>1</td>
<td>20.0</td>
<td>( \chi^2 = 2.096, ) d.f. = 3, P=0.553 (N.S)</td>
</tr>
<tr>
<td>b) Private</td>
<td>3</td>
<td>100.0</td>
<td>0</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td>c) Self employed</td>
<td>1</td>
<td>50.0</td>
<td>1</td>
<td>50.0</td>
<td></td>
</tr>
<tr>
<td>d) House wife</td>
<td>29</td>
<td>82.9</td>
<td>6</td>
<td>17.1</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Family income</th>
<th>N.</th>
<th>%</th>
<th>N.</th>
<th>%</th>
<th>Chi-Square &amp; P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) &lt; Rs.10000</td>
<td>6</td>
<td>60.0</td>
<td>4</td>
<td>40.0</td>
<td>( \chi^2 = 4.637, ) d.f. = 3, P=0.200 (N.S)</td>
</tr>
<tr>
<td>b) Rs.10001 – 15000</td>
<td>28</td>
<td>87.5</td>
<td>4</td>
<td>12.5</td>
<td></td>
</tr>
<tr>
<td>c) Rs. 15001 – 20000</td>
<td>2</td>
<td>100.0</td>
<td>0</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td>d) &gt; Rs.20000</td>
<td>1</td>
<td>100.0</td>
<td>0</td>
<td>0.0</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Place of Residence</th>
<th>N.</th>
<th>%</th>
<th>N.</th>
<th>%</th>
<th>Chi-Square &amp; P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Urban</td>
<td>22</td>
<td>84.6</td>
<td>4</td>
<td>15.4</td>
<td>( \chi^2 = 0.241, ) d.f. = 1, P=0.623 (N.S)</td>
</tr>
<tr>
<td>b) Rural</td>
<td>15</td>
<td>78.9</td>
<td>4</td>
<td>21.1</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of Family</th>
<th>N.</th>
<th>%</th>
<th>N.</th>
<th>%</th>
<th>Chi-Square &amp; P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Joint</td>
<td>5</td>
<td>100.0</td>
<td>0</td>
<td>0.0</td>
<td>( \chi^2 = 1.216, ) d.f. = 1</td>
</tr>
<tr>
<td>b) Nuclear</td>
<td>32</td>
<td>80.0</td>
<td>8</td>
<td>20.0</td>
<td></td>
</tr>
</tbody>
</table>
Table-12 reveals that there was an association between the level of knowledge and selected demographic variables like duration of knee osteoarthritis & previous exposure of information on TKR in pre-test. It was significant at P<0.01 and P<0.001 level. Hence the research hypothesis H2 was accepted.
Table – 13 Associations between Level of Attitude on Total Knee Replacement and Demographic Variables in Pre Test

n = 45

<table>
<thead>
<tr>
<th>Demographic Variables</th>
<th>Low Attitude (0 -50%)</th>
<th>Moderate Attitude (51-75%)</th>
<th>Chi-Square value &amp; P value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N.</td>
<td>%</td>
<td>N.</td>
</tr>
<tr>
<td>1. Age in years</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) &lt; 50 yrs</td>
<td>4</td>
<td>100.0</td>
<td>0</td>
</tr>
<tr>
<td>b) 51 – 60 yrs</td>
<td>9</td>
<td>75.0</td>
<td>3</td>
</tr>
<tr>
<td>c) 61 – 70 yrs</td>
<td>17</td>
<td>73.9</td>
<td>6</td>
</tr>
<tr>
<td>d) &gt; 70 yrs</td>
<td>3</td>
<td>50.0</td>
<td>3</td>
</tr>
<tr>
<td>2. Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Male</td>
<td>4</td>
<td>66.7</td>
<td>2</td>
</tr>
<tr>
<td>b) Female</td>
<td>29</td>
<td>74.4</td>
<td>10</td>
</tr>
<tr>
<td>3. Education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) Primary</td>
<td>1</td>
<td>100.0</td>
<td>0</td>
</tr>
<tr>
<td>c) High school</td>
<td>12</td>
<td>70.6</td>
<td>5</td>
</tr>
<tr>
<td>d) Hr. Sec.</td>
<td>20</td>
<td>74.1</td>
<td>7</td>
</tr>
<tr>
<td>4. Occupation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) Government</td>
<td>3</td>
<td>60.0</td>
<td>2</td>
</tr>
<tr>
<td>c) Private</td>
<td>2</td>
<td>66.7</td>
<td>1</td>
</tr>
<tr>
<td>d) Self employed</td>
<td>0</td>
<td>0.0</td>
<td>2</td>
</tr>
<tr>
<td>e) House wife</td>
<td>28</td>
<td>80.0</td>
<td>7</td>
</tr>
<tr>
<td>5. Family income</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) &lt; Rs.10000</td>
<td>4</td>
<td>40.0</td>
<td>6</td>
</tr>
<tr>
<td>b) Rs.10001 – 15000</td>
<td>27</td>
<td>84.4</td>
<td>5</td>
</tr>
<tr>
<td>c) Rs.15001 – 20000</td>
<td>1</td>
<td>50.0</td>
<td>1</td>
</tr>
<tr>
<td>d) &gt; Rs.20000</td>
<td>1</td>
<td>100.0</td>
<td>0</td>
</tr>
<tr>
<td>6. Place of Residence</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Urban</td>
<td>20</td>
<td>76.9</td>
<td>6</td>
</tr>
<tr>
<td>b) Rural</td>
<td>13</td>
<td>68.4</td>
<td>6</td>
</tr>
<tr>
<td>7. Type of Family</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Joint</td>
<td>5</td>
<td>100.0</td>
<td>0</td>
</tr>
<tr>
<td>b) Nuclear</td>
<td>28</td>
<td>70.0</td>
<td>12</td>
</tr>
<tr>
<td>8. Marital Status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Married</td>
<td>32</td>
<td>72.7</td>
<td>12</td>
</tr>
<tr>
<td>d) Widow / Widower</td>
<td>1</td>
<td>100.0</td>
<td>0</td>
</tr>
</tbody>
</table>
9. **Religion**
   a) Hindu  
   b) Christian  
   c) Muslim  

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>30</td>
<td>75.0</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>75.0</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0.0</td>
<td>1</td>
</tr>
</tbody>
</table>

\[ \chi^2 = 2.812, \quad \text{d.f} = 2 \]

P=0.245 (N.S)

10. **No of Years Suffering**
   a) < 3 yrs  
   b) 3 – 6 yrs  
   c) 6 – 9 yrs  
   d) > 9 yrs  

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4</td>
<td>80.0</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>19</td>
<td>79.2</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>81.8</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>20.0</td>
<td>4</td>
</tr>
</tbody>
</table>

\[ \chi^2 = 8.209, \quad \text{d.f} = 3 \]

P=0.042 *

11. **Family History**
   a) Yes  
   b) No  

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3</td>
<td>100.0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>30</td>
<td>71.4</td>
<td>12</td>
</tr>
</tbody>
</table>

\[ \chi^2 = 1.169, \quad \text{d.f} = 1 \]

P=0.280 (N.S)

12. **If yes**
   a) Parents  
   b) Other relations  
   c) No family history  

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
<td>100.0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>100.0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>30</td>
<td>71.4</td>
<td>12</td>
</tr>
</tbody>
</table>

\[ \chi^2 = 1.169, \quad \text{d.f} = 2 \]

P=0.557 (N.S)

13. **Previous Exposure**
   a) Yes  
   b) No  

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4</td>
<td>36.4</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>29</td>
<td>85.3</td>
<td>5</td>
</tr>
</tbody>
</table>

\[ \chi^2 = 10.175, \quad \text{d.f} = 1 \]

P=0.001 **

14. **If yes**
   a) Health Professionals  
   b) No Exposure  

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4</td>
<td>36.4</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>29</td>
<td>85.3</td>
<td>5</td>
</tr>
</tbody>
</table>

\[ \chi^2 = 10.175, \quad \text{d.f} = 1 \]

P=0.001 **

Note: * - P<0.05, *** - P<0.001 Level of Significant, N.S. – Not Significant

Table – 13 shows that there was an association between level of attitude and selected demographic variable like duration of knee osteoarthritis & previous exposure of information on TKR in pre-test. It was significant at P<0.001 level. Hence the research hypothesis H2 was accepted.
This section deals with the association between selected demographic variable with post-test knowledge, attitude and practice of patient.

Table – 14 Associations between Level of Knowledge on Total Knee Replacement and Demographic Variables in Post Test.  

<table>
<thead>
<tr>
<th>Demographic Variables</th>
<th>Moderate Knowledge (51-75%)</th>
<th>Adequate Knowledge (75-100%)</th>
<th>Chi-Square value &amp; P value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N.</td>
<td>%</td>
<td>N.</td>
</tr>
<tr>
<td>1. Age in years</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) &lt; 50 yrs</td>
<td>1</td>
<td>25.0</td>
<td>3</td>
</tr>
<tr>
<td>b) 51 – 60 yrs</td>
<td>1</td>
<td>8.3</td>
<td>11</td>
</tr>
<tr>
<td>c) 61 – 70 yrs</td>
<td>3</td>
<td>13.0</td>
<td>20</td>
</tr>
<tr>
<td>d) &gt; 70 yrs</td>
<td>0</td>
<td>0.0</td>
<td>6</td>
</tr>
<tr>
<td>2. Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Male</td>
<td>0</td>
<td>0.0</td>
<td>6</td>
</tr>
<tr>
<td>b) Female</td>
<td>5</td>
<td>12.8</td>
<td>34</td>
</tr>
<tr>
<td>3. Education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) Primary</td>
<td>0</td>
<td>0.0</td>
<td>1</td>
</tr>
<tr>
<td>c) High school</td>
<td>0</td>
<td>0.0</td>
<td>17</td>
</tr>
<tr>
<td>d) Hr. Sec.</td>
<td>5</td>
<td>18.5</td>
<td>22</td>
</tr>
<tr>
<td>4. Occupation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) Government</td>
<td>1</td>
<td>20.0</td>
<td>4</td>
</tr>
<tr>
<td>c) Private</td>
<td>0</td>
<td>0.0</td>
<td>3</td>
</tr>
<tr>
<td>d) Self employed</td>
<td>0</td>
<td>0.0</td>
<td>2</td>
</tr>
<tr>
<td>e) House wife</td>
<td>4</td>
<td>11.4</td>
<td>31</td>
</tr>
<tr>
<td>5. Family income</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) &lt; Rs.10000</td>
<td>1</td>
<td>10.0</td>
<td>9</td>
</tr>
<tr>
<td>b) Rs.10001 – 15000</td>
<td>4</td>
<td>12.5</td>
<td>28</td>
</tr>
<tr>
<td>c) Rs.15001 – 20000</td>
<td>0</td>
<td>0.0</td>
<td>2</td>
</tr>
<tr>
<td>d) &gt;Rs.20000</td>
<td>0</td>
<td>0.0</td>
<td>1</td>
</tr>
<tr>
<td>6. Place of Residence</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Urban</td>
<td>3</td>
<td>11.5</td>
<td>23</td>
</tr>
<tr>
<td>b) Rural</td>
<td>2</td>
<td>10.5</td>
<td>17</td>
</tr>
<tr>
<td>7. Type of Family</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------------------</td>
<td>----------</td>
<td>----------</td>
<td>----------</td>
</tr>
<tr>
<td>a) Joint</td>
<td>0</td>
<td>0.0</td>
<td>5</td>
</tr>
<tr>
<td>b) Nuclear</td>
<td>5</td>
<td>12.5</td>
<td>35</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>8. Marital Status</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>$\chi^2 = 0.128$, d.f = 1</th>
<th>P=0.721(N.S)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Married</td>
<td>5</td>
<td>11.4</td>
<td>39</td>
<td>88.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d) Widow / Widower</td>
<td>0</td>
<td>0.0</td>
<td>1</td>
<td>100.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>9. Religion</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>$\chi^2 = 0.956$, d.f = 2</th>
<th>P=0.620 (N.S)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Hindu</td>
<td>4</td>
<td>10.0</td>
<td>36</td>
<td>90.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) Christian</td>
<td>1</td>
<td>25.0</td>
<td>3</td>
<td>75.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c) Muslim</td>
<td>0</td>
<td>0.0</td>
<td>1</td>
<td>100.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>10. No of Years Suffering</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>$\chi^2 = 1.769$, d.f = 3</th>
<th>P=0.622 (N.S)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) &lt; 3 yrs</td>
<td>1</td>
<td>20.0</td>
<td>4</td>
<td>80.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) 3 – 6 yrs</td>
<td>2</td>
<td>8.3</td>
<td>22</td>
<td>91.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c) 6 – 9 yrs</td>
<td>2</td>
<td>18.2</td>
<td>9</td>
<td>81.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d) &gt; 9 yrs</td>
<td>0</td>
<td>0.0</td>
<td>5</td>
<td>100.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>11. Family History</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>$\chi^2 = 0.402$, d.f = 1</th>
<th>P=0.526 (N.S)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Yes</td>
<td>0</td>
<td>0.0</td>
<td>3</td>
<td>100.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) No</td>
<td>5</td>
<td>11.9</td>
<td>37</td>
<td>88.1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>12. If yes</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>$\chi^2 = 0.402$, d.f = 2</th>
<th>P=0.818 (N.S)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Parents</td>
<td>0</td>
<td>0.0</td>
<td>2</td>
<td>100.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d) Other relations</td>
<td>0</td>
<td>0.0</td>
<td>1</td>
<td>100.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e) No family history</td>
<td>5</td>
<td>11.9</td>
<td>37</td>
<td>88.1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>13. Previous Exposure</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>$\chi^2 = 1.820$, d.f =1</th>
<th>P=0.177 (N.S)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Yes</td>
<td>0</td>
<td>0.0</td>
<td>11</td>
<td>100.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) No</td>
<td>5</td>
<td>14.7</td>
<td>29</td>
<td>85.3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>14. If yes</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>$\chi^2 = 1.820$, d.f = 1</th>
<th>P=0.177 (N.S)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Health Professionals</td>
<td>0</td>
<td>0.0</td>
<td>11</td>
<td>100.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) No Exposure</td>
<td>5</td>
<td>14.7</td>
<td>29</td>
<td>85.3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: N.S. – Not Significant

Table – 14 reveals that there was no significant association between the demographic variable and the level of knowledge in post-test.
Table – 15 Associations between Level of Attitude on Total Knee Replacement and Demographic Variables in Post Test

<table>
<thead>
<tr>
<th>Demographic Variables</th>
<th>Moderate Attitude (51-75%)</th>
<th>High Attitude (75-100%)</th>
<th>Chi-Square value &amp; P value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N.</td>
<td>%</td>
<td>N.</td>
</tr>
<tr>
<td>1. Age in years</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) &lt; 50 yrs</td>
<td>1</td>
<td>25.0</td>
<td>3</td>
</tr>
<tr>
<td>b) 51 – 60 yrs</td>
<td>1</td>
<td>8.3</td>
<td>11</td>
</tr>
<tr>
<td>c) 61 – 70 yrs</td>
<td>4</td>
<td>17.4</td>
<td>19</td>
</tr>
<tr>
<td>d) &gt; 70 yrs</td>
<td>0</td>
<td>0.0</td>
<td>6</td>
</tr>
<tr>
<td>2. Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Male</td>
<td>0</td>
<td>0.0</td>
<td>6</td>
</tr>
<tr>
<td>b) Female</td>
<td>6</td>
<td>15.4</td>
<td>33</td>
</tr>
<tr>
<td>3. Education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) Primary</td>
<td>0</td>
<td>0.0</td>
<td>1</td>
</tr>
<tr>
<td>c) High school</td>
<td>0</td>
<td>0.0</td>
<td>17</td>
</tr>
<tr>
<td>d) Hr. Sec.</td>
<td>6</td>
<td>22.2</td>
<td>21</td>
</tr>
<tr>
<td>4. Occupation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) Government</td>
<td>0</td>
<td>0.0</td>
<td>5</td>
</tr>
<tr>
<td>c) Private</td>
<td>0</td>
<td>0.0</td>
<td>3</td>
</tr>
<tr>
<td>d) Self employed</td>
<td>0</td>
<td>0.0</td>
<td>2</td>
</tr>
<tr>
<td>e) House wife</td>
<td>6</td>
<td>17.1</td>
<td>29</td>
</tr>
<tr>
<td>5. Family income</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) &lt; Rs.10000</td>
<td>0</td>
<td>0.0</td>
<td>10</td>
</tr>
<tr>
<td>b) Rs.10001 – 15000</td>
<td>6</td>
<td>18.8</td>
<td>26</td>
</tr>
<tr>
<td>c) Rs. 15001 – 20000</td>
<td>0</td>
<td>0.0</td>
<td>2</td>
</tr>
<tr>
<td>d) &gt; Rs.20000</td>
<td>0</td>
<td>0.0</td>
<td>1</td>
</tr>
<tr>
<td>6. Place of Residence</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Urban</td>
<td>4</td>
<td>15.4</td>
<td>22</td>
</tr>
<tr>
<td>b) Rural</td>
<td>2</td>
<td>10.5</td>
<td>17</td>
</tr>
<tr>
<td>7. Type of Family</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Joint</td>
<td>0</td>
<td>0.0</td>
<td>5</td>
</tr>
<tr>
<td>b) Nuclear</td>
<td>6</td>
<td>15.0</td>
<td>34</td>
</tr>
<tr>
<td>8. Marital Status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Married</td>
<td>6</td>
<td>13.6</td>
<td>38</td>
</tr>
<tr>
<td>d) Widow / Widower</td>
<td>0</td>
<td>0.0</td>
<td>1</td>
</tr>
</tbody>
</table>
9. Religion
   a) Hindu  
      b) Christian
   c) Muslim

10. No of Years Suffering
   a) < 3 yrs  
      b) 3 – 6 yrs
   c) 6 – 9 yrs
   d) > 9 yrs

11. Family History
   a) Yes  
      b) No

12. If yes
   a) Parents  
      d) Other relations
   e) No family history

13. Previous Exposure
   a) Yes  
      b) No

14. If yes
   a) Health Professionals  
      b) No Exposure

Note: N.S. – Not Significant

Table – 15 reveals that there was no significant association between the demographic variable and the level of attitude in post – test.
Table -16 Associations between Level of Practice on Total Knee Replacement and Demographic Variables.

<table>
<thead>
<tr>
<th>Demographic Variables</th>
<th>Moderate Practice (51-75%)</th>
<th>Good Practice (75-100%)</th>
<th>Chi-Square value &amp; P value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N.</td>
<td>%</td>
<td>N.</td>
</tr>
<tr>
<td>1. Age in years</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) &lt; 50 yrs</td>
<td>1</td>
<td>25.0</td>
<td>3</td>
</tr>
<tr>
<td>b) 51 – 60 yrs</td>
<td>0</td>
<td>0.0</td>
<td>12</td>
</tr>
<tr>
<td>c) 61 – 70 yrs</td>
<td>0</td>
<td>0.0</td>
<td>23</td>
</tr>
<tr>
<td>d) &gt; 70 yrs</td>
<td>1</td>
<td>16.7</td>
<td>5</td>
</tr>
<tr>
<td>2. Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Male</td>
<td>0</td>
<td>0.0</td>
<td>6</td>
</tr>
<tr>
<td>b) Female</td>
<td>2</td>
<td>5.1</td>
<td>37</td>
</tr>
<tr>
<td>3. Education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) Primary</td>
<td>0</td>
<td>0.0</td>
<td>1</td>
</tr>
<tr>
<td>c) High school</td>
<td>0</td>
<td>0.0</td>
<td>17</td>
</tr>
<tr>
<td>d) Hr. Sec.</td>
<td>2</td>
<td>7.4</td>
<td>25</td>
</tr>
<tr>
<td>4. Occupation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) Government</td>
<td>0</td>
<td>0.0</td>
<td>5</td>
</tr>
<tr>
<td>c) Private</td>
<td>0</td>
<td>0.0</td>
<td>3</td>
</tr>
<tr>
<td>d) Self employed</td>
<td>0</td>
<td>0.0</td>
<td>2</td>
</tr>
<tr>
<td>e) House wife</td>
<td>2</td>
<td>5.7</td>
<td>33</td>
</tr>
<tr>
<td>5. Family income</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) &lt; Rs.10000</td>
<td>1</td>
<td>10.0</td>
<td>9</td>
</tr>
<tr>
<td>b) Rs.10001 – 15000</td>
<td>1</td>
<td>3.1</td>
<td>31</td>
</tr>
<tr>
<td>c) Rs. 15001 – 20000</td>
<td>0</td>
<td>0.0</td>
<td>2</td>
</tr>
<tr>
<td>d)&gt; Rs.20000</td>
<td>0</td>
<td>0.0</td>
<td>1</td>
</tr>
<tr>
<td>6. Place of Residence</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Urban</td>
<td>2</td>
<td>7.7</td>
<td>24</td>
</tr>
<tr>
<td>b) Rural</td>
<td>0</td>
<td>0.0</td>
<td>19</td>
</tr>
<tr>
<td>7. Type of Family</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Joint</td>
<td>1</td>
<td>20.0</td>
<td>4</td>
</tr>
<tr>
<td>b) Nuclear</td>
<td>1</td>
<td>2.5</td>
<td>39</td>
</tr>
<tr>
<td>8. Marital Status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Married</td>
<td>2</td>
<td>4.5</td>
<td>42</td>
</tr>
<tr>
<td>d) Widow / Widower</td>
<td>0</td>
<td>0.0</td>
<td>1</td>
</tr>
</tbody>
</table>
### 9. Religion

<table>
<thead>
<tr>
<th></th>
<th>Hindu</th>
<th>Christian</th>
<th>Muslim</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a)</td>
<td>2</td>
<td>5.0</td>
<td>38</td>
<td>95.0</td>
<td>(\chi^2 = 0.262,)</td>
<td></td>
</tr>
<tr>
<td>b)</td>
<td>0</td>
<td>0.0</td>
<td>4</td>
<td>100.0</td>
<td>d.f = 2</td>
<td></td>
</tr>
<tr>
<td>c)</td>
<td>0</td>
<td>0.0</td>
<td>1</td>
<td>100.0</td>
<td>P = 0.877 (N.S)</td>
<td></td>
</tr>
</tbody>
</table>

### 10. No of Years Suffering

<table>
<thead>
<tr>
<th></th>
<th>&lt; 3 yrs</th>
<th>3 – 6 yrs</th>
<th>6 – 9 yrs</th>
<th>&gt; 9 yrs</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a)</td>
<td>1</td>
<td>20.0</td>
<td>4</td>
<td>80.0</td>
<td>(\chi^2 = 4.757,)</td>
</tr>
<tr>
<td>b)</td>
<td>0</td>
<td>0.0</td>
<td>24</td>
<td>100.0</td>
<td>d.f = 3</td>
</tr>
<tr>
<td>c)</td>
<td>1</td>
<td>9.1</td>
<td>10</td>
<td>90.9</td>
<td>P = 0.190 (N.S)</td>
</tr>
<tr>
<td>d)</td>
<td>0</td>
<td>0.0</td>
<td>5</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

### 11. Family History

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Yes</td>
<td>0</td>
<td>0.0</td>
<td>3</td>
</tr>
<tr>
<td>b) No</td>
<td>2</td>
<td>4.8</td>
<td>40</td>
</tr>
</tbody>
</table>

### 12. If yes

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Parents</td>
<td>0</td>
<td>0.0</td>
<td>2</td>
</tr>
<tr>
<td>d) Other relations</td>
<td>0</td>
<td>0.0</td>
<td>1</td>
</tr>
<tr>
<td>e) No family history</td>
<td>2</td>
<td>4.8</td>
<td>40</td>
</tr>
</tbody>
</table>

### 13. Previous Exposure

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Yes</td>
<td>1</td>
<td>9.1</td>
<td>10</td>
</tr>
<tr>
<td>b) No</td>
<td>1</td>
<td>2.9</td>
<td>33</td>
</tr>
</tbody>
</table>

### 14. If yes

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Health Professionals</td>
<td>1</td>
<td>9.1</td>
<td>10</td>
</tr>
<tr>
<td>b) No Exposure</td>
<td>1</td>
<td>2.9</td>
<td>33</td>
</tr>
</tbody>
</table>

Note: * - P<0.05 Level of Significant, N.S. – Not Significant

Table – 16 reveals that there was an association between the demographic variable and the level of practice after TKR only in the age group. It was significant at P<0.05 level.
CHAPTER V

DISCUSSION

The present study was designed to assess the effectiveness of video assisted teaching module on knowledge, attitude and practice among the patients undergoing total knee replacement at MIOT Hospitals, Chennai. This study was carried out on 45 patients who underwent total knee replacement at MIOT Hospitals, Chennai. The effectiveness of video assisted teaching module on total knee replacement was assessed by post-test on the day of discharge.

Table -1 reveals the significant findings of the demographic variable, majority of the participants were females (86.7%). It could be interpreted with the incidence of knee osteoarthritis because females were mainly affected due to this disease. Most of the participants were in the age group of 61-70 years (51.1%), 60% of the participants were studied up to higher secondary, so it could be interpreted that the method of education could also be given through the handout, pamphlets or it can be mainly in the form of video assisted teaching module. Most of the participants have family income of Rs. 10,001 to Rs.15,000 (71.1%), 57.8% of the participants were living in urban, type of family mainly nuclear (88.9%) and 88.9% belong to Hindu. Majority of the participants were married (97.8%), duration of knee osteoarthritis was 3-6 years (53.3%), 93.3% of the participants have no family history and 75.6% participants did not have the previous exposure of information on total knee replacement. This showed that the majority of the participants need the education about total knee replacement.
The first objective of the study was to assess the existing knowledge and attitude of patient on total knee replacement. Table -3 reveals that 37(82.2%) of the participants had inadequate knowledge, 7 (15.6%) had moderate knowledge and 1 (2.2%) had adequate knowledge in the pre-test.

Figure -3 shows that 33(73.3%) of the participants had poor attitude, 12 (26.7%) had fair attitude, none of them had good attitude. This showed that there was a need for education on total knee replacement to the people who is undergoing TKR.

The second objective of the study was to assess the effectiveness of video assisted teaching module on knowledge and attitude of patient on total knee replacement.

The research hypothesis, H1, stated that there is a significant difference in the knowledge & attitude of patient regarding total knee replacement before and after administration of Video-assisted teaching module.

The level of knowledge among the patients undergoing total knee replacement in the pre-test was noted that 82.2% of the participants had inadequate knowledge whereas in the post-test 88.9% of the participants had gained adequate knowledge level. The level of attitude among the patients undergoing total knee replacement in the pre-test was noted that 33(73.3%) had poor attitude, whereas in the post-test 86.7% of participants had good attitude level. Table -8 reveals that the level of knowledge was effective mainly in the aspects of surgical procedure, Preparing for surgery, Diet, complication and general information on total knee replacement was significant at P<0.001 level. Table -9 reveals that the attitude score of patients on total knee replacement was effective and highly significant at P<0.001
level. It could be interpreted that this was mainly due to the education given to the patients regarding total knee replacement. Hence the research hypothesis $H_1$ was accepted.

Post-test revealed that majority of the participants had gained adequate knowledge and good attitude level. It could be interpreted that this was mainly due to education given to the participants about the total knee replacement through video assisted teaching module. The findings can also be supported by the study conducted by Lin PC et al (1997) to compare the effects of pre-admission and post-admission educational programme for patients with total knee arthroplasty. The research results found that the experimental group had a significantly higher knowledge level than the control group; the experimental group performed exercise more regularly and correctly than those in the control group; Pre-admission teaching with a videotape programme and a health manual for patients with total knee arthroplasty were recommended.

**The third objective of the study was to assess the existing practice of patient after total knee replacement.**

Figure -3 shows that 43(95.6%) of the participants had adequate practice. It could be compared with the Chinese proverb.

If I hear, I forget

If I see, I know

If I do, I remember

After the education on total knee replacement by video assisted teaching, the client has adequate practice of exercises after TKR. It could be supported by the study conducted by Scopaz et al (2009). He suggested that the patient who receives quadriceps strengthening
exercises would improve the movement of knee after total knee replacement and patient with osteoarthritis of knee.

The fourth objective of the study was to correlate between the knowledge, attitude and practice on total knee replacement. Table -11 reveals that there was a correlation between the knowledge and attitude both in pre-test & post test. It was significant at P<0.001 level. There was no correlation between the knowledge and practice of patient with total knee replacement. It could be interpreted that if the participants had an adequate knowledge they will develop a positive attitude towards the total knee replacement.

The fifth objective of the study was to associate between the demographic variables and knowledge, attitude and practice of patient with total knee replacement.

The research hypothesis, H₂, stated that there is a significant association between the knowledge & attitude of patient regarding total knee replacement with selected demographic variables in the pre-test.

The findings of the study showed that there was an association between the level of knowledge and attitude with selected demographic variable like duration of knee osteoarthritis and previous exposure of information on total knee replacement. It was significant at P<0.05 and P<0.001 level in the pre-test. Hence the research hypothesis H₂ was accepted. In the post-test there was no association between the level of knowledge and attitude with selected demographic variables. There was an association between the levels of practice with selected demographic variables only in the age group. It was significant at P<0.05 level.
Knee osteoarthritis made the life miserable to cause heavy health and economic burden around the world. Researcher aimed at improving the knowledge and to develop positive attitude of participants towards total knee replacement by providing video assisted teaching. Based on the results of the study the researcher found that video assisted teaching was an effective teaching method.
CHAPTER VI

SUMMARY, CONCLUSION, LIMITATIONS, NURSING IMPLICATIONS AND RECOMMENDATION

Summary

The present study was designed to assess the effectiveness of video assisted teaching module on knowledge, attitude and practice among the patients undergoing total knee replacement at MIOT Hospitals, Chennai.

The conceptual framework of this study was developed on the basis of Orem’s General theory of nursing model. An extensive review of literature on video assisted teaching & total knee replacement were made and the guidance by experts formed the foundation to the development of the study tools. An experimental research approach with pre-experimental one group pretest posttest design was used to achieve the objectives of the study. The present study was conducted at MIOT hospitals, Chennai, with a sample size of 45 patients. They were selected through non-probability convenient sampling technique. The investigator used a demographic variable proforma, 30 knowledge structured questionnaire, 10 attitude questions and practice observation check list on total knee replacement to collect the data. The data collection tools were validated and the reliability was established and the score was $r = 0.895$. After obtained formal permission the main study data collection was carried out for 6 weeks. After the pre-test, video assisted teaching module on total knee replacement was administered to the patients with total knee replacement. The post-test was done on 7th day. The collected data were tabulated and analyzed using descriptive and inferential statistics.
The significant findings of the demographic variable, majority of the participants were females (86.7%) in the age group of 61-70 years (51.1%) and 60% of the participants studied up to higher secondary. Most of the participants had family income of Rs. 10,001 to Rs. 15,000 (71.1%), 57.8% of the participants were living in urban, type of family mainly nuclear (88.9%) and 88.9% of the participants belong to Hindu. Majority of the participants (97.8%) were married, duration of knee osteoarthritis mainly 3-6 years (53.3%), 93.3% had no family history and 75.6% participants did not have the previous exposure of information on total knee replacement. The researcher found that majority of the participants needed education on TKR.

The level of knowledge among the patients undergoing total knee replacement in the pre-test was noted that 37 (82.2%) of the participants had inadequate knowledge, 7 (15.6%) of the participants had moderate knowledge and 1 (2.2%) of the participants had adequate knowledge whereas in the post-test none of them had inadequate knowledge and majority of them (88.9%) had gained adequate knowledge. It was also noted that there was a significant improvement in the post-test mean score (M=86.96, SD =8.09) in comparison with the pre-test scores (M=44.15, SD =10.99) with the ‘t’ value of 23.143. It was statistically significant at P<0.001 level. There was a significant association between the demographic variables and the pre-test level of knowledge and attitude whereas in the post-test there was no significant association. It was noted that there was an association between the practice with selected demographic variable only in the age group was significant at P<0.05 level. Hence the research hypothesis H1 and H2 was accepted.
Conclusion

The major conclusion was drawn from this study is that the video assisted teaching module on total knee replacement had significantly improved the level of knowledge (88.9%) and attitude (86.7%) of patient with total knee replacement. This study also revealed that video assisted teaching module was an effective tool to impart the knowledge & developing positive attitude and practice on total replacement.

Limitations

- The study was limited to patients undergoing total knee replacement at MIOT hospitals. So the findings cannot be generalized.
- The study was limited to patients in C1 and C2 ward at MIOT hospitals. So the findings cannot be generalized.
- The study was limited to patients in In-patient department.
- The period of data collection was limited to 6 weeks.
- Convenient sampling technique was selected due to inadequacy of sample.

Nursing implications

The implications drawn from the study are vital concern for clinical nurse practitioner, nurse educators, administrator and researchers.

Nursing practice

In clinical nursing practice, the video-assisted teaching module can be utilized for the clients who underwent total knee replacement in empowering them with knowledge and help to necessitate the clients assume greater responsibility on their operated knee and prevention of dislocation, stiffness of the knee etc. It is also necessary to equip the nursing personnel to
motivate and educate the clients on care for their operated knee which will reduce the postoperative complications among the patients underwent total knee replacement. In the hospital, the protocols can be prepared regarding pre-operative and post-operative care of the patient undergoing total knee replacement and it can be utilized after validation.

**Nursing education**

The nursing curriculum has prescribed health education which was an integral part of the nursing care. Health education is more effective when the facts are expressed with visual cues and health care trends. Nursing education should be focused on the importance of video assisted teaching among the students. Hence the nurse educator should educate the students about total knee replacement and motivate the students to prepare video assisted teaching material for quality assured nursing care. Nurse educators should take initiatives to publish certain articles in journals related to the importance of video assisted teaching regarding total knee replacement.

**Nursing administration**

With the technological advances and the ever-growing challenges of health care needs, the administrators have a responsibility to provide nurses with substantive continuing education opportunities by conducting in-service education. This will enable the nurses to update their knowledge, acquire special skills to demonstrate high quality care. Nurse administrator should take the initiative in organizing video-educational programs on total knee replacement. Nurse administrators should collaborate with governing bodies in formulating policies and protocols to emphasize nursing care of client who underwent total knee replacement.
Nursing research

There is a need for extensive and intensive research regarding total knee replacement because a lot of people are affected with osteoarthritis of knee. It opens a big avenue for innovative methods of osteoarthritis management focus on patient’s interest in quality and safety, so as to generate more scientific database in order to manage the client with total knee replacement. The nurse researchers have to realize the needs to be responsible for the changing health care needs of the consumer by developing and testing educational tools that facilitate effective learning particularly in the concept of total knee replacement. The nurse researchers should conduct various researches on total knee replacement and she should publish it in various journals that will help the future nurse researchers.

Recommendations

• A similar study could be replicated by employing a large sample.

• A study can be done to compare the knowledge and practice among the patient undergoing total knee replacement.

• A study could be done to assess the risk factors for osteoarthritis.

• An observational study could be done to assess the effects of post operative exercises among the patients undergoing total knee replacement.

• A comparative study could be done to assess the effectiveness of lecture method versus video-assisted teaching among the patients undergoing total knee replacement.

• The study can be conducted in different settings with similar facilities.

• A similar study can be conducted by using true experimental design.
REFERENCES


APPENDIX-A

LETTER SEEKING PERMISSION TO CONDUCT THE STUDY

From
Prof. Mrs. Anigrace Kalaimathi,
M.Sc., (N), PGDNA., DQA
Principal.

To
Dr. Barry D’ Rosario,
Director of Department of Total Knee Replacement and Computer Navigation,
MIOT Hospitals,
Chennai

Dear Sir/Madam,

Ms. T. Mugeshwari, M.Sc., (N) II year student is going to do a research on "A Study to assess the effectiveness of video-assisted teaching module on knowledge, attitude and practice among the patients undergoing total knee replacement at MIOT Hospitals Chennai". So, I request you kindly allow her to do the project in your department.

Thanking you.

Sincerely,

Prof. Mrs. S. Ani Grace Kalaimathi.
April 16, 2010

Prof. Mrs. Anigrace Kalaimathi
M.Sc., (G), PGDNA, DQA
Principal.

Dear Madam,

Ms. T. Mugeshwari, M.Sc., (N) II year may most certainly do a research on "A study to assess the effectiveness of video-assisted teaching module on knowledge, attitude and practice among the patients undergoing total knee replacement" at MIOT Hospitals, Chennai.

With regards,

Yours sincerely,

[Signature]

DR. BARRY D’ROSARIO
Director of Department of Total Knee Replacement
And Computer Navigation.
APPENDIX -B

RESEARCH PARTICIPANT CONSENT FORM

Dear participant,

I, Ms.T.Mugeshwari II year M.Sc Nursing student, MIOT College of nursing, Chennai.

As a part of my studies, I am interested to do “A study to assess the effectiveness of video-assisted teaching module on knowledge, attitude and practice among the patients undergoing total Knee replacement at MIOT Hospitals Chennai”. The information which you are giving will be kept confidential and will be used only for this study. I hereby seek your consent and co-operation to participate in this study by answering my questions honestly and state your willingness to participate in this study.

Thanking you,

Signature of the investigator

CONSENT FROM THE PARTICIPANT

I understand the purpose of this study and I am willing to participate in this study.

Signature of the Participant

Place:

Date:
APPENDIX -C
PART – I
Tool for assessing knowledge, attitude and practice
On total knee replacement

**Instruction**

Please read every question carefully and put tick mark and indicate the response that you choose.

**Demographic variables**

1. **Age**
   1. < 50 years
   2. 51 – 60 yrs
   3. 61 – 70 yrs
   4. > 71 yrs

2. **Sex**
   1. Male
   2. Female

3. **Educational Status**
   1. Illiterate
   2. Primary education (1<sup>st</sup> - 5<sup>th</sup>)
   3. high school (6<sup>th</sup> - 10<sup>th</sup>)
   4. higher secondary (11<sup>th</sup> & 12<sup>th</sup>)
   5. Degree / Diploma / Professionals

4. **Occupation**
   1. Unemployed
   2. Government
   3. Private
   4. Self employed
   5. House wife

5. **Monthly Income**
   1. < Rs.10000
   2. Rs. 10000– 15000
   3. Rs.15000 – 20000
   4. > Rs.20000

6. **Place of residence**
   1. Urban
   2. Rural

7. **Type of family**
   1. Joint
   2. Nuclear

8. **Marital Status**
   1. Married
   2. Unmarried
   3. Divorce
   4. Widow / Widower

9. **Religion**
   1. Hindu
2. Christian
3. Muslim
4. Other religion

10. For how many years you have been suffering from arthritis of knee?
   1. < 3 years
   2. 3-6 years
   3. 6-9 years
   4. > 9 yrs

11. Do you have family history of arthritis of knee?
   1. Yes
   2. No
      If yes
      1. Parents
      2. Siblings
      3. Maternal / Paternal parents
      4. Other blood relations

12. Do you have previous exposure to information on TKR?
   1. Yes
   2. No
   If yes, from whom?
      1. Doctor / Nurses / Other health Care professional / friends & relatives
      2. Newspaper / Magazine / Journals / Television / Radio / Internet

PART – II
KNOWLEDGE

Anatomy & Physiology
1. What is knee joint?
   a. Joint of humerus and radial bone
   b. Joint of femur and tibia, patella bone
   c. Joint of tibia and ankle bone
   d. None
2. What is the function of knee joint?
   a. contractility
   b. stability and mobility
   c. productivity
   d. sensitivity

Signs and symptoms
3. Which one is the common symptom of severe knee osteoarthritis?
   a. swelling of the joint and knee pain
   b. giddiness
   c. fever
   d. dyspnea.

Surgical procedure
4. What is total knee replacement?
   a. Only femur replaced with artificial material
   b. femur, tibia & patella replaced with artificial material
   c. Only tibia replaced with artificial materials
   d. None
5. Which type of patients should consider TKR?
   a. Patient with severe knee osteoarthritis
b. Patient with mild arthritis  
c. Patient with angina  
d. None  
6. In which complaint the patient should not undergo TKR?  
a. nausea  
b. chest pain  
c. headache  
d. loss of appetite  
7. In which condition the patient should not undergo TKR?  
a. dental caries  
b. constipation  
c. diarrhea  
d. gastritis  
8. Artificial knee is made up of  
a. Plastic piece & metal stem  
b. Rubber piece  
c. Only plastic piece  
d. None  
Preparing for surgery  
9. What type of drug should be avoided one week before the surgery?  
a. Ranitidine  
b. aspirin&clopilet  
c. paracetamol  
d. co-trimazxole  
10. What type of investigation should be done before TKR?  
a. Troponin-T test  
b. Liver & renal function test  
c. Treadmill test  
d. Widal test  
11. What should be avoided before surgery?  
a. Herbal products for seven days before surgery.  
b. drinking plenty of water  
c. fasting for 12 hrs.  
d. None  
Activity and exercise  
12. What type of activity you can have during 1st post operative day?  
a. Continuous passive motion  
b. Leg raising exercises  
c. Stair climbing  
d. None  
13. When you can walk after TKR?  
a. Immediately after the surgery  
b. First 4-8 hours after the surgery  
c. 1 week after the surgery  
d. 2-3 weeks after the surgery  
14. What movements should be avoided after TKR?  
a. Walking  
b. Squatting
c. sitting in the chair
d. Straight leg raising

15. What exercises can be performed one month after TKR?
   a. kegel exercise.
   b. Quadriceps sets
   c. jumping
   d. Swimming

16. Which activity is suitable for first 3 months after surgery?
   a. Walking & cycling
   b. dancing
   c. Golf
   d. gardening

17. What type of activity is not recommended after TKR?
   a. gardening
   b. Swimming
   c. walking
   d. Running

18. When do you use the knee immobilizer?
   a. Immediately after the surgery
   b. Wear only when ambulating until straight leg raising can be done independently
   c. 2-3 weeks after the surgery
   d. None of the above

19. when can you resume your sexual activity after TKR?
   a. Immediately after the surgery
   b. 2 weeks after the surgery
   c. 4-6 weeks after the surgery
   d. None

Pain management
20. How do you manage your pain after surgery?
   a. Taking analgesics
   b. Drinking warm milk
   c. Assessing pain scale
   d. None of the above

Diet
21. What type of diet should be taken after TKR?
   a. vitamin A
   b. vitamin K
   c. vitamin C & Iron rich diet
   d. vitamin B-complex

22. What type of diet should be taken for bone healing?
   a. Fibre rich diet
   b. Iron rich diet
   c. Calcium rich diet
   d. Mineral diet

23. What type of diet should be taken for tissue healing & muscle strengthening?
   a. Rich calorie diet
   b. Rich protein diet
   c. Vitamin K diet
d. Vitamin A diet

24. What type of diet you should take to build haemoglobin level in blood?
   a. Fibre rich diet
   b. Iron rich diet
   c. Vitamin C diet
   d. Rich calorie diet

25. What type of diet should be avoided after TKR?
   a. Rich calorie diet
   b. Rich fibre diet
   c. Rich vitamin C and Iron
   d. Vitamin K diet

Complication

26. Which one is the major complication of TKR?
   a. Pulmonary embolism & Blood clots
   b. Headache
   c. fever
   d. Nausea and vomiting

27. Which one is the late complication of TKR?
   a. swelling of knee
   b. Dislocation of artificial knee
   c. Fever
   d. Headache

General information

28. How much of weight you can lift after TKR?
   a. More than 11 Kg
   b. More than 20 Kg
   c. less than 11 Kg
   d. More than 25 Kg

29. Which condition lead to loosening or dislocation of artificial knee after TKR?
   a. Hypertension
   b. Diabetes
   c. Obesity
   d. Myocardial infarction

30. When to contact your doctor?
   a. Pain in the chest
   b. nausea
   c. Headache
   d. don't know.

KEY ANSWERS:
## PART-III
### ATTITUDE OF PATIENT ON TOTAL KNEE REPLACEMENT

<table>
<thead>
<tr>
<th>S.No</th>
<th>Content</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly disagree</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Severe osteoarthritis of knee will lead to total knee replacement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Trauma to the knee joint requires total knee replacement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Continuous passive motion exercise will help to mobilize your knee</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Walking immediately 4 hours after surgery is good</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Swimming and running 1 week after the surgery is good</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Vitamin K diet is advisable after surgery</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Stair climbing above 7 inches is recommended after surgery</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Quadriceps sets and straight leg raising exercises are good for knee mobilization</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Squatting position is advisable after surgery</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Sexual activity is advisable after 1 week of surgery</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
PART-IV
PRACTICE OBSERVATION CHECK LIST

1. Patient in continuous passive motion on the day of surgery.
   a. yes   b. No

2. Patient is walking 6-8 hours after surgery.
   a. yes   b. No

3. Patient is sitting in the chair during first post-operative day.
   a. yes   b. No

4. Patient is performing quadriceps sets exercise on the day of surgery (10 times in 2 minutes).
   a. yes   b. No

5. Patient is performing ankle pumps exercise on the day of surgery (2-3 times in an hour).
   a. yes   b. No

6. Patient is walking with the help of parallel bar during 1st or 2nd post-operative day.
   a. yes   b. No

7. Patient is performing high sitting knee flexion on 3rd day after surgery.
   a. yes   b. No

8. Patient is bending knee on 3rd post-operative day.
   a. yes   b. No

9. Patient is doing bed supported knee bends on 3rd day after surgery.
   a. yes   b. No

10. Patient is performing sitting supported knee bends on 3rd day after surgery.
    a. yes   b. No

11. Patient is performing sitting unsupported knee bends on 3rd day after surgery.
    a. yes   b. No

12. Patient is performing straight leg raising exercise on 4th day after surgery.
    a. yes   b. No

13. Patient is performing knee strengthening exercise on 4th day after surgery.
    a. yes   b. No

14. Patient is climbing stairs on 7th day after surgery.
    a. yes   b. No

15. Patient is climbing stairs with the help of hand rail.
    a. yes   b. No
APPENDIX-D
Koq;fhy; %l;L mWit rpfpr;ir mwptJ;jpwd; gw;wpa Nfs;tpfs;
gFjp-I
fPo;fz;l xt;nthU $w;WfSf;Fk; rhpahd gjpiy FwpapLf:
Ra r%f Fwp;Gfs;
1. taJ
   m. 50;f fPo;
   M. 51 - 50
   .. 61 - 70
   <. 70;F Nky;
2. ghypdk;
   m. Mz;
   M. ngz;
3. fy;tpj; jFjp
   m. gbF fhjth;
   M. Muk;g fy;tp
   .. cah;epiy fy;tp
   <. Nky;epiy; fy;tp
   c. gl;lg; gbG / gl;lak; / njhopw;fy;tp
4. nhjopy;
   m. Ntiy ,y;yhjth;
   M. murhq;f Ntiy
   .. jdpahh; Ntiy
   <. Ra Ntiy
   c. FLk;gj; jiytp
5. khj tUkhdk;
   m. &. 10>000 fPo;
   M. &. 10>000-15>000
   .. &.15>000-20>000
   <. &. 20>000 f;F Nky;
6. trpf;Fk; ,lk;
   m. efh;Gwk;
   M. fpuhkg;Gwk;
7. FLk;g tif
m. $1;Lf; FLk;gk;
M. jdpf;FLk;gk;

8. jpUkzj; jFjp
m. jpUkzkh;dh;
M. jpUkzkhfhjth;
. tpthfu;J ngw;wth;
<. fztd; / kidtp ,oe;jth;

9. kjk;
m. ,e;J
M. fpwp];jth;
. K];yPk;
<. gpwkjj;jtH

10. vj;jid tUlj;fshf cq;fSf;F Koq;fhy; %l;Ltyp cs;sJ?
m. 3 tUlj;fSf;F fPo;
M. 3-6 tUlk;
. 6-9 tUlk;
<. 9 tUlj;fSf;F Nky;

11. cq;fs; guk;guaply; ahUf;FhtJ Koq;fhy; %l;Ltyp cs;sjh?
m. Mk;
M. ,y;iy
Mk; vdpy; ahUf;F vd;W Fwpg;gplTk;?
m. ngw;Nwhh;
M. cld; gpwe;Njhh;
. jha;top / je;ij top nghpNahh;fs;
<. gpw ,uj;j cwt;phd;fs;

12. cq;fSf;F .jw;F Kd;G Koq;fhy; %l;L mWit rpfpr;ir gw;wpa tpguq;fs; njhpAkh?
m. Mk;
M. ,y;iy
Mk; vdpy; ahk; %yk; vd;W Fwpg;gplTk;

1. kUj;Jth; / nrtypah; / kw;w Rfhjhu ey gl;ljhhpfs; / ez;gh; kw;Wk; cwt;phd;fs;
2. nra;jpji;hs; / gj;jphpf;if / [h;dy; / njhiyf; fhl;rp / thndhyp / ,izajsk;.
Koq;fhy; %l;L mWit rpfpr;ir mwpTj;jpwd; gw;wpa Nfs;tpfs;  
gFjp-II  
mwpTj;jpwd;  

clw;Swpay; kw;Wk; cly; E}y; gw;wpa Nfs;tpfs;  
1. Koq;fhy; %l;L vd;why; vd;d?  
m. if vYk;G kw;Wk; Koq;if %l;L Nrh;e;jJ  
M. njhil vYk;G> fPo;fhy; vYk;G kw;Wk; Kl;bahy; MdJ  
,. fPo;fhy; kw;Wk; fZf;fhy; vYk;G Nrh;e;jJ  
<. xd;Wk; ,y;iy.  
2. Koq;fhy; %l;bd; gad; vd;d?  
m. RUq;Fk; jd;ikf;F cjTjy;  
M. jplepiy kw;Wk; cly; mirtpw;F cjTjy;  
,. Mf;f tsj;jpw;F cjTk;  
<. Sh;e;jwpAk; jpwDf;F cjTk;  
Koq;fhy; typapd; mwpFwpfs;  
3. fPo;fz;ltw;wpy; kpfTk; ghjpf;fg;gl;l Koq;fhy; %l;L typapd; nghJtd mwpFwpfs; vd;d?  
m. %l;L tPf;fk; kw;Wk; Koq;fhy; typ  
M. jiyr; Rw;wy;  
,. fha;r;ry;  
<. %r;Rj;jpdwy;  
%l;L mWit rpfpr;ir gw;wpa Nfs;tpfs;  
4. Koq;fhy; %l;L mWit rpfpr;ir vd;why; vd;d?  
m. njhil vYk;gpy; kl;Lk; nraw;if %l;L mikj;jy;  
M. njhil vYk;G> Kl;b kw;Wk; fPo;fhy; vYk;gpy; nra;if %l;L nghUs; mikj;jy;  
,. fPo;fhy; vYk;gpy; kl;Lk; nraw;if nghUs; mikj;jy;  
<. xd;Wk; ,y;iy.  
5. ve;j tifahd NehahspfSf;F Koq;fhy; %l;L mWit rpfpr;ir nra;a Ntz;Lk;?  
m. kpfTk; ghjpf;fg;gl;l Koq;fhy; %l;L tPf;fk; cs;s Nehahspfs;  
M. Fiwthf ghjpf;fg;gl;l Koq;fhy; %l;L tPf;fk; cs;sth;fs;  
,. neQ;Rtyp cs;s Nehahspfs;  
<. xd;Wk; ,y;iy.  
6. ve;j mwpFwpfs; ,Ue;jhy; Nehahspfs; %l;L mWit rpfpr;ir Nkw;nfhs;sf; $lhJ?  
m. the;jp tUjhf czh;jy;  
M.neQ;Rtyp
7. veijtpjkhk Neha; Uejhy; Nehahspfs; %l;L mwit rpfpr;ir Nkw;nfhs;sf; $lhJ?
   m. G+r;rg;gy; Uejhy;
   M. kyr;rf;fy;
   .. tapw;Wg; Nghf;F
   <. tapw;Wg; Gz;
8. nraw;if Koq;fh;y; %l;L vd;why; vd;d?
   m. gpsh;b;f; kw;Wk; ,Uk;ghy; nra;j nraw;if %l;L
   M. ug;gh; %l;L
   .. gpsh;b;f; %l;L
   <. xd;Wk; .y;iy.

Koq;fh;y; %l;L mwit rpfpr;irF Kd; nra;a Ntz;bait
9. vej tifahd kUe;Jfis Koq;fh;y; %l;L mwit rpfpr;ir nra;tw;jw;F xU thuj;jpw;F Kd; jtpf;f;f
   Ntz;Lk;?
   m. uhdpbBd;
   M. M;j;gphd; kw;Wk; FNyhgpyl;
   .. ghuj;p;lkhy;
   <. Nfhl;hpkff;rNrhjy;
10. vej tifahd ghpNrhjids; %l;L mwit rpfpr;irF Kd; nra;a Ntz;Lk;?
    m. LNuhg;Nghdpd;-b ghpNrhj
    M;fy;yPuy; kw;Wk; rpWePufg; ghpNrhj
    .. bul;kpy; ghpNrhj
    <. iathy; ghpNrhj
11. fPo; fz;ltw;wp;y; Koq;fh;y; %l;L mwit rpfpr;irF VO ehl;fSf;F Kd; vij jtpf;f;f Ntz;Lk;?
    m. %ypif kUe;Jfis jtpf;f;jTk;
    M. mjpfkhd jz;Ph; mUe;Jy;
    .. czT cz;zhky; ,Uj;jy;
    <. xd;Wk; .y;iy.

nray;fs; kw;Wk; elw;gapw;rpf;$
12. mwit rpfpr;irF gpd; Kjy; ehs; vej tifahd nray;fis ePq;fs; Nkw;nfhs;s Ntz;Lk;?
mWit rpfp;irF gpd; eh;F Kjy; MW thuj; jpw;F gpwF  
<. xd; Wk; ; y;iy.

%l;L typia ePF;F nra;F Ntz;bait
20. mWit rpfp;irF gpd; tUk; typia Fiwf;f Nkw; nfhs;s Ntz;bait?  
m. typ ePF;Fk; kUe;ij cl; nfhs; Sjy;  
M. kpjkhd R+l; by; ghy; mUe; Jjy;  
<. typapd; msit Nhjpp;jy;  
<. xd; Wk; ; y;iy.

czT Kiwfs;
21. %l;L mWit rpfp;irF gpd; vLj; Jf; nfhs;s Ntz; ba czTfs; vit?  
m. itl;lkpd; - v  
M. itl;lkpd; - Nf  
<. itl;lkpd; - rp kw; Wk; ; Uk; G rj; J epiwe;j czT  
<. itl;lkpd; - gp
22. vYk; ig tYg; glLj;j ve;j tifahd czTfs vLj; Jf; nfhs;s Ntz; Lk;;?  
m. ehh; rj; J epiwe;j czT  
M. , Uk; G rj; J epiwe;j czT  
<. fhy; rpak; epiwe;j czT  
<. kpduy; fs; epiwe;j czT
23. rij kw; Wk; jiria tYg; glLj;j ve;j tifahd czTfs vLj; Jf; nfhs;s Ntz; Lk;;?  
m. fNyhhp epiwe;j czT  
M. Gujr;rj; J epiwe;j czT  
<. itl;lkpd; - Nf epiwe;j czT  
<. itl;lkpd; - v epiwe;j czT
24. ,uj;jj;jpy; `PNkhFNshgpd; msit mjpfhp; f ve;j tifahd czit vLj; Jf; nfhs;s Ntz; Lk;;?  
m. ehh; rj; J epiwe;j czT  
M. , Uk; Gr;rj; J epiwe;j czT  
<. itl;lkpd; - rp epiwe;j czT  
<. fNyhhp epiwe;j czT
25. %l;L mWitr; rpfpr;irF gpd; jtp;f; f Ntz; ba czT vJ?  
m. fNyhhp epiwe;j czT  
M. ehh;rj; J epiwe;j czT  
<. itl;lkpd; - rp kw; Wk; ; Uk; G rj; J epiwe;j czT  
<. itl;lkpd; - Nf epiwe;j czT

gpd; tpisTfs;
26. fPo; fz; litapy; %l;L mWit rpfp;irF gpd; tUk; kpf Kf; fpakhd gpd; tpisT vJ?
m. EiuAPuy; ,ujj Fohapy; ,ujj fl;L kw;Wk; nghJthd ,ujj fl;L
M. jiytyp

27. fPo; fz;litapy; %l;L mWit rpfpr;irf;F gpd; fhyk; fle;J tUk; gpd; tpisT vJ?
m. %l;L tPf;fk;
M. nraw;if %l;L tpyFjy;
<. fha;r;ry;
<. jiytyp

nghJthd tpguq;fs;
28. %l;L mWitr; rpfpr;irf;Fg;gpd; ve;j mstpw;F vilfis Rkf;fhyk;?
m. gjpndhd;W fpNyhtpw;F Nky;
M. ,UgJ fpNyhtpw;F Nky;
<. gjpndhd;W fpNyhtpw;F fPo;
<. ,Ugj;iJe;J fpNyhtpw;F Nky;
29. %l;L mWit rpfpr;irf;F gpd; fPo;fz;l ve;j Nehapy; nraw;if %l;L ,lk; khWk; tha;g;G cs;sJ?
m. ,ujj nhjpg;G
M. rh;f;fiu Neha;
<. cly; gUkd;
<. ,Uja Neha;
30. ePq;fs; vg; NghJ kUj;Jtiu mZf Ntz;Lk;?
m. neQ;Rtyp ,Ue;jhy;
M. the;jp tUk; jd;ik ,Ue;jhy;
<. jiytyp ,Ue;jhy;
<. njhpatpy;i
<table>
<thead>
<tr>
<th>t. vz.;</th>
<th>fUj;Jf;fs;</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>kpfTk; ghjpf;fg;gl;l Koq;fhy; %;Ltyp cs;sth;F %;L mWit rpfpr;ir nra;a Ntz;Lk;</td>
</tr>
<tr>
<td>2.</td>
<td>Koq;fhy; %;L tpgj;J Vw;gl;lhy; %;L mWit rpfpr;ir nra;a Ntz;Lk;</td>
</tr>
<tr>
<td>3.</td>
<td>njhhl; %;L mirT fUtppd; %yk; gapw;rp nra;J %;L mirtpw;F cjTk;</td>
</tr>
<tr>
<td>4.</td>
<td>%;L mWit rpfpr;irf;F gpd; ehd;F kzp Neuk; fopj;J ejjy; ed;W</td>
</tr>
<tr>
<td>5.</td>
<td>%;L mWit rpfpr;irf;F gpd; xU thuk; fopj; ePe;Jjy; kw;Wk; Xljy; ed;W</td>
</tr>
<tr>
<td>6.</td>
<td>%;L mWit rpfpr;irf;F gpd; itl;lkpd;=Nf epiwe;j cztpid vL;j;Jf; nfhs;syhk;</td>
</tr>
<tr>
<td>7.</td>
<td>%;L mWit rpfpr;irf;F gpd; VO ,Q;RfSf;F Nky; gbfl;L Vwyhk;</td>
</tr>
<tr>
<td>8.</td>
<td>njhgl gapw;rp kw;Wk; Neuhf fhy;fis cah;j;Lk; gapw;rp Koq;fhy; %;L mirtpw;F ed;W</td>
</tr>
<tr>
<td>9.</td>
<td>%;L mWit rpfpr;irf;F gpd; Fj;Jf;fhy; itj;J cl;fhUjy; ed;W</td>
</tr>
<tr>
<td>10.</td>
<td>%;L mWit rpfpr;irf;F gpd; xU thuk; fle;J cly; cwT itj;Jf; nfhs;syhk;</td>
</tr>
</tbody>
</table>
APPENDIX-E
VIDEO ASSISTED TEACHING MODULE-ENGLISH

INTRODUCTION
“Knee osteoarthritis isn’t life threatening, but, It can make life miserable”

Total knee replacement is the gold – standard operation for knee arthritis.

PHYSIOLOGY OF KNEE JOINT

Knee joint mainly helps to provide stability and mobility.

ANATOMY OF KNEE JOINT

What is a knee joint?
The knee is quite a complex hinge joint. It is formed by the ends of the thighbone (femur) and the shinbone (tibia). The kneecap (patella) moves over and protects the joint at the front.

Signs and symptoms of knee osteoarthritis

Common symptoms of severe arthritis of the knee joint include:
- Swelling of the joint
- Knee pain
- Bow-legged or knock-kneed deformity
- Loss of motion
- Feeling of the knee ‘giving-way’
Symptoms of a knee joint infection include:
- severe pain
- joint swelling and warmth
- fevers and
- marked inability to walk, bend the knee, or bear weight.

WHO SHOULD CONSIDER TKR
A total knee replacement is usually recommended for people
- Who have severe osteoarthritis (OA) in the knee.
- Have had severe trauma to the knee.
- Have some other destructive joint disease.

WHO SHOULD NOT UNDERGO TKR
You should not have knee replacement surgery if you have
- Angina (chest pains) or shortness of breath that limits your walking more than your knee pain.
- You should not have a knee replacement if you have a urinary infection (UTI). This may result in infection of your new knee.
- You should not have a knee replacement if you are a man with prostate problems.
- If you have poor urinary flow, it is better to have this investigated and treated before your knee is replaced.
- Patient with dental caries, throat, respiratory infections.

SURGICAL PROCEDURE
What is Total Knee Replacement?
A total knee replacement (TKR) is usually done as the surgical treatment option for advanced osteoarthritis of the knee.
During the surgery, the knee joint is replaced with artificial material. The artificial knee is made up of the plastic piece and metal stem.
ARTIFICIAL KNEE

The end of the femur is removed and replaced with a metal surface and the top of the tibia is removed and replaced with a plastic piece that has a metal stem. If the knee cap has also degenerated, a plastic piece may be added to the back surface to create a smoother joint surface.

INVESTIGATIONS BEFORE TKR

- Routine blood tests are performed on all pre-operative patients.
- Chest X-rays and
- Electrocardiograms are obtained in patients who meet certain age and health criteria, as well.
- Liver and renal function test.

PREPARING FOR SURGERY

- No ASPIRIN products for 10 DAYS before surgery & no clopilid drug.
- No other BLOOD THINNING products for 7 DAYS before surgery (you must be monitored by your family doctor).
- No HERBAL products for 7 DAYS before surgery.
- No IBUPROFEN products for 5 DAYS before surgery.

ACTIVITY AND EXERCISE:

- Immediately after surgery patient should be put in continuous passive motion during first post operative day.
- Walking within the first 4-8 hours after surgery is recommended.

Suitable during First 3 Months after Surgery

- Walking
- Swimming (after discussion with your surgeon)
- Cycling on a stationary bicycle with the seat positioned high enough to avoid bending the knee excessively

- Do not drink ALCOHOL for 48 HOURS prior to your surgery.
- Do not EAT or DRINK after MIDNIGHT prior to surgery.
### Suitable Activities after 3 Months

- Swimming (avoid twisting motions such as whip kick)
- Golf
- Cycling on a regular bicycle with the seat positioned high enough to avoid bending the knee excessively
- Some types of dancing
- Gardening with raised beds or long-handled tools or devices
- Aquatic exercise and low-impact aerobics

### EXERCISES AFTER TKR

#### Early Postoperative Exercises

- **Quadriceps Sets (on the day of surgery)**
  - Tighten your thigh muscle. Try to straighten your knee. Hold for 5 to 10 seconds.
  - Repeat this exercise approximately 10 times during a two minute period, rest one minute and repeat. Continue until your thigh feels fatigued.

#### Movements to avoid after TKR:

- **Do Not Twist or Pivot on Your Leg.**
- **No Extreme Knee Bending.**
- Do not squat to pick up objects from the floor. Use a reacher.
- Jogging or running
- Impact exercises
- Sports that require twisting/pivoting (aggressive tennis, basketball, racquetball)
- Contact sports
- Heavy labor.

#### Ankle Pumps (on the day of surgery)

- Move your foot up and down rhythmically by contracting the calf and shin muscles. Perform this exercise periodically for two to three minutes, two or three times an hour in the recovery room.
- Continue this exercise until you are fully recovered and all ankle and lower-leg swelling has subsided.

### Activities Not Recommended

- Lifting and pushing heavy objects (more than 11 kg. or 25 lbs.)
- Contact sports
- Any activities involving fast or sudden stopping and starting, twisting or jarring, jumping
- Running, tennis, badminton, squash
- Modern dance (disco, tango, twist)
- Downhill skiing
- Some gym activities such as:
  - High-impact aerobics
  - Heavy weight-lifting

- Walking (6 hours after surgery)
- Chair sitting (1st day after surgery)
- Parallel bar walking (1st or 2nd day)
Straight Leg Raises
- Tighten the thigh muscle with your knee fully straightened on the bed, as with the Quad set. Lift your leg several inches. Hold for five to 10 seconds. Slowly lower.
- Repeat until your thigh feels fatigued.
- You also can do leg raises while sitting. Fully tighten your thigh muscle and hold your knee fully straightened with your leg unsupported. Repeat as above. Continue these exercises periodically until full strength returns to your thigh.

Sitting Supported Knee Bends
- While sitting at bedside or in a chair with your thigh supported, place your foot behind the heel of your operated knee for support. Slowly bend your knee as far as you can. Hold your knee in this position for 5 to 10 seconds.
- Repeat several times until your leg feels fatigued or until you can completely bend your knee.

Knee Straightening Exercises
- Place a small rolled towel just above your heel so that it is not touching the bed. Tighten your thigh. Try to fully straighten your knee and to touch the back of your knee to the bed. Hold fully straightened for five to 10 seconds.
- Repeat until your thigh feels fatigued.

Sitting Unsupported Knee Bends
- While sitting at bedside or in a chair with your thigh supported, bend your knee as far as you can until your foot rests on the floor. With your foot lightly resting on the floor, slide your upper body forward in the chair to increase your knee bend. Hold for 5 to 10 seconds. Straighten your knee fully.
- Repeat several times until your leg feels fatigued or until you can completely bend your knee.

Bed-Supported Knee Bends (3rd day after surgery)
- Bend your knee as much as possible while sliding your foot on the bed. Hold your knee in a maximally bent position for 5 to 10 seconds and then straighten.
- Repeat several times until your leg feels fatigued or until you can completely bend your knee.

Walking
- Proper walking is the best way to help your knee recover. At first, you will walk with a walker or crutches. Your surgeon or therapist will tell you how much weight to put on your leg.
- Stand comfortably and erect with your weight evenly balanced on your walker or crutches. Advance your walker or crutches a short distance; then reach forward with your operated leg with your knee straightened so the heel of your foot touches the floor first. As you move forward, your knee and ankle will bend and your entire foot will rest evenly on the floor. As you complete the step, your toe will lift off the floor and your knee and hip will bend so that you can reach forward for your next step. Remember, touch your heel first, then flatten your foot, then lift your toes off the floor.

- Stair climbing is an excellent strengthening and endurance activity. Do not try to climb steps higher than the standard height (7 inches) and always use a handrail for balance. As you become stronger and more mobile, you can begin to climb stairs foot over foot.

Stair Climbing and Descending (7th day)
- The ability to go up and down stairs requires strength and flexibility. At first, you will need a handrail for support and will be able to go only one step at a time. Always lead up the stairs with your good knee and down the stairs with your operated knee. Remember, "up with the good" and "down with the bad." You may want to have someone help you until you have regained most of your strength and mobility.

WHEN DO YOU USE KNEE IMMOBILIZER:
- Wear only when ambulating until straight leg raising can be done independently.

SEXUAL ACTIVITY AFTER TKR
- Most people are able to return to sexual activity when it is comfortable to do so. This activity is safe for your operated leg as long as all the precautions for your knee are followed. Remember:
  - Do not force your new knee to bend.
  - Do not twist your new knee inward or outward.
  - Avoid positions that cause pain.
  - Sexual activity can be carried out 4-6 weeks after surgery.
PAIN MANAGEMENT

- Taking analgesics by mouth.
- Epidural analgesia.

Iron is necessary to build the hemoglobin in your blood, which carries oxygen to your tissues. Blood loss from surgery can decrease your hemoglobin and make you feel weak, tired and light-headed. Good sources of iron include: red meat, fish, poultry, canned oysters and clams, tofu, fortified whole grains and some leafy green vegetables such as spinach.

Diet after TKR

- Vitamin C and Iron rich diet should be taken.
- It is important that you eat a well-balanced, high-fibre diet following surgery and after you are discharged from hospital. Certain foods promote healing and increase energy level and strength. Eating healthy food also helps avoid infections and prevent constipation.

- Calcium helps heal bones and keeps them strong. Good sources of calcium include milk, yogurt, cheese, canned salmon, soy, calcium-fortified tofu and milk rice.
- Protein is needed to heal tissue and strengthen muscles. Foods such as beef, pork, fish, poultry, eggs, milk, dairy products, soymilk, beans, nuts, peanut butter and tofu are good sources of protein.

FOODS TO BE AVOIDED

- Vitamin K diet should be avoided after TKR because vitamin-K mainly lead to blood coagulation. Sources of vitamin-K are cauliflower, cabbage etc..

- Calcium helps heal bones and keeps them strong. Good sources of calcium include milk, yogurt, cheese, canned salmon, soy, calcium-fortified tofu and milk rice.
- Protein is needed to heal tissue and strengthen muscles. Foods such as beef, pork, fish, poultry, eggs, milk, dairy products, soymilk, beans, nuts, peanut butter and tofu are good sources of protein.

COMPLICATIONS AFTER TKR

- Blood clots
- Urinary tract infections
- Nausea and vomiting
- Chronic knee pain and swelling
- Bleeding into the knee joint
- Nerve damage
- Blood vessel injury
- Infection
- Stiffness of the Knee

LATE COMPLICATION
- Dislocation of the artificial Knee.
GENERAL INFORMATION

- You can lift only less than 11kg of weight.
- Obesity patient may lead to loosening or dislocation of artificial knee.

When to contact Your doctor ?.

- Pain in your chest.
- Difficulty in breathing.
- Shortness of breath.

THANK YOU
VIDEO ASSISTED TEACHING MODULE – TAMIL

புறக்கார வோட்ட அவைகள்
சிக்கல் பாதுகாப்பு திறன்
தொடர் கண்டு

முன்னோடிப் படுத்து வேண்டும்
அவற்றின் வேறுபாட்டுகள்
ஏனென் வேறுபாட்டுகள் காணும் விளக்கம்

முன்னோடிப் படுத்து வேண்டும்
அவற்றின் வேறுபாட்டு
ஏனென் வேறுபாடு

முன்னோடிப் படுத்து வேண்டும்
அவற்றின் வேறுபாட்டு
ஏனென் வேறுபாடு
மருத்துவத்தில் வழங்கப்படும் முக்கிய அறிக்கைகள்:

- கொள்ளல்லாது எங்கும் எங்கும் பாதுகாப்பு.
- கொள்ளல்லாது எங்கும் எங்கும் பாதுகாப்பு.
- கொள்ளல்லாது எங்கும் எங்கும் பாதுகாப்பு.
- கொள்ளல்லாது எங்கும் எங்கும் பாதுகாப்பு.

Total Knee Replacement
Femur (thigh bone)

Screws

Tibia (shin bone)

Fibula

Metal surface
Plastic bearing

என்னுடைய கோல் கைக்கார் பாதகத் பாதுகாப்புகள்?

- மருத்துவக் கைக்கார் பாதகத்தைப் பின்னர் கைக்கார்
- கொள்ளல்லாது எங்கும் எங்கும் பாதுகாப்பு.
- கொள்ளல்லாது எங்கும் எங்கும் பாதுகாப்பு.
- கொள்ளல்லாது எங்கும் எங்கும் பாதுகாப்பு.
வலியாதிகள் விளையாட்டுக்கள்

1. அருமையான கல்முனையை உருவாக்குவதற்குப் பயன்படும் விளையாட்டுகள்
2. ஒசைகள் உருவாக்குவதற்குப் பயன்படும் விளையாட்டுகள்
3. தருமரகம் உருவாக்குவதற்குப் பயன்படும் விளையாட்டுகள்
4. திகதல் உருவாக்குவதற்குப் பயன்படும் விளையாட்டுகள்

மூத்தவைகள் உருவாக்குவதற்குப் பயன்படும் விளையாட்டுகள்

1. தொலைமை தான்பாத்தியம்
2. நூற்றாண்டுப் பைத்தியம்
3. தொலைக்காட்சியம்
4. தமிழ் பைத்தியம்

மூத்தவைகள் உருவாக்குவதற்குப் பயன்படும் விளையாட்டுகள்

1. தொலைமை தான்பாத்தியம்
2. நூற்றாண்டுப் பைத்தியம்
3. தமிழ் பைத்தியம்
4. தொலைக்காட்சியம்
அறிவு தருவதற்கு வரையறையான முன்னுரை வைக்கும் இடத்தில் தமிழ்நாடு வரலாற்றுத் திறன் அருங்காட்சியகம்

- நூற்றாண்டு கட்டுரையில் பெரும் பதிவு ஏற்றுக்கொள்ளும் பெரும் இடத்தில் தமிழ்நாடு வரலாற்றுத் திறன் அருங்காட்சியகம்
- உதவிகள் பொறுப்புத் திறன்
- காட்சிகள் அளிப்பு பொழுதையார்
- நூற்றாண்டுக்கு முன்னர் நூறுக்கு முன்னர்
- நூற்றாண்டுக்கு முன்னர்
- நூற்றாண்டுக்கு முன்னர்
- நூற்றாண்டுக்கு முன்னர்
- நூற்றாண்டுக்கு முன்னர்
- நூற்றாண்டுக்கு முன்னர்

அறிவு தருவதற்கு வரையறையான முன்னுரை வைக்கும் இடத்தில் தமிழ்நாடு வரலாற்றுத் திறன் அருங்காட்சியகம்

- பெரும் பதிவு ஏற்றுக்கொள்ளும் பெரும் இடத்தில் தமிழ்நாடு வரலாற்றுத் திறன் அருங்காட்சியகம்
- உதவிகள் பொறுப்புத் திறன்
- காட்சிகள் அளிப்பு பொழுதையார்

காட்சிகள் பொழுதையார்
(அறிவு தருவதற்கு வரையறை திறன்)

காட்சிகள் பொழுதையார் வரையறையான முன்னுரையில் காட்சிகள் குறிப்பிட்டிய அடிமுறையில் தமிழ்நாடு வரலாற்றுத் திறன் அருங்காட்சியகம்

இந்த பொழுதையார் காட்சிகள் பொழுதையார் வரையறையான முன்னுரையில் காட்சிகள் அடிமுறையில் தமிழ்நாடு வரலாற்றுத் திறன் அருங்காட்சியகம்.
அழும்பாலும் பெருமாளும் இருந்து வருவிய பத்திரிக்கோள் 
- பெருமாளும் இருந்து வருவிய வழிகாட்டிய வருவிய பத்திரிக்கோள் 
- பெருமாளும் இருந்து வருவிய கால்வழி வருவிய பத்திரிக்கோள் 
- பெருமாளும் இருந்து வருவிய இருண்டி வருவிய பத்திரிக்கோள் 
- பெருமாளும் இருந்து வருவிய தமிழ் பத்திரிக்கோள் 
- பெருமாளும் இருந்து வருவிய விளக்கம் பத்திரிக்கோள் 
- பெருமாளும் இருந்து வருவிய விளக்கம் பத்திரிக்கோள் 
- பெருமாளும் இருந்து வருவிய விளக்கம் பத்திரிக்கோள் 

அழும்பாலும் பெருமாளும் வருவிய பத்திரிக்கோள் 
- பெருமாளும் இருந்து வருவிய வழிகாட்டிய வருவிய பத்திரிக்கோள் 
- பெருமாளும் இருந்து வருவிய கால்வழி வருவிய பத்திரிக்கோள் 
- பெருமாளும் இருந்து வருவிய இருண்டி வருவிய பத்திரிக்கோள் 
- பெருமாளும் இருந்து வருவிய தமிழ் பத்திரிக்கோள் 
- பெருமாளும் இருந்து வருவிய விளக்கம் பத்திரிக்கோள் 
- பெருமாளும் இருந்து வருவிய விளக்கம் பத்திரிக்கோள் 
- பெருமாளும் இருந்து வருவிய விளக்கம் பத்திரிக்கோள் 

ஆதாரங்கள்: 
- பெருமாளும் இருந்து வருவிய பத்திரிக்கோள் 
- பெருமாளும் இருந்து வருவிய வழிகாட்டிய 
- பெருமாளும் இருந்து வருவிய கால்வழி 
- பெருமாளும் இருந்து வருவிய இருண்டி 
- பெருமாளும் இருந்து வருவிய தமிழ் 
- பெருமாளும் இருந்து வருவிய விளக்கம் 

படிசை: 
- பெருமாளும் இருந்து வருவிய பத்திரிக்கோள் 
- பெருமாளும் இருந்து வருவிய வழிகாட்டிய 
- பெருமாளும் இருந்து வருவிய கால்வழி 
- பெருமாளும் இருந்து வருவிய இருண்டி 
- பெருமாளும் இருந்து வருவிய தமிழ் 
- பெருமாளும் இருந்து வருவிய விளக்கம் 

போட்டியில்: 
- பெருமாளும் இருந்து வருவிய பத்திரிக்கோள் 
- பெருமாளும் இருந்து வருவிய வழிகாட்டிய 
- பெருமாளும் இருந்து வருவிய கால்வழி 
- பெருமாளும் இருந்து வருவிய இருண்டி 
- பெருமாளும் இருந்து வருவிய தமிழ் 
- பெருமாளும் இருந்து வருவிய விளக்கம் 

அமெரிக்காவின் வேலைகள் வருவிய பத்திரிக்கோள் 
- பெருமாளும் இருந்து வருவிய பத்திரிக்கோள் 
- பெருமாளும் இருந்து வருவிய வழிகாட்டிய 
- பெருமாளும் இருந்து வருவிய கால்வழி 
- பெருமாளும் இருந்து வருவிய இருண்டி 
- பெருமாளும் இருந்து வருவிய தமிழ் 
- பெருமாளும் இருந்து வருவிய விளக்கம் 

அமெரிக்காவின் வேலைகள் வருவிய பத்திரிக்கோள் 
- பெருமாளும் இருந்து வருவிய பத்திரிக்கோள் 
- பெருமாளும் இருந்து வருவிய வழிகாட்டிய 
- பெருமாளும் இருந்து வருவிய கால்வழி 
- பெருமாளும் இருந்து வருவிய இருண்டி 
- பெருமாளும் இருந்து வருவிய தமிழ் 
- பெருமாளும் இருந்து வருவிய விளக்கம் 

அமெரிக்காவின் வேலைகள் வருவிய பத்திரிக்கோள் 
- பெருமாளும் இருந்து வருவிய பத்திரிக்கோள் 
- பெருமாளும் இருந்து வருவிய வழிகாட்டிய 
- பெருமாளும் இருந்து வருவிய கால்வழி 
- பெருமாளும் இருந்து வருவிய இருண்டி 
- பெருமாளும் இருந்து வருவிய தமிழ் 
- பெருமாளும் இருந்து வருவிய விளக்கம் 

அமெரிக்காவின் வேலைகள் வருவிய பத்திரிக்கோள் 
- பெருமாளும் இருந்து வருவிய பத்திரிக்கோள் 
- பெருமாளும் இருந்து வருவிய வழிகாட்டிய 
- பெருமாளும் இருந்ஂ...
வெள்ளாடல் தோற்றங்கள் என்றும் குழுக்கள்

- காய்ப்பொருள்
- வெள்ளாடல்

வெள்ளாடல் என்றும் பொருட்கள்

- காய்ப்பொருள்
- வெள்ளாடல்

செயல்பாடு மற்றும் வேறு வகைகள்

- வெள்ளாடல்
- செயல்பாடு

வெள்ளாடல் என்றும் பொருட்கள்

- வெள்ளாடல்
- செயல்பாடு

செயல்பாடு மற்றும் வேறு வகைகள்

- வெள்ளாடல்
- செயல்பாடு