

Knowledge and attitude among physiotherapy interns towards physiotherapy and total knee replacement in case of osteoarthritis of knee

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Abstract

Aims: To find the knowledge and attitude among physiotherapy interns towards physiotherapy and total knee replacement in case of osteoarthritis of knee.

Material and Methods: A cross-sectional observational study was carried out using a structured questionnaire. The structured questionnaire was designed to assess the knowledge and attitude among physiotherapy interns towards physiotherapy and total knee replacement in case of osteoarthritis of knee across the colleges in Gujarat. The data was analyzed by using the Statistical Package for Social Sciences (SPSS) statistical software, version 16.

Results: Total 250 Interns students were participated in the study. Majority of Physiotherapy students believed 75-100% successful in improving functional mobility. Physiotherapy is effective in mild and moderate stage of osteoarthritis knee. Physiotherapy was considered as an alternative to total knee replacement by 85% of Interns, and they think that it can delay or avoid total knee replacement in patient with minimal symptoms, and if patient with minimal symptoms are advised for total knee replacement then they take an effort as to discuss with the orthopedic surgeons to take physiotherapy as first treatment option.

Conclusion: Interns knowledge and attitude on Physiotherapy for osteoarthritis knee concludes that physiotherapy is effective in mild to moderate stage of osteoarthritis knee for improving functional mobility. Their opinion for advising criteria of total knee replacement to the individual having NPRS 8-10, Flexion range of motion restriction of 45-90 degrees, Extension range of motion restriction 0-45 degrees, Fixed flexion deformity, Medial Instability and ADL's affection i.e. Getting out from chair, sit to stand, crossed leg sitting, squatting etc.

Keywords: Osteoarthritis of knee, total knee replacement, Interns physiotherapy students. Physiotherapy.

Introduction

Knee osteoarthritis (OA) is a prevalent condition that contributes significantly to functional limitations and disability in the elderly population.¹ Physical impairments such as knee pain, loss of knee motion, and decreased quadriceps strength have been associated with knee osteoarthritis and are believed to contribute to physical disability and progression of the disease.^{2,3} Osteoarthritis is truly universal disorder, affecting both sexes and all races, everyone who lives long enough will have it somewhere, in some degree.⁴ It is disorder affects almost 85% of the population by the age 75.⁵ Treatment of osteoarthritis knee includes the use of both non-surgical and surgical interventions. There are 52 modalities recommended by OARSI for the treatment of Osteoarthritis of knee.^{6,7} Moreover all the modalities have aimed primarily at symptom relief, improving joint mobility and function, and optimizing better quality of life.⁷ In the present study physiotherapy and total knee replacement is consider as treatment of osteoarthritis of knee. There are studies knowledge, attitude and practice towards treatment of osteoarthritis of knee among their practicers they suggest some criteria for advising Total knee replacement to the patient of osteoarthritis knee as well, there is difference in their attitude and practice towards total knee replacement.⁸

Interns are the stepping stones of Physiotherapy profession. Interns are the future clinicians. And as

Bachelor of physiotherapy Interns are supposed to treat all type of patients including musculoskeletal conditions, respiratory and neurological conditions. As per the scenario clinical practice observed, clinical therapist are more in contact with the patients. Hence, the study was conducted on Interns keeping the aim of the study was to find the knowledge and attitude among physiotherapy interns towards physiotherapy and total knee replacement in case of osteoarthritis of knee.

Material and Methods

The study proposal was prepared and approval was obtained frange of motion Institutional ethical committee. The data was collected frange of motion Physiotherapy colleges across the Gujarat. The study was cross-sectional observational study conducted among 250 Interns of physiotherapy who want to participate voluntarily they were included in the study. Written consent was obtained from all participants after explaining the purpose of the study. A structured questionnaire in English language was prepared by experts of the same field. A pilot study was carried out to validate that questionnaire. Then the questionnaire was finalized. Participants were selected by convenient sampling method from physiotherapy colleges across Gujarat for that the permission was taken from the principal of respective physiotherapy colleges. Written informed consents were obtained from all participants

after explaining the purpose of study. Questionnaire was distributed among the participants. They were requested to fill up the questionnaires. Data were collected and analyzed by using the Statistical Package for Social Sciences (SPSS) statistical software, version 16.

Results

Total 250 participants were included who fulfilled the inclusion criteria.

Success rate of physiotherapy: Majority of Interns believed that physiotherapy is 50-75% successful in terms of pain relief and deformity corrections whereas 75-100% successful in improving functional mobility. (Fig. 1)

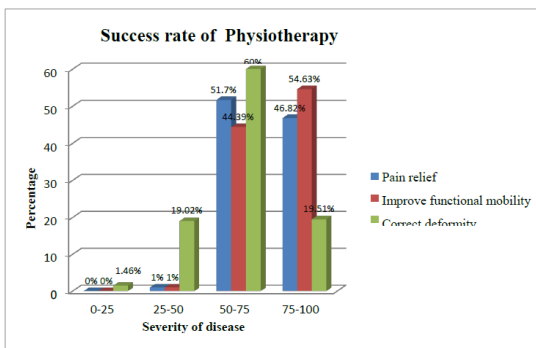


Fig. 1: Success rate of Physiotherapy

Physiotherapy as an alternative option: Among the 250 Interns, 85% believed that Physiotherapy is an alternative option for Total knee replacement. With regards above consideration physiotherapy as alternative option of total knee replacement. 93% Interns believed that physiotherapy can delay total knee replacement as well 51% Interns believed that physiotherapy can avoid total knee replacement.

Effectiveness of physiotherapy: Majority of Interns felt that physiotherapy would help the maximum in mild and moderate osteoarthritis whereas none felt that it would help in very severe osteoarthritis. (Fig. 2)

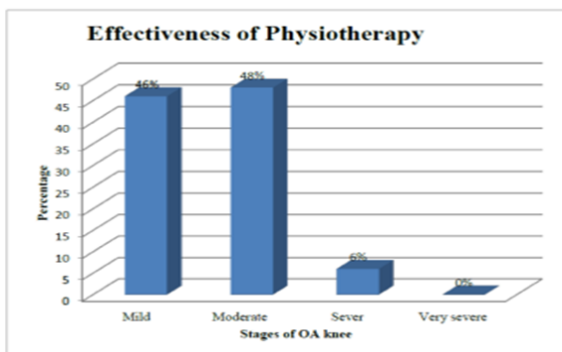


Fig. 2

Total knee replacement as an alternative option for osteoarthritis knee: 79% interns considered total knee

replacement as an alternative option for the treatment of osteoarthritis knee.

Criteria for suggesting total knee replacement as a treatment option by physiotherapy interns':

Pain criteria

Intensity of pain: 86% Interns suggested total knee replacement when the pain intensity on NPRS score is 8-10, while 11% on NPRS within 4-6 and 3% considered it with NPRS score of 0-3.

Range of motion restriction: 51% of Interns considered total knee replacement as a treatment option when the knee flexion is restricted up to 45- 90 degrees and extension is restricted upto 45-0 degrees. (Table 1)

Table 1: Range of motion restriction

Flexion range of motion	Percentage	Extension range of motion	Percentage
0-45	26	135-90	14.63
45-90	51	45-90	33.65
90-135	23	0-45	51

Deformity: Considering deformity as criteria for total knee replacement, preference for fixed flexion deformity was 61.46%, Genu Varus was 41.46% and Genu Valgus was 37.07%.

Instability: 83.41% Interns considered medial instability as a criterion while suggesting Total knee replacement, whereas 16.58% Interns considered for lateral instability.

ADL's affection: More than 50% Interns suggested total knee replacement when the individual had problems with basic ADLs viz. Getting out frange of motion chair ,sit to stand, crossed leg sitting, squatting etc. as criteria for total knee replacement. (Fig. 3)

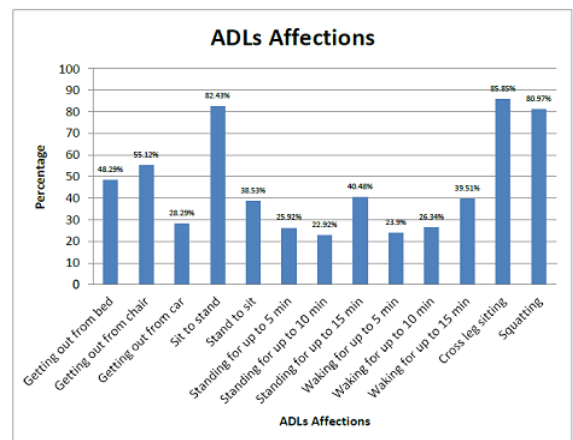


Fig. 3: ADL's criteria for suggesting total knee replacement

Decision of physiotherapists for advising total knee replacement with minimal symptoms of osteoarthritis knee: 33.17% Interns thought to advise

the patients to avoid or delay total knee replacement. 63.90% opted to discuss with orthopedic surgeons about taking physiotherapy as an option of total knee replacement. (Fig. 4)

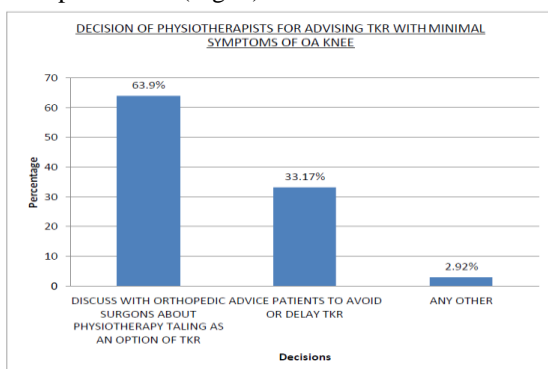


Fig. 4: Decision of physiotherapists for advising total knee replacement with minimal symptoms of osteoarthritis knee

Discussion

In this study we analyzed the Knowledge and Attitude of physiotherapy among physiotherapy Interns towards physiotherapy and total knee replacement in case of osteoarthritis of knee. 51.70% Interns thought that physiotherapy is 50-75% successful in terms of pain relief. 54.63% Physiotherapy students suggested physiotherapy is 75-100% successful in terms of improve functional mobility. Furthermore, 60% Interns gave an opinion of physiotherapy being 50-75% successful for deformity correction. In the previous study the majority of physiotherapy professionals suggested physiotherapy for pain relief. This controversy may be because the professionals give their opinion on the bases of clinical practice and the Interns thought on the basis of what they have learnt theoretically.⁸ O'reilly et al. suggested in favor of above findings that exercise therapy for lower limb osteoarthritis may take many forms however given the significant impact of muscle weakness on pain and function in osteoarthritis.⁹

In contrast of physiotherapy treatment we analyzed attitude of interns towards total knee replacement. Pain is the most important factor for deciding whether to go for total knee replacement or not. Interns thought pain intensity 8-10 on NPRS scale as one of the major criteria for undergoing total knee replacement. Decrease in flexion range of motion 45- 90 degrees and extension 45-0 degrees were also one of the criteria for advising for total knee replacement. They also thought about deformity of knee Fixed flexion deformity and medial instability of knee joint as an indication for total knee replacement. Some contradiction about the extension range of motion restriction suggested by the physiotherapy professional was when the restriction is 10 degrees.⁸ It may be because of Professionals have more clinical experience than Interns.

According to Interns on the basis of their knowledge ADL's were affected in patients with osteoarthritis knee because of pain, restricted mobility which was also taken into consideration and criteria for advising for total knee replacement. Cross legged sitting was one of the major ADL affection. Other ADLs like getting out from chair, sit to stand, squatting were also affected. It is totally different from professional's knowledge because professionals believe that Total knee replacement should be advised to the patient when the patient feels pain and discomfort while walking up to 5 min., standing up to 5 min and sit to stand.⁸ This contradiction may be because they have learnt the functional limitation in osteoarthritis are mainly difficulty in controlling weight bearing activity i.e. cross legged sitting, squatting rising from chair.¹⁰

In our review Interns believe physiotherapy is more beneficial in mild and moderate stage of osteoarthritis knee, while (very few 6%) advised for it at severe stage. And none of them suggest physiotherapy at very sever stage of OA knee. In supportive of that Falconer et al. found improvements in motion (11%), pain (33%), and gait speed (11%) after treatments at the physical therapy clinic over 4 to 6 weeks in mild, moderate and sever stage of osteoarthritis knee.¹¹

While assessing their attitude based on above findings 85% Interns considered physiotherapy as an alternative to total knee replacement. Deyle et al. demonstrated that manual therapy techniques as exercises applied by physical therapist produce 52%improvement in self-reported function, stiffness and pain.¹²

Also they thought that it can delay total knee replacement and avoid total knee replacement in patient with minimal symptoms, and if patient with minimal symptoms are advised for total knee replacement then they can take an effort so as to discuss with the orthopedic surgeons to take physiotherapy as first treatment option. Another effort by them is to advise the patient for physiotherapy as an option to avoid and delay total knee replacement. This attitude absolutely matches with the professional physiotherapists.⁸ i.e. a positive attitude in their beginning of clinical career.

Conclusion

Interns' knowledge and attitude on Physiotherapy for osteoarthritis knee concludes that physiotherapy is effective in mild to moderate stage of osteoarthritis knee for improving functional mobility. Perhaps they believe that it can delay total knee replacement. their opinion for advising criteria of total knee replacement to the individual having NPRS 8-10, Flexion range of motion restriction of 45-90 degrees Extension range of motion restriction 0-45 degrees, Fixed flexion deformity, Medial Instability and ADL's affection i.e. Getting out from chair ,sit to stand, crossed leg sitting, squatting etc. If these criteria not followed then they opted to discuss

with orthopedic surgeons about taking physiotherapy as an option of total knee replacement.

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References

1. Guccione AA, Felson DT, Anderson JJ, Anthony JM, Zhang Y, Wilson PW, et al. The effects of specific medical conditions on the functional limitations of elders in the Framingham study. *Am J Public Health* 1994; 84: 351–8.
2. Creamer PL, Hochberg MC. Where does it hurt? Pain localization in osteoarthritis of the knee. *Osteoarthritis Cartilage* 1998;6:318–23.
3. Messier SP, Loeser RF, Hoover JL, Semble EL, Wise CM. Osteoarthritis of the knee: effects on gait, strength, and flexibility. *Arch Phys Med Rehabil* 1992;73:29–36.
4. Louis Solomon, David J. Warwick: Apley's System of orthopedics and fracture 8th edition 2001.
5. Kenneth E. Sack: Osteoarthritis – A continuing challenge. *West J MED* 1995; 163:579-86.
6. W. Zhang, R. W. Moskowitz, G. Nuki et al., -OARSI recommendations for the management of hip and knee osteoarthritis—part II: OARSI evidence-based, expert consensus guidelines. *Osteoarthritis and Cartilage* 2008;16(2):137–162.
7. W. Zhang, G. Nuki, R. W. Moskowitz et al., OARSI recommendations for the management of hip and knee osteoarthritis part III: changes in evidence following systematic cumulative update of research published through January 2009. *Osteoarthritis and Cartilage*, 2010;18(4):476–99.
8. Patel H (2016) 'knowledge, attitude and practice amongst orthopedic surgeons, physiotherapists and patients for total knee replacement in case of osteoarthritis' (MPT Thesis), Sardar Patel University, India.
9. O'Reilly SC, Jones A, Muir KR et al. Quadriceps weakness in knee osteoarthritis: the effect on pain and disability. *Ann Rheum Dis* 1998; 57(10):588-94.
10. Kisner, Carolyn. Lynn Allen Colby. Therapeutic Exercise: Foundations and Techniques. 5th ed. Philadelphia: F.A. Davis, 2007
11. Falconer J, Hayes KW, Chang RW Effect of ultrasound on mobility in osteoarthritis of knee: a randomized controlled trial. *Arthritis Care Res* 1992;5:29-35.
12. Deyle GD, Henderson NE, Matekel RL, et al. Effectiveness of manual physical therapy and exercise in osteoarthritis of the knee: a randomized, controlled trial. *Ann Intern Med* 2000;132:173–81.