

Original Research Article

## **Kinesiophobia in Patients with Total Hip Arthroplasty: A Cross Sectional Study**

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### **ABSTRACT**

**Background:** Total hip Arthroplasty (THA) is a surgical procedure in which the joint is replaced by an implant which is indicated in several conditions mainly the arthritis of the hip. Kinesiophobia is the fear of movement which hampers functional recovery of the patients and therefore it needs to be assessed in this population.

**Aim and objectives:** To assess Kinesiophobia in patients who underwent total hip arthroplasty with post-operative span of 4-8 weeks A) to find out the relation between VAS and the Tampa Scale of Kinesiophobia (TSK) score B) To find out the relation between Age and the Tampa Scale of Kinesiophobia score

**Methodology:** A cross-sectional study with 52 subjects of age group between 18-75 who underwent both unilateral and bilateral THA with the post-operative span of 4-8 weeks were selected by purposive sampling method. The subjects were assessed using the Tampa Scale of Kinesiophobia in which the scores above 37 were considered to have high level of Kinesiophobia whereas scores below were considered low.

**Results:** Low level of Kinesiophobia was present in 36 out of 52 subjects i.e. 69.23%. This study also showed that there is strong positive correlation between the pain and the TSK score with significant p value ( $p=0.000$ ,  $r=0.733$ ). Also a positive correlation was appreciated between age and the TSK score ( $p=0.003$ ,  $r=0.407$ )

**Conclusion:** This study concludes that low level of Kinesiophobia is present in majority of the patients with THA with post-operative span of 4-8 weeks

**Keywords:** Kinesiophobia, Total hip arthroplasty, Tampa Scale of Kinesiophobia

### **INTRODUCTION**

Hip joint is known for its stability and designed for weight bearing purposes. It influences the body mechanics and function of the lower extremity. <sup>(1)</sup> Total hip Arthroplasty (THA) is one of the most practiced surgical procedures for arthritis all over the world and its application is rising over these years. <sup>(2)</sup> It's also indicated in several other conditions such as avascular necrosis, bone tumors, nonunion fracture

etc. It has been mentioned in the literatures for decades that functional training and physiotherapeutic interventions play a vital role in the recovery of such patients. <sup>(1)</sup>

Kinesiophobia i.e. fear of movement is defined as the phobia of physical movement and activity that results from a feeling of vulnerability to painful injury/ re-injury. <sup>(3)</sup>

This pain related fear has been shown to be a predictor of future disability and also the health status of the general population. <sup>(4)</sup>

Pain is also one of the factors leading to variable outcomes post surgery. Such pain has been shown to partially mediate the effects of pain intensity on disability at the onset of lower back pain, also fear reduction plays a vital role in fostering disabilities in various other disorders. <sup>(5)</sup>

According to the cognitive fear avoidance model when a painful experience is interpreted as threatening it can generate catastrophizing cognitions which will result in avoidance and can result in disability, depression especially in geriatric population and the cause of pain is more from the avoidance than the sensory pain. <sup>(6)</sup>

It is also important from a psychological perspective to be able to differentiate between functional disabilities due to sensory experience of pain and pain arising from fear-avoidance. In case of Kinesiophobia there is hesitancy to do any motor activity which could be in the form of removing it from consciousness or negation i.e. there is no need for movement. This behaviour arises from various perceptions such body movements will worsen the existing pain. <sup>(4,7)</sup>

The assessment of Kinesiophobia can be done by using psychometric instruments and the most common being the Tampa Scale of Kinesiophobia presented by Miller Kori and Todd.

Previous studies show that high level of fear of movement negatively influences the outcome of the rehabilitation hence, it would be of interest to assess Kinesiophobia in these patients as there is limited literature in this population and high incidence will help the concerned therapist to tackle it with specific rehabilitation protocols. Hence this study aimed to assess Kinesiophobia and correlate Kinesiophobia with pain and age using the Tampa Scale of Kinesiophobia in patients with Total Hip Arthroplasty.

## **MATERIALS AND METHODOLOGY**

This cross-sectional study included 52 patients who underwent Total Hip Arthroplasty. Subjects who participated in this study were recruited from various renowned hospitals in the city of Pune. The study included both male and female patients in the age group of 18-75 years who underwent either unilateral or bilateral Total Hip Arthroplasty with the post-operative span of 4-8 weeks. Patients with any neurological deficit, polytrauma involving the lower extremity and psychiatric disorders with impaired higher functions were excluded from this study.

## **PROCEDURE**

Ethical approval to conduct the study was obtained from the institutional review board. Subjects who fulfilled the inclusion criteria and who were willing to participate in the study were explained in detail the purpose of this research and a written consent was taken from them.

The participants were assessed in an out-patient department set up when they came back for a follow up (4-8 weeks post surgery). The demographic details of the participants were taken such as age, gender, surgical procedure performed (unilateral/bilateral), whether physiotherapy was taken. This was done to better understand the profile of the patients and transferability of the results achieved.

Kinesiophobia was assessed using the Tampa Scale of Kinesiophobia which is a therapist administered scale which consists of 17 questions graded by 4 points ranging from "strongly disagree to strongly agree". Questions 4,8,12,16 are inversely scored. The score varies from 17 to 68 and a score of 37 or above is indicator of high level of Kinesiophobia. The intensity of post operative pain was assessed using the Visual Analogue Scale (VAS) where the participants were asked to mark on a scale of 0-10

The data was then gathered and analysed.

## STATISTICAL ANALYSIS

52 subjects were evaluated comprising of 33 males and 19 females with mean age distribution of  $49.058 \pm 9.192$

Data was analysed in percentage.

Correlation between the VAS and the TSK score and also between age and the TSK score was analysed using the Spearman's correlation test using SPSS software version 24 with level of significance set at  $p < 0.05$

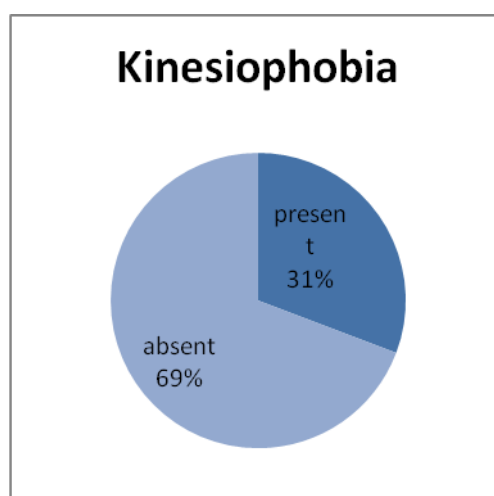
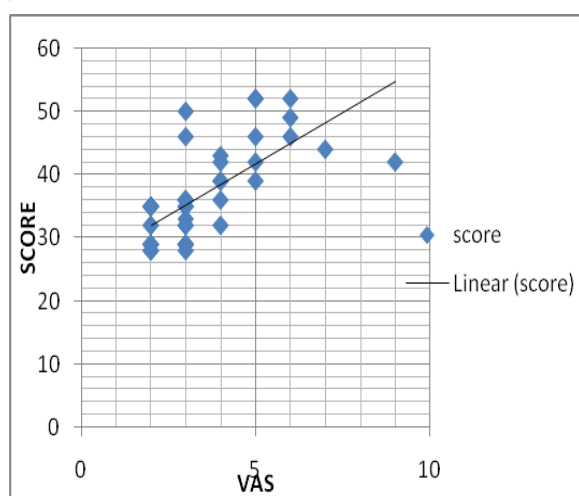
## RESULTS

The results of this study show that there was low level of Kinesiophobia in 69.24% and high level of Kinesiophobia in 30.76% patients who underwent THA.

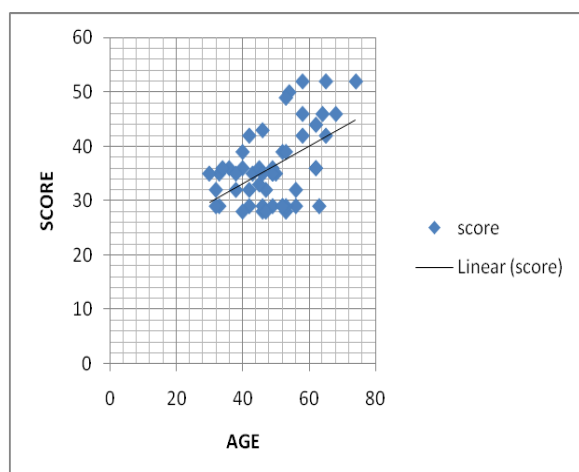
A strong positive correlation was found between VAS and the TSK score with r value of 0.733 and significant p value of 0.000 as seen in graph 1.

Also a positive correlation was found between age and the TSK score with r value of 0.407 and p value of 0.003 as seen in graph 2

### 1) CORRELATION BETWEEN VAS AND TSK SCORE



### 2) CORRELATION BETWEEN AGE AND TSK SCORE



hip arthroplasty with post-operative span of 4-8 weeks showed that majority of the patients (69.24%) had TSK scores below 37 indicating a low level of Kinesiophobia and less than half of the patients (30.76%) had TSK score above 37.

The study also showed that there was a strong positive correlation seen between the VAS and the TSK scores wherein most of the patients had lesser pain and thus lesser phobia which reinforces the findings of a previous study conducted in low back pain patients by Manoj Agnihotri and Gaurav Mahabal which concluded that as the NRS increases the Tsk score increases though not in a linear fashion thus indicating that pain intensity and Kinesiophobia are related. (3)

Also in this research a positive correlation was appreciated between age

## DISCUSSION

This study conducted on 52 subjects comprising of 33 males and 19 females who underwent either unilateral or bilateral total

and TSK score where in higher scores were seen in geriatric population which is supported by previous literature and reinforces the findings of a previous study conducted in elderly total knee arthroplasty patients by Filardo G, Roffi A, Merli G et al where the patients were assessed 4 times within a span of year which concluded that fear of pain and avoidance of movement are strongly correlated with acute post-operative pain perception and recovery after surgery upto one year. <sup>(8)</sup>

The incidence of lesser Kinesiophobia found in this study can be attributed to patient education and regular physical therapy sessions which most of them agreed to undergo when examined might have helped patients minimize their phobia Similar to the study conducted by Monticone M, Ferrante S, Rocca B et al where home based functional exercises helped managing Kinesiophobia in total knee arthroplasty patients. <sup>(9)</sup>

Also all the subjects in this study were using some form of an assistive device for ambulation which might have been one of the reasons for reduced Kinesiophobia. Studies show that use of an assistive device may help by alleviating pain, reducing fear of fall, increasing feeling of safety and confidence during ambulation which could have been the reasons for lesser Kinesiophobia in this study. <sup>(10)</sup>

Chief limitations of this study were that pre –operative status of the patients was not considered and no specific age group was selected. Also, no other functional outcome measure was used except the TSK for Kinesiophobia and VAS for pain assessment.

Further studies can be done to assess Kinesiophobia in immediate post-operative phase and at 8<sup>th</sup> week after physiotherapeutic intervention in THA patients.

## CONCLUSION

It can be concluded that low level of Kinesiophobia was present in majority of

patients with Total hip Arthroplasty with span of post-operative 4- 8 weeks.

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