

# Fear of Movement: Kinesiophobia in Knee Arthroplasty Cases- A Cross-Sectional Study.

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**Abstract** Kinesiophobia is a debilitating fear of physical movement and activity resulting from feeling of vulnerability to painful re-injury. Fear of worsening the pain on exercising leads to incomplete functional recovery. This relatively new documented disorder needs to be addressed as a priority for better post-operative outcomes

**Materials and Methods:** This study was conducted in 120 (60 unilateral and 60 bilateral)knee arthroplasty patients in their 1-3 weeks of rehabilitative phase. Tampa scale of kinesiophobia was used to to assess the occurrence of kinesiophobia in these subjects. A comparison between unilateral and bilateral scores were made.

**Results:** According to this study56.67% had kinesiophobia while 52 i.e 44.20% did not. 16 belonged to the group of high rate of kinesiophobia while 52 had low rate for the same. 22.50% bilateral cases had occurrence of kinesiophobia while 34.10.20% unilateral cases had kinesiophobia.

**Conclusion:** This study shows that a high degree of post-operative fear of movement occurred in most patients after total knee arthroplasty. The results were found higher in unilateral than the bilateral cases.

**Keywords:** Kinesiophobia, Tampa Scale, specific rehabilitative protocols.

## Introduction

Kinesiophobia is defined as a severe fear of movement where the patient feels that any form physical exertion will cause same re-injury which will be permanent. This relatively new concept was discovered to explain that some individuals develop stronger psychological reaction to their pain than others. There is extreme hesitancy to do any motor activity which could be in the form of negation or removing it from consciousness. [1,2]

Such avoidance behavior is commonly seen in the older adults/geriatric group where such cognitive pain related consequences lead to restriction of activities of daily living. The cause of these functional disabilities is the pain arising from fear-avoidance rather than the sensory experience of

pain. [2,3,4]

Many psychological factors influence the post-operative patients' mindset during the rehabilitation phase. Fear of worsening the existing pain on exercising is one of the most dominant thought. This leads to incomplete functional recovery and further deterioration. Fear of movement is addressed better if patients are counselled to not be a victim of their own movement avoidance behavior. [5,6]

## Materials and Methods

After institutional ethical clearance, this cross sectional study was conducted in a sample size of 120 which included 60 unilateral and 60 non-staged bilateral subjects of Pune city. Simple purposive sampling technique was used. Patients undergone knee arthroplasty, in their 1-2 weeks of post-operative period and who have undergone arthroplasty due to osteoarthritic condition were selected for this study, while patients with any previous limb surgeries, post traumatic, infective osteoarthritis or rheumatic cause were excluded. Tampa scale of kinesiophobia was used as an outcome

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Table 1.

	Number of subjects	Mean $\pm$ S.D	Median
High rate of kinesiophobia	16	46.65 $\pm$ 5.34	44
Low rate of kinesiophobia	52	39.20 $\pm$ 5.08	38

measure for assessing kinesiophobia which was filled by the subject alone and not by the relative or caregiver of the patient. After all the 17 questions were answered by the subjects, scores were calculated for each patient according to the scoring guideline of the scale. Comparisons were made between unilateral and bilateral subjects' scores respectively. Data obtained was analyzed using Microsoft office excel 2007. Graphical representation of data along with mean distance and standard deviations were calculated.

### Results

According to the cut off score on TSK scale suggested by Vlayen et al, 68 out of 120 subjects i.e. 56.67% had kinesiophobia while remaining 52 i.e. 44.20% did not. 16 subjects belonged to the group of high rate of kinesiophobia while remaining 52 belonged to the low rate kinesiophobia group. A comparison was made between the results obtained with unilateral and bilateral cases where 27 bilateral knee replacement cases, i.e 22.50% had occurrence of kinesiophobia whereas rest 41 i.e. 34.10.20% of unilateral cases suffered from kinesiophobia.

### Discussion

This study shows that fear of movement occurred in knee arthroplasty patients for osteoarthritis. According to this study, fear of movement significantly affects the perception of physical activity to be carried out post-operatively. This study was conducted for knee arthroplasty patients in 1-3 weeks of

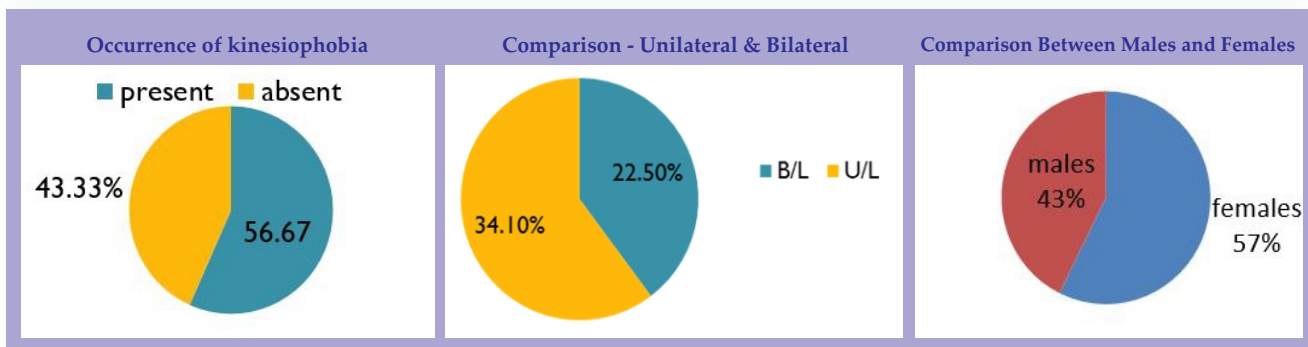
their post-operative phase. Supporting to this theory is a study conducted by Mirjana Kocic et al, where the results stated that the rate of kinesiophobia is noted to be highest in the first two weeks of post-operative phase. This study also showed that higher occurrence was seen in females than the males. Researchers have speculated that possible reasons for this fear included uncertainty about quality of future performances, fear of failure, loss of confidence and feeling of vulnerability. Similar studies have shown that fear of movement had a strong co-relation with pain, reduced range of flexion and restriction of activities. Some authors state that long term kinesiophobia has led to disuse of muscles leading to atrophy. [5,7,8]

According to this study, rate of kinesiophobia was higher in unilateral than the bilateral cases. Studies on joint proprioception in knee arthroplasty patients state that proprioception is better in replaced than the un-replaced arthritic knees. Also proprioceptive loss of the un-replaced arthritic knee remains to be a dominant factor contributing to lack of confidence and restriction of activities among arthroplasty patients. [8]

In accordance to various studies conducted on fear of movement, kinesiophobia is considered to be a potentially modifiable factor. In a study conducted by Monticone M ferrante. Et al, functional exercises aimed at managing kinesiophobia have contributed to better functional recovery of knee arthroplasty patients. These protocols included gradual increase in specific exercises and activities to help patients adapt to the movements and activities. In support to this my study states that identifying fear of movement calls for a priority while formulating treatment protocol. [6,9]

### Conclusion

This study shows that a high degree of post-operative fear of movement occurred in most patients after total knee arthroplasty. The results were found higher in unilateral than the bilateral cases.



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