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KINESIOPHOBIA AND QUALITY OF LIFE IN THE WEAN-OFF PHASE WITH WALKING AID USERS IN ARTHROSCOPIC REPAIRS: A CORRELATION STUDY.

Physiotherapy & Rehabilitation

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ABSTRACT

Background: Avoidance of activity is a natural reaction that allows an injury to heal, but in patients following arthroscopic surgery, avoidance behavior is found to last longer than the actual injury. This can result in kinesiophobia, an irrational, crippling, and devastating fear of movement, affecting the patients' quality of life. Hence, this correlation study aimed to determine how the domains and subdomains of Kinesiophobia (TSK-17) and Quality of Life (WHOQoL-BREF) interact in patients attempting to wean themselves off of walking aids. **Methodology:** With the ethical permission and informed consent of 42 arthroscopic patients who fulfilled the inclusion and exclusion criteria, two scales were administered to assess kinesiophobia (TSK-17) and QOL (WHOQoL-BREF). Data was gathered and statistically analyzed using Pearson's correlation coefficient. **Results:** The findings show that 71% of the study population had clinically significant kinesiophobia. Kinesiophobia was found to have a moderate negative correlation with the physical (r= -0.73) and psychological (r= -0.74) domains, a mild negative correlation with the environmental (r= -0.33) domain, and no correlation with the social (r= -0.10) domain. **Conclusion:** This study found a statistically significant inverse relationship between Kinesiophobia and the domains of quality of life. Thus, kinesiophobia merits further research during the weaning phase, and effective intervention strategies to reduce its impact on quality of life should be implemented.

KEYWORDS

Arthroscopic Repairs, Kinesiophobia, Quality Of Life, Wean Off Phase.

INTRODUCTION

Kinesiophobia [kinesis=movement] is a psycho-cognitive factor that can affect rehabilitation after orthopedic surgery and be a significant barrier to achieving adequate levels of physical activity. Vlaeyen et al's fear avoidance model includes kinesiophobia[fig.1][1] Due to the fear of performing daily tasks, kinesiophobia can start influencing an individual's daily activities and quality of life.[2] This perpetuates a fear cycle that leads to hypervigilance, which results in greater pain and an extended recovery time.[3]

In a study by Lundberg M et al., 56% of patients with musculoskeletal pain had kinesiophobia, which was more common in men (72%), than in women (48%).[4] Many people use mobility aids such as a cane, crutches, walker, rollator, or wheelchair to improve balance, walking pattern and to ensure their safety after a musculoskeletal injury. They admit that they have to focus more when moving, having to adjust their self-image, feeling watched, and have the impression that they take up more space due to the size of their walking aids.[5]

The World Health Organization defines quality of life (QOL) as "an individual's perception of their position in life in the context of the culture and value systems in which they live, and in relation to their goals, expectations, standards, and concerns." In a pilot study, Ana Tichonova et al claim that a higher level of kinesiophobia is associated with more difficulties in daily activities and a lower quality of life before and after rehabilitation.[6]

Fear of re-injury is a major cause of delayed recovery, decreased self-efficacy, decreased confidence, guarding behavior, and thus late discharge from the hospital. Brittney A Luc-Harkey et al state that further research is needed to examine the links between walking characteristics and kinesiophobia in the early stages of Anterior Cruciate Ligament Reconstruction, when patients are first attempting to walk without mobility aids.[7]

Although a lot of studies have been done on kinesiophobia, no study shows the correlation between kinesiophobia and quality of life in the wean off phase after an arthroscopic repair. As a result, the goal of this study was to see if kinesiophobia affects people during the weaning phase, as well as to examine the link between kinesiophobia and quality of life during the weaning phase.

Sources:

https://www.researchgate.net/figure/The-fear-avoidance-model-of-musculoskeletal-pain-adapted-from-Vlaeyen-JWS-Linton-SJ_fig1_7577433

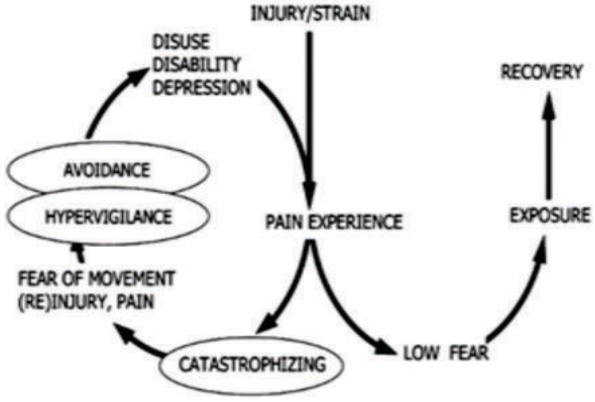


Figure 1: Fear Avoidance Model

MATERIALS AND METHODS:

Ethical approval was obtained from Institutional ethics committee of Dr. DY Patil college of Physiotherapy, with ethical approval number DYPCPT/ISEC/77/2022.

A correlational study was done for a duration of 6 months. 42 patients in the age group 18-60 years were selected from the population by purposive sampling. Both male and female patients who were willing to participate, have undergone one joint arthroscopic repair and were in the wean off phase after their knee arthroscopy were included from tertiary healthcare centres in Pune. All patients with significant neurological, cardiothoracic or other orthopedic condition, geriatric population or were pregnant were excluded.

The subjects were explained about the study and informed written consent was obtained. TSK-17 for kinesiophobia and WHOQoL-BREF for quality of life were the outcome measures used in the study. The scores were calculated accordingly and correlated.

DATA ANALYSIS AND RESULTS:

Data was compiled in Excel sheet and appropriate statistics were used. The data was analyzed using the MedCalc statistical software version 20.210 and Microsoft Excel 2019. Correlation was done using Pearson Correlation test.

In this study, the total number of participants selected was (n=42). The mean age of the participants was 34.47 (SD-10.54) out of them 24

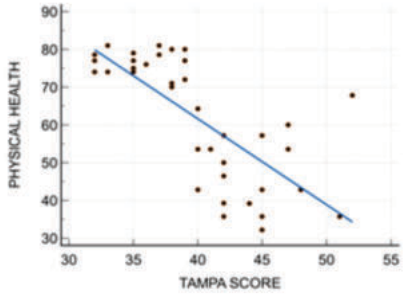
participants were males and 18 were females. Demographic details of the participants and outcome measures are given in the table- 1.

Table – 1: General Demographics

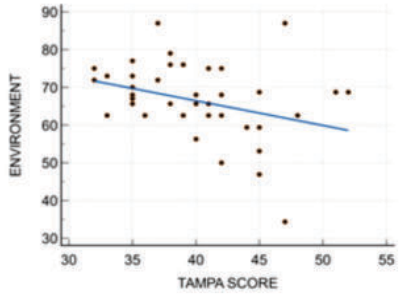
	Mean±Sd
Age	34.17±10.54
Tampa Scale	39±5.07
Physical Health Domain	61±15.91
Environment Domain	66±9.9
Psychological Domain	59±12.63
Social Domain	51±12.85

Table – 2: Prevalence Of Kinesiophobia

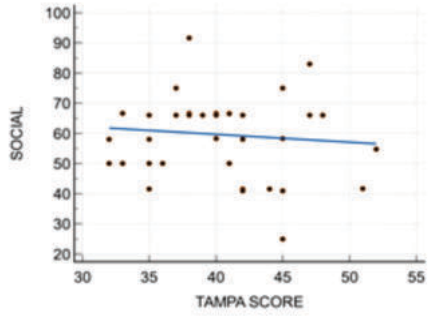
Prevalence Of Kinesiophobia	
Classification	Number
Kinesiophobia Present	30 (71%)
No Kinesiophobia	12 (29%)



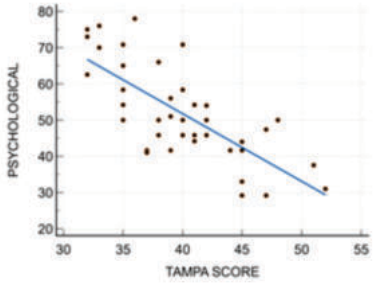
Graph – 1: Correlation Between Kinesiophobia And Physical Health Domain



Graph – 2: Correlation Between Kinesiophobia And Environmental Domain



Graph – 3: Correlation Between Kinesiophobia And Social Domain



Graph – 4: Correlation Between Kinesiophobia And Psychological Domain

Table – 3: Correlation Between Scores Of Kinesiophobia And Whoqol-bref Domains

Kinesiophobia And Domain	Correlation Coefficient (R)	Significance Level
Physical Health	-0.73	P<0.001
Environmental	-0.33	P=0.030
Social	-0.10	P=0.510
Psychological	-0.74	P<0.001

RESULTS

The prevalence of kinesiophobia is found to be 71% in the study population. The data when analyzed using Pearson correlation test, shows a negative correlation between both the TAMPA and WHOQoL-BREF scales. A statistically significant (P<0.001) moderate negative correlation between kinesiophobia and physical (r= -0.73) as well as psychological (r= -0.74) domain of quality of life is found. There is a mild negative correlation (r= -0.33) between kinesiophobia and environmental domain which is statistically significant. (P=0.03) Also, there is no statistically significant (P=0.51) correlation (r= -0.10) between kinesiophobia and social domain. This means that both the scales are inversely related.

DISCUSSION:

Many people experience musculoskeletal pain at some point in their lives,[8] and it is the second leading cause of disability in the general population.[9] Previous research reported 62% prevalence of kinesiophobia after arthroscopic surgeries.[10] According to George et al., activity and exercises are modified in the postoperative phase to allow for tissue healing. He also stated that a physiotherapist should identify people who have a persistently high level of kinesiophobia and then address it.[11]

Several established factors [physical, social, behavioral and environmental] have shown a poor prognosis after arthroscopic surgery, which explains why many individuals fail to fully recover after their episode, causing negative physical, social, and psychological consequences. Since the lower limb is among the most functional units of the body and little is known regarding kinesiophobia during the weaning phase, the current study sought to examine the link between fear of movement and quality of life after an arthroscopic repair in the weaning phase.

The following study was a correlation study that included 42 participants aged 18-60 years who were in their weaning phase after arthroscopy, with 24 male and 18 female participants. Data was gathered from tertiary healthcare centres. The TAMPA scale for kinesiophobia and the WHOQoL-BREF scale for assessing quality of life were used. TAMPA scores were correlated with all four WHOQoL-BREF domains using the Pearson correlation test.

After analyzing the data, it was observed that in the wean-off phase after an arthroscopy, out of the total 42 patients, kinesiophobia was prevalent in 30 (71%) and 12 (29%) had no kinesiophobia. Their kinesiophobia scores ranged from 32 to 52. Wong et al found that a higher kinesiophobia score predicted lower levels of quality of life at 6 months, even after managing sociodemographic factors and pain variables.[12]

The correlation test revealed a moderately negative correlation between kinesiophobia and physical domain of quality of life, implying that as kinesiophobia increases, so does physical quality of life. Pain and kinesiophobia can cause fatigue, which interferes with physical activity, exercise, and daily living activities, reducing patients' physical quality of life.[13]

There was a low negative correlation between kinesiophobia and environmental quality of life, indicating that a high level of kinesiophobia causes a slightly reduced environmental quality of life. Transportation, access to health care, leisure activities, and information access are all part of the environmental domain, as are healthy living conditions, safety, and financial independence (employment). Leeuw et al. hypothesized that rather than reducing all types of physical activity, patients are more likely to avoid activities that they think are associated to a greater risk of pain.[14] As a result, the environmental impact is influenced by individual perceptions of disability.

Similarly, kinesiophobia and psychological domain of quality of life

showed a moderate negative correlation. As kinesiophobia worsens, so does psychological well-being. Fear of movement and kinesiophobia are often used interchangeably in the literature; however, kinesiophobia is a more powerful concept with a phobic nature.[15] As a result, kinesiophobia leads to poor cognition, anxiety, and, in some cases, suicidal thoughts and depression.

Also, it was found that kinesiophobia does not affect the social quality of life. Kinesiophobia and pain-related disability are umbrella concepts that involve a wide range of domains such as self-care behaviors, physical, psychological, occupational, and social functioning. Friends, family, and hospital staff offered emotional support, information, and companionship to those who participated in the study, denying the influence of kinesiophobia on social quality of life.

Kinesiophobia has been identified as a barrier to adherence to rehabilitation.[16] Early detection and management of this modifiable factor may aid in pain relief and functional recovery. It could be accomplished by selecting functional goals, educating people on safe behaviors, and gradually exposing them to feared activities through cognitive therapy. Kinesiophobia assessment and management should be considered in order to provide a holistic and multimodal approach for understanding, planning, and rehabilitation of these patients.

CONCLUSION:

There is substantial evidence to indicate the increasing prevalence of kinesiophobia after arthroscopic surgery. In support of this, the following study reveals that kinesiophobia is prevalent during the weaning phase, affecting the patient's overall quality of life. Furthermore, this study also concludes that Kinesiophobia has a mild to moderate correlation with the environment, physical health and psychological domains of quality of life implying that even during the weaning phase, a high level of kinesiophobia was significantly associated with more difficulties in daily activities and a lower quality of life.

The limitations in this study were a small sample size and short duration of study. Also, the study population was not homogeneous in terms of age or gender and only those who were in the wean-off phase were included. For more accurate results, the study can be conducted in a larger population. Evaluating outcomes based on the time of injury and the time of surgery can be done. Influence of pre-rehabilitation on the psychosocial factors should also be considered.

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