



A Survey of Physiotherapist on Assessment of Kinesiophobia among Patients with Chronic Musculoskeletal Pain

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ABSTRACT: Patients with Chronic Musculoskeletal Pain (CMP) often show Kinesiophobia limiting the execution of exercise. Currently there is a dearth of literature and empirical evidence with respect to Kinesiophobia assessment. Effective rehabilitation will depend on its awareness among physiotherapist and its inclusion. The aim of this study was to understand the perception of physiotherapist on importance of Kinesiophobia assessment and to identify the inclusion by physiotherapist in the treatment of patients with CMP. Descriptive survey design was adapted to conduct this study. Through Non-probabilistic convenience sampling technique data was collected from 563 physiotherapists. The data was analyzed through mean and T-test through Statistical Package for the Social Sciences (SPSS). The values of T-test depicts that there is significant difference between means values ($p < .05$) for importance of Kinesiophobia assessment. For inclusion variable, the values of T-test depicts that there is no significant difference between means values ($p > .05$).

The results depict that physiotherapist perceive Kinesiophobia assessment as important and effective in the treatment of patients with CMP, whereas its inclusion is absent by physiotherapist in the treatment of patients with CMP. Screening for Kinesiophobia should be included in the basic Musculoskeletal assessment in CMP. Kinesiophobia should be taken into consideration when designing and performing rehabilitation programs. A better awareness will lead to better physiotherapy management.

Keywords: Kinesiophobia Assessment; Chronic Musculoskeletal Pain; Rehabilitation Program; Physiotherapist; Survey on Kinesiophobia.

INTRODUCTION

Most people suffer from musculoskeletal pain at least once in their life time. It is the second most common cause of disability in the general population (Cimmino *et al.*, 2011). Chronic widespread pain (CWP) due to musculoskeletal conditions is a major social burden (Cimmino *et al.*, 2011). Chronic musculoskeletal pain is ongoing pain in the bones and joints of the body, for example in the back or knees. The operational definition of Chronic musculoskeletal pain relies on pain, chronicity (more than 3 months' duration) and widespread distribution (both sides of the body including the axial skeleton) (Luque-Suarez *et al.*, 2019). It may be the result of a musculoskeletal disease or injury or the cause may not be known (Cimmino, *et al.*, 2011). It is often associated with reduced activity, sleep disturbance, fatigue and mood alterations, and can result in severe disability. There are many established factors (physical, biological, cognitive, behavioral,

social, occupational) associated with poor prognosis following the onset of musculoskeletal pain which helps to explain why many people do not recover after an episode of acute musculoskeletal pain, often resulting in a downward spiral of negative physical, social and psychological consequences (Vlaeyen *et al.*, 1999). Pain-related fear has been shown to be a very salient predictor of pain disability in a chronic pain population and is even more predictive than biomedical status and pain intensity (Crombez *et al.*, 1999). It has been stated that pain-related fear is more disabling than pain itself (George *et al.*, 2006). Pain-related fear predicts future disability and health status in the general population (Lundberg *et al.*, 2006). There are different terms for describing pain-related fear. In 1983, Lethem *et al.* introduced the "fear-avoidance" model. The model explains how and why some persons develop a stronger mental response to their pain problems than others. Due to pain, fear of any movement and exercise can probably worsen the problem, experiencing the

Kinesiophobia (fear of movement). Such fear enforces a barrier when exercise is given as part of management causing reduced devotion to treatment and a negative experience with pain (Kori, 1990) subsequently applied the ideas about fear-avoidance to chronic pain and physical movement, with the introduction of the term “Kinesiophobia” in 1990 (Miller *et al.*, 1991). Kinesiophobia is “a condition in which a patient has an excessive, irrational and debilitating fear of physical movement and activity resulting from a feeling of vulnerability to painful injury or re-injury” Vlaeyen *et al.* (2000) explained Kinesiophobia as a fear of movement/(re)injury, a precise fear causing injury or re-injury. Several questionnaires have been developed to quantify pain-related fears including the Fear Avoidance Beliefs Questionnaire (FABQ); the Pain Anxiety Symptoms Scale (PASS) (Vlaeyen *et al.*, 2000) and the Tampa Scale for Kinesiophobia (TSK) (Roelf's, *et al.*, 2007). The TSK was designed for the assessment of Kinesiophobia (Miller *et al.*, 1991). The Tampa Scale of Kinesiophobia is a 17-item instrument measuring fear of movement, pain and injury. It was originally developed for use with Chronic low back pain patients and has been validated in other populations of people with musculoskeletal pain (Cook *et al.*, 2006) as well as heterogeneous chronic pain samples. The TSK has good construct validity and internal consistency reliability ranging from adequate to good ($\alpha = 0.76$ to $\alpha = 0.84$) (French *et al.*, 2007). The total score ranges between 17 and 68. A high value on the TSK indicates a high degree of Kinesiophobia, and a cutoff score was developed by (Vlaeyen, 1995, Buer *et al.*, 2002) where scores below 37 are considered as low scores whereas a score more than 37 is said to be high.

The prevalence of Kinesiophobia in persistent pain ranges from 50% to 70%. It can be developed through two forms: a direct aversive experience (e.g., pain or trauma) or social learning (observation and training). Kinesiophobia may be related with pain and related outcomes (disability and quality of life) in numerous ways. First, Kinesiophobia alters how people move, possibly with the initial goal to avoid pain. It causes adjustments of motor behavior which affects the performance of actions related to the management and control of pain and pain-related disability. Second, the processing of pain and pain-related information in people with Chronic Musculoskeletal Pain (CMP) could be related to how Kinesiophobia is perceived (Cimmino *et al.*, 2011). From a psychological perspective it is also important to be able to differentiate between functional disabilities due to a sensory experience of pain and behaviors that are driven by fear-avoidance. The association between Kinesiophobia, disability and physical performance has been investigated previously (McCracken *et al.*, 1992). According to the scoping review of RCTs by Bordeleau *et al.* (2022) physical exercises is the most used approach to deal with irrational fear of movement, and Future RCTs should

consider the level of Kinesiophobia as an eligibility criterion, as well as multidisciplinary interventions that can help patients challenge their irrational fear of movement while considering the patient's personal biological, psychological, and social experiences with pain and Kinesiophobia.

Fear of movement imposes a barrier when exercise is prescribed as part of management resulting in significant clinical implications including reduced adherence to treatment and perseverance of a negative experience with pain (Lundberg *et al.*, 2006). However, there is relatively limited evidence about screening of Kinesiophobia by physiotherapist in chronic musculoskeletal pain. Effective rehabilitation will depend on the awareness of Kinesiophobia among physiotherapist. Hence, the purpose of this study is to understand the perception of physiotherapist on importance of Kinesiophobia assessment and its inclusion in the treatment of patients with chronic musculoskeletal pain, to make better usage of knowledge in the clinical field, to plan a more effective and integrated rehabilitation program.

MATERIAL AND METHODS

A Descriptive survey study was conducted on September and October 2022 among physiotherapist treating chronic musculoskeletal pain conditions in hospitals and institutions in India Ethical approval for the study was provided by the Institutional Ethical Committee. Written consent was sought from each participant for use of survey data. Inclusion criteria for Physiotherapist were; Membership of the Indian Association of Physiotherapist and Experience of treating Chronic musculoskeletal pain conditions

Primary data collection method was adopted to collect first-hand information from the respondents. The primary data was collected through structured questionnaires formulated Questions from the respondents. Prior to the main study a pilot test of the questionnaire was carried out. Six physiotherapists expert in Musculoskeletal Physiotherapy were asked to answer the questionnaire for comments on layout and contents. The questionnaire was then modified and some questions were rephrased to ensure correct formulation of the survey questions

Sample size for the study was calculated using Solvin's formula and was either 396 or greater than 396. The sample respondents were selected through non-probabilistic convenience sampling technique and questionnaires were distributed online through Google forms. The data were collected directly to Google docs after the respondents had filled their responses. The data which were complete and fulfilled the inclusion criteria were then exported to excel sheet for further analysis.

For the purpose of this study, Statistical Package for the Social Sciences (SPSS - Version 21) was adopted as analytical tool to analyze the data. The hypothesis was tested using one sample t test. Mean and standard

deviation of the data was also assessed to check the

RESULTS AND DISCUSSION

Total 915 completed responses were received and 563 responses fulfilled the inclusion criteria and used for analysis to test the hypothesis. Hence, the sample size of the study was 563. In this survey 90% were female Physiotherapist and 63% were in the age group 24-35 years, 14% were 35 to 50 years, 18-24 years were 20% and above 50 years were 3%.

Descriptive statistics of the data is mentioned in table 1 and the mean score depicts that the physiotherapist perceives Kinesiophobia assessment as important in treatment of patients with CMP as mean value is 3.56 which is greater than 3, whereas physiotherapist does not include Kinesiophobia assessment in treatment of patients with CMP as mean value is 2.14 which is less than 3. The standard deviation is under acceptable normal range for both the variables.

Table 1: Descriptive Statistics.

N	Importance		Inclusion	
	Valid	Missing	Valid	Missing
	563	0	563	0
Mean	3.56		2.14	
Std. Deviation	.892		.674	
Skewness	-.513		-.180	
Kurtosis	.206		-.814	
Minimum	1		1	
Maximum	5		3	

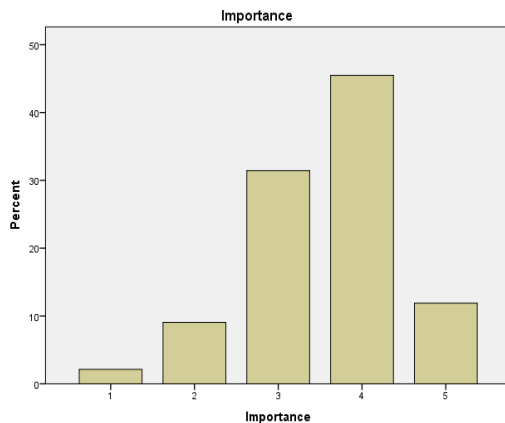


Fig. 1. Importance of Kinesiophobia assessment.

Table 2: One-Sample T Test.

	Test Value = 0					
	T	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Importance	94.728	562	.000	3.560	3.49	3.63
Inclusion	75.467	562	.071	2.144	2.09	-2.20

descriptive statistics for the variables.

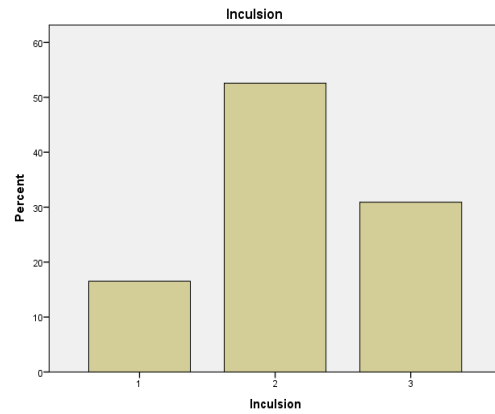


Fig. 1. Inclusion of Kinesiophobia assessment.

The results for one sample T-test are mentioned in Table 2. For importance variable, the values of T-test depicts that there is a statistically significant difference between means values ($p < .05$) for importance of Kinesiophobia assessment. Therefore, null hypothesis is rejected and hence H1 is accepted, whereas, for inclusion variable, the values of T-test depicts that there is no statistically significant difference between means values ($p > .05$) i.e., H2 is rejected. Therefore, null hypothesis is accepted.

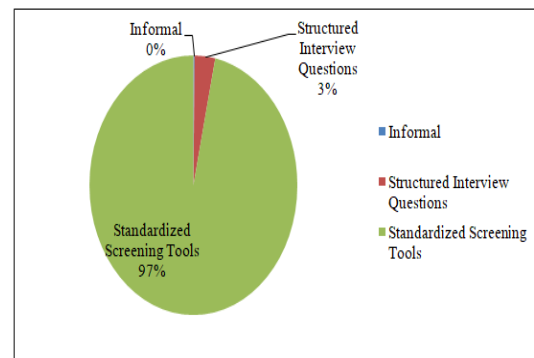


Fig. 2. Percentage of assessment methods used by Physiotherapist to assess Kinesiophobia in Chronic Musculoskeletal pain.

Table 1: The preferred assessment methods used by Physiotherapist to assess Kinesiophobia in Chronic Musculoskeletal pain.

Assessment Method	Count
Informal	1
Structured Interview Questions	18
Standardized Screening Tools	544
Total	563

Table 2: Assessment of Kinesiophobia needs more refinement in musculoskeletal pain.

Refinement	Count
Strongly Disagree	0
Disagree	0
Neutral	3
Agree	492
Strongly Agree	68
Total	563

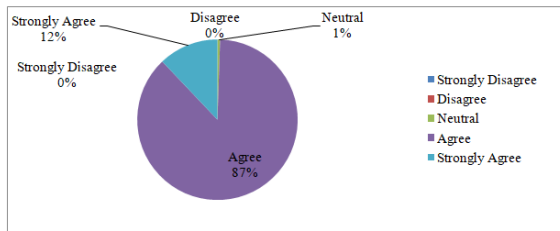


Fig. 3. Assessment of Kinesiophobia needs more refinement in musculoskeletal pain.

Table 3: Assessment of Kinesiophobia may lead to better rehabilitation program.

Better Rehabilitation Program	Count
Strongly Disagree	0
Disagree	0
Neutral	3
Agree	492
Strongly Agree	68
Total	563

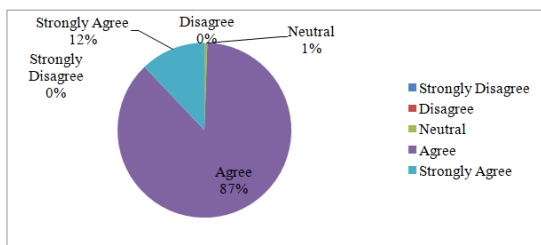


Fig. 4. Assessment of Kinesiophobia may lead to better rehabilitation program.

Main survey findings. This is the first survey to find the Physiotherapists perception of Kinesiophobia assessment in Chronic Musculoskeletal pain conditions. All the 563 responses treated patients with Chronic Musculoskeletal pain. 96.8% did not screen chronic musculoskeletal patients for Kinesiophobia (Fig 2) however 96.1 %considered it to be important (Fig. 1) and 89.2% agreed that assessment of Kinesiophobia may lead to better rehabilitation program (Fig. 5). The main reason could be lack of time or awareness and

availability of tools used to measure Kinesiophobia. 97% of the Physiotherapist preferred Standardized Structured Questionnaire as assessment to assess Kinesiophobia in Chronic Musculoskeletal pain (Fig. 3) and 87% agreed that Kinesiophobia assessment needs more refinement in Chronic Musculoskeletal pain (Fig. 4).

Many studies have found strong evidence for an association between greater level of Kinesiophobia and greater pain intensity, disability and low quality of life. In the scopic review by Bordeleau *et al.* (2022). Kinesiophobia was considered as a primary outcome in all included studies, only two of them considered Kinesiophobia as an eligibility criterion for participants' selection. This presents a challenge when evaluating an intervention for Kinesiophobia in participants who may or not be Kinesiophobia and emphasizes how important it is for investigators to define appropriate inclusion and exclusion criteria when designing a study (Pitino and Ferreira 2018).

It is clear from survey findings that Kinesiophobia is not assessed and managed by Physiotherapists in Chronic Musculoskeletal pain conditions. In addition, the focus of most is on musculoskeletal pain conditions in general, rather than an integrated approach.

The survey provides information that may be useful in research as well as development and implementation of clinical practice guidelines in Physiotherapy.

CONCLUSIONS

Results depict that physiotherapist perceive Kinesiophobia assessment as important and effective in treatment of patients with CMP, whereas its inclusion is absent by Physiotherapist in the assessment of patients with CMP. Majority of the Physiotherapist preferred Standardized Screening tools and agreed that refinement is necessary for Kinesiophobia assessment in CMP and also agreed that including Kinesiophobia assessment may lead to a better Rehabilitation program.

FUTURE SCOPE

The result of the present study may be used in the basic musculoskeletal assessment in CMP. Further researches can consider Kinesiophobia when designing and performing rehabilitation programs. Future awareness will lead to better physiotherapy management. Refinement is needed and replication in a larger sample. Results could assist the development of a structured formal training framework.

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Conflicts of Interest. None.

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