

PREVALENCE OF KINESIOPHOBIA AMONG THE GERIATRIC POPULATION OF KARACHI**Mubarak Ali**Hamdard University, Karachi
Mubarak.mam.ali@gmail.com**Maria Lucky**Jinnah Sindh Medical University
(AAPNA), Karachi.**Kashmala Zia**Northwest Institute of Health
Sciences, Peshawar**Sana Inayat**Hayat Institute of Rehabilitation
Medicine**Komal Fayyaz**

PNS Shifa Hospital, Karachi.

Ajay DherwaniLiaquat National School of
Physiotherapy.**Muhammad Haris**

Indus University, Karachi.

Anum IrshadBrain and Mind Diagnostic
Rehabilitation Centre, Karachi**Sumia**Bahria University Health Sciences,
Karachi**Komal Jamil**Bahria University Health Sciences,
Karachi. (Corresponding Author)
komalansar4@gmail.comDOI: <https://doi.org/10.71146/kjmr152>**Article Info**

This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license <https://creativecommons.org/licenses/by/4.0>

Abstract**Background**

A condition in which a person feels fear regarding performing their activities or in simple words, we can say that people feel pain while they are moving. This condition is known as Kinesio phobia. A study conducted in China showed that the prevalence rate of Kinesio phobia is about 57.01 percent. In the geriatric population, the main factor of fear is falling from the movement, and through this fear, they decrease their activities and enhance the chance of impaired balance and falls.

Objective

To determine the prevalence of Kinesio phobia among the geriatric population of Karachi.

Methodology

The cross-sectional study was conducted from April 2024 to Sep 2024 in Karachi to explore the prevalence of Kinesio phobia and the level of pain in the geriatric population. The sample size was 385 and the non-probability convenient sampling technique was used. Data was evaluated by two validated tools: TSK-11, and VAS scale. The data was analyzed through SPSS version 23.0.

Result

A total number of 385 research participants were included in this study. The prevalence of Kinesio phobia was found 299(77.66%) among geriatric population. The fear of exercise due to the risk of injury was found in 29 (7.53%) and 87 (22.59%). The feeling of pain in post-exercise was found in 175 (45.45%) and 107(27.79%). The participants stop doing exercise due to pain were: 128 (33.24%) and 108 (20.05%) The perception of research participants related to their fragile health status in comparison to others are: 116 (30.12%) and 171 (44.41%).

Conclusion

The Prevalence of the Kinesio phobia among geriatric population was found higher in females as compared to males.

Keywords: *Older adults, TSK-11, VAS, physical activity, Pain, fear of movement, and disability.*

Introduction

Geriatric age is the last stage of the life span of the individual. It is the irreversible reaction of the mental, financial, social, and physical components of the life of a human being.[1] In 2023, around one-tenth population of Turkey will be 65 to 85 years old.[2] In the geriatric population, the main factor of fear is falling from the movement, and through this fear, they decrease their activities and enhance the chance of impaired balance and falls.[3] In geriatric people, the gait changes also matter in the fear of falls and it should be considered in both physiological changes (decreased muscle power, loss of sensory sensations, and loss of muscle strength) and mental status (falling fear).[4] A condition in which a person feels fear regarding performing their activities or in simple words, we can say that people feel pain while they are moving. This condition is known as Kinesio phobia This type of person feels irritation and shows aggressive behavior to do any type of physical activity due to pain.[5] A study conducted in China showed that the prevalence rate of Kinesio phobia is about 57.01 percent.[6]

Pain is the major cause of disability around the world. Pain affects the person in different aspects psychological, social, and physical that influence the model of fear avoidance. In this model person faces pain in the initial stage and it turns into the long-term stage this can affect the life of an individual and gives the view that performing their movement or any other activity will cause pain and lead to further injuries. This model also gives a brief review of pain links with fear and safety attitudes among the patients. The main component of this model comprises movement of fear as well as Kinesio phobia in which patient feels excessive levels of pain while performing their activities.[7-9] Kinesio phobia, around 51 to 72 percent of patients suffer from chronic pain, enhances alertness, and is more prone to

disability which leads to an increase in the sensation of pain.[10] On the other hand, people know the level of fear and irritability and they believe that when they avoid their activities it gives them adverse reactions and slows down their functional activities.[11]

The term Kinesio phobia is related to the intensity of pain and impairment of people who suffer from long-term pain.[12] It must be considered that exercise is a very important part of rehabilitation and better treatment results for Kinesio phobic patients.[13] In old age people, Kinesio phobia lies with many conditions like low backache, pain in the shoulders, and lethargic issues which impact the daily activities of the people and also know the levels of Kinesio phobia. It may be obtained from face-to-face interactions with the situations like pain or any type of accident or may be it learned by their social environment as they observe. [14] To assess movement fear there are many questionnaires were developed such as the Pain Anxiety Scale, Fear Avoidance, and Tampa Scale of Kinesio phobic patients. To assess the level of fear in these patients the best scale we choose that the Tampa Scale. The study aims to determine the prevalence of Kinesio phobia among the geriatric population of Karachi.

METHODOLOGY

A cross-sectional survey-based study was conducted among the geriatric population of Karachi between April 2024 to Sep 2024. The subjects were selected from seven districts of Karachi (East, West, Malir, Korangi, South, North, Central) based on a non-probability convenient sampling technique. The sample size of 385 was calculated through Raosoft.com software at a confidence interval was 95% with a 5% margin of error. In inclusion criteria, both male and female geriatric people, According to WHO (World Health Organization), age group between 60 to more than 80 years[15] were

included. In exclusion criteria subjects with rheumatoid arthritis, ankylosing spondylitis, gout, and those who are not willing to participate in the study were excluded. All the patients were prior informed about the protocols of the study and the written consent form was taken before the collection of data. In this study there were two validated tools were used to assess the level of Kinesio-phobia through the Tampa scale 11 (TSK-11) and the severity of pain through the Visual Analog Scale. The TSK-11 (Tampa Scale 11) is a four-Likert scale and a reliable tool to measure the psychometric properties of people it was comprised of 11 questions to assess the level of Kinesio phobia and the consistency of internal feelings. and VAS (Visual Analog Scale) for the pain assessment.[16] For the measurement of pain a worldwide tool was used i.e. VAS (Visual analog scale) rating from 0 (no pain) to 10 (severe pain) In this scale Kinesio phobia patients was asked by the researcher to mark the score according to the severity of pain, 1 to 4 is considered as mild pain, 5 to 7 considered as moderate pain, while 8 to 10 is considered as severe pain.[17] The analysis of data was done through SPSS version 23.0 software. The frequencies and percentages were calculated and the P value ≤ 0.05 was considered as a level of significance.

RESULT

A total number of 385 research participants was recruited from the geriatric population between the age group of 60 to more than 80 years. The participants ranging from 60 to 69 years were 184 (47.17%), 70 to 79 years were 165 (42.85%), and more than 80 years were 36 (9.35%).

From the research participants, the number of male population was 179 (46.49%), and female was 206 (53.50%).

According to the social status, there were 86 (22.33%) research participants belonged to the lower class, 183 (47.53%) belonged to the middle status and 116 (30.27.79 %) were related to the upper class.

The presence of comorbid conditions(diabetes, hypertension, chronic kidney disease)[18] seemed to be present in 278 (72.20%) research participants while 107 (27.79%) had the absence of any comorbid condition. All variables of research with their frequencies are shown in Table no: 1.

Table no:1 Demographic Variables of Research Participants

Variables	Frequency (%)
<u>AGE</u>	
60-69	184 (47.17%)
70-79	165(42.85%)
>80	36 (9.35%)
<u>GENDER</u>	
Male	179 (46.49%)
Female	206 (53.50%)
<u>STATUS</u>	
Lower class	86 (22.33%)
Middle class	183 (47.53%)
Upper class	116 (30.12%)
<u>COMORBID CONDITIONS</u>	
	278 (72.20%)

Yes	107 (27.79%)
No	

According to the questionnaire all the questions related to Kinesio phobia in research participants. In the response to a question related to the fear of exercise due to the risk of injury, 29 (7.53%) responded strongly agree, 87 (22.59%) responded disagree, 188 (48.83%) responded agree and 81 (21.03%) responded strongly agree.

In response to the question related to the feeling of pain after doing exercise 57(14.80%) replied strongly disagree, 46 (11.94%) replied disagree, 175 (45.45%) replied agree and 107(27.79%) replied strongly agree.

The question related to the alarming sign of the body as perceived by the research participants 42 (10.90%) responded strongly disagree, 51 (13.24%) responded disagree, 169(43.89%) responded agree while 123(31.94%) responded strongly agree.

In answer to the question related to the family regarding the condition of the patient 104 (27.01%) answered strongly disagree, 123 (31.94%) answered disagree, 77 (20%) answered agree and 81 (21.03%) answered strongly agree.

In response to the question related to the risk of incidence after the occurrence of past incidence 64 (16.62%) participants responded strongly disagree, 76 (19.74%) responded disagree, 144 (37.40%) responded agree while 101 (26.23%) responded strongly agree.

According to the perception of the research participants, regarding the meaning of pain in the body 36 (9.35%) replied strongly disagree, 59(15.32%) replied disagree, 121 (31.42%)

replied agree and 169 (43.89%) replied strongly agree.

The question related to the avoidance of movement to reduce the chance of pain and injury 47 (12.20%)

responded strongly disagree, 65 (16.88%) responded agree, 175 (45.45%) responded agree and 98 (25.45%) responded strongly agree.

According to the answers to a question related to the enhancement of pain whenever doing something with their body 52 (13.50%) responded strongly disagree, 38 (9.87%) responded disagree, 174 (45.19%) responded agree and 121 (31.42%) were responded strongly agree.

For the question related to the stopping of exercise due to pain 65 (16.88%)replied strongly disagree, 84 (21.81%) replied disagree, 128 (33.24%) replied agree and 108 (28.05%) replied strongly agree.

According to the question related to the perception of research participants regarding the fragile status of health as compared to the other people 37 (9.61%) responded strongly disagree, 61 (15.84%) responded disagree, 116 (30.12%)responded agree and 171 (44.41%) were responded strongly agree.

According to the research participants that they should not do exercise while having pain 39 (10.12%) answered strongly disagree, 53 (13.76%) responded disagree, 131 (34.02%) responded agree while 162 (42.07%) responded strongly agree as shown in table no 2.

Table 2:Responses of TSK-11 Scale

QUESTIONS	Strongly disagree	Disagree	Agree	Strongly agree
-----------	-------------------	----------	-------	----------------

Fear of exercise due to risk of injury	29 (7.53%)	87 (22.59%)	188 (48.83%)	81 (21.03%)
If I tried to do exercise that may cause pain	57 (14.80%)	46 (11.94%)	175 (45.45%)	107 (27.79%)
My body is alarmed about doing something wrong.	42 (10.90%)	51 (13.24%)	169 (43.89%)	123 (31.94%)
No one has taken serious action towards my health.	104 (27.01%)	123 (31.94%)	77 (20%)	81 (21.03%)
Past incidence increases the risk to my health.	64 (16.62%)	76 (19.74%)	144 (37.40%)	101 (26.23%)
The meaning of pain in the body is the presence of injury.	36 (9.35%)	59(15.32%)	121 (31.42%)	169 (43.89%)
Doing no movement can save me from further injury & pain.	47 (12.20%)	65 (16.88%)	175 (45.45%)	98 (25.45%)
No harm can enhance my pain until something is done with my body.	52 (13.50%)	38 (9.87%)	174 (45.19%)	121 (31.42%)
Pain tells me when to stop doing exercise.	65 (16.88%)	84 (21.81%)	128 (33.24%)	108 (28.05%)
I am very fragile for having injuries rather than normal people.	37 (9.61%)	61 (15.84%)	116 (30.12%)	171 (44.41%)
We shouldn't do exercise while suffering from pain.	39 (10.12%)	53 (13.76%)	131 (34.02%)	162 (42.07%)

The prevalence of Kinesio phobia was found in 299(77.66%) and absent in 86(23.33%) among research participants as shown in Figure:1

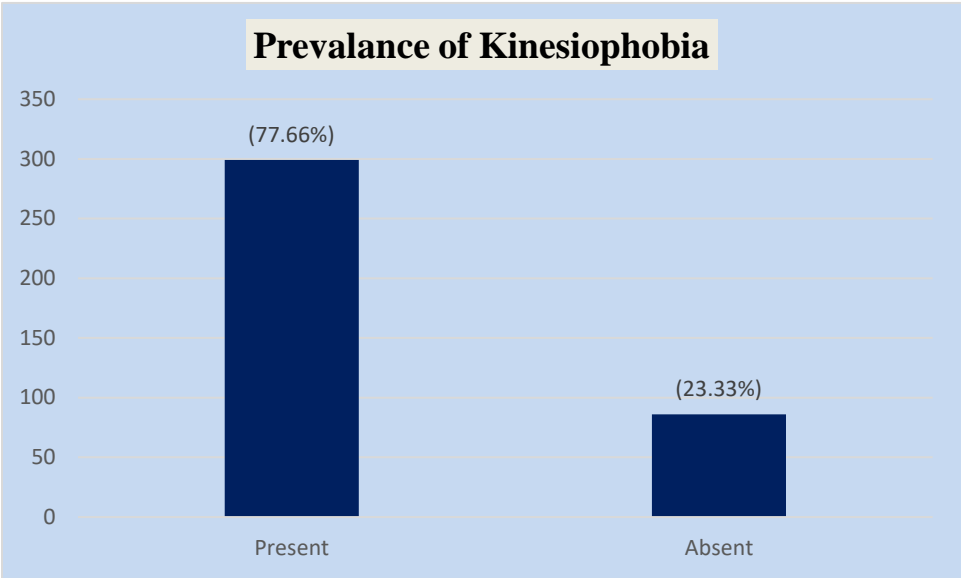


Figure no:1 Prevalence of Kinesio phobia among Research Participants

The prevalence of Kinesio phobia found among males was (126) 70.39% and 173 (83.98%) in female research participants as shown in Figure:2

research 38(9.87%) participants had no pain, 61 (15.84%) research participants had mild pain, 83 (21.55%) had moderate pain, 72 (28.05%) had severe pain, 23 (18.70%) having very severe pain while 23 (5.97%) having worse pain as shown in Figure no: 3

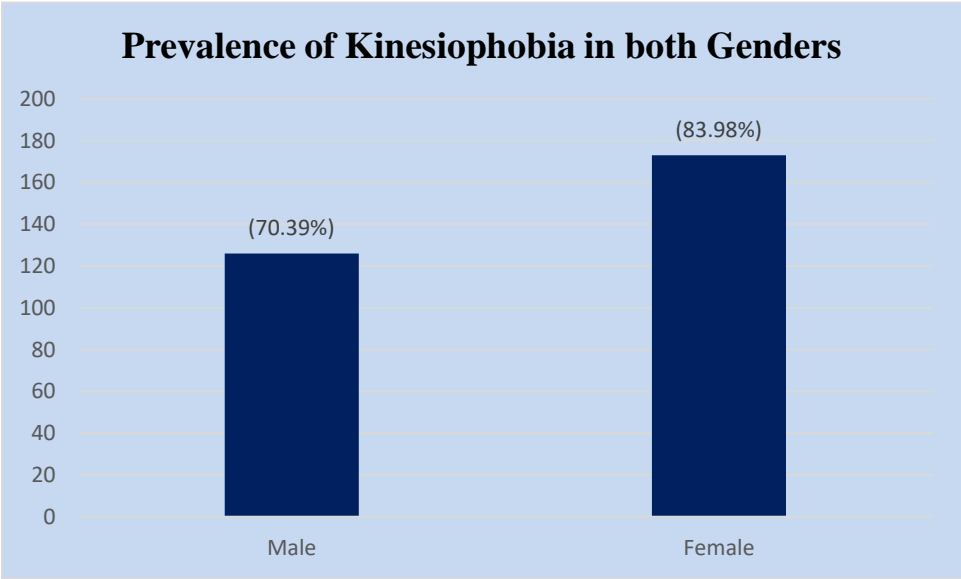


Figure no:2 Prevalence of Kinesio phobia according to Genders

The severity of pain was only measured in Kinesio phobic patients through the VAS scale. According to the observation from the present

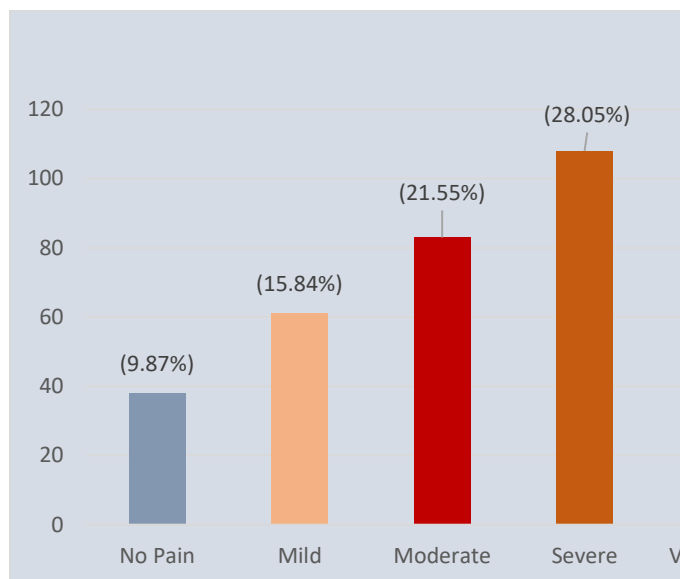


Figure no:3 Severity of Pain according to VAS (Visual Analogue Scale)

DISCUSSION

Kinesio phobia is the fear of injury or trauma which is directly related to past experiences in life. A study reported the prevalence of Kinesio phobia in young adults with ACL(Anterior cruciate ligament tear) was: 57.01%.[6] while in the present study, the prevalence of Kinesio phobia was observed among the geriatric population of Karachi. In which the fear of exercise due to the risk of injury seems to be (48+21) in 69% of the geriatric population. The evaluation of physical function was also influenced by the presence of Kinesio phobia in the geriatric population. The measuring tool Tampa scale(TSK 11)used in this study to evaluate Kinesio phobia was correlated with Western Ontario McMaster's universities osteoarthritis scale. (WOMAC). [19] A systematic review conducted in Spain revealed that there is a positive relationship between Kinesio phobia with the severity of pain which showed the strong level of disability found in low quality of life among people.[20] However, in our study, the feeling of pain seemed to be in (45+27)in 72% of research respondents.

Kinesio phobia is also related to musculoskeletal issues and the severity of pain. The severity of pain was evaluated by VAS(Visual analog scale)

and the level of Kinesio phobia was evaluated by the validated tool. Both factors were related to each other, as there may be a negative effect on the physical function of the affected patient who was under the treatment of rehabilitation.[21] According to the behavior of family, a study done in China reported, that the level and the fear of pain for the performing the activities after injury was higher among the family members compared to the patients themselves.[6] However in our study, (20+21) 41% of research participants agree regarding the serious and supportive behavior of family towards their condition.[22] In our study, the response of respondents regarding the recurrence of injury was positive in (37+26) 63% As compared to this, in a study done in Italy, the fear of injury was found with Kinesio phobia may be correlated with pain, function, and quality of life. To resolve this problem we could recommend the multi-professional approach to overcome their psychological issues related to the specific life-changing events which can enhance their quality of life and reduce disability.[23]

There were (33+28) 61% of research respondents seemed to stop doing exercise due to the severity of their pain a study done in Brazil reported, that people who are doing exercise were presented with a lower risk of recurrence injury, pain, disability as compared to the people who are not doing exercises. [24] Another study reported, the effects of Kinesio phobia among people with back pain, fatigue, dementia, and musculoskeletal issues) these problems have been associated with pain severity and disability of the physical and brain.[25]

From our study (34+42) 76% of respondents thought that they should not do exercise in the presence of pain compared to this a study conducted in the USA revealed, that the effectiveness of exercise depends on the type of condition as well as it has a direct or indirect effect on pain and some effective interventions which help to promote physical activity and reduction of pain are counseling, exercise treatment can itself reduce pain in long term basis. [26]. Another study reported the fear of

movement and kynophobia can be controlled by acquiring a specific learning program.[27] The consistency of physical activity in daily life is difficult to adopt due to the comorbid conditions as well as the severity of pain in the adult population.

CONCLUSION

The prevalence of Kinesio phobia was found more in females as compared to males and higher rate in females. These all collectively cause a reduction in quality of life in females as compared to males. Therefore, the recommendation of physical therapy as well as counseling by specialized healthcare professionals can improve Kinesio phobia in the older population and improve their quality of them.

REFERENCES

1. Alpalhao V, Cordeiro N, Pezarat-Correia P. Kinesio phobia and fear avoidance in older adults: a scoping review on the state of research activity. *Journal of Aging and Physical Activity*. 2022 Mar 18;30(6):1075-84.
2. Ercan S, Küçük F, Örsçelik A, Çetin C. Musculoskeletal pain, Kinesio phobia, and quality of life in obese patients. *The European Research Journal*. 2023 Jul 1;9(4):665-73.
3. Sartell M, Aydoğan Arslan S, Tütün Yümin E, Demirci CS, Tarsuslu Şimşek T. Investigation of the relationship between physical activity, Kinesio phobia and fear of falling in older adults with chronic pain. *Somatosensory & Motor Research*. 2021 Jul 3;38(3):241-7.
4. Uchida K, Murata S, Kawa Harada R, Tsuboi Y, Isa T, Okumura M, Matsuda N, Nakatsuka K, Horibe K, Kogaki M, Ono R. Association between Kinesio phobia and life space among community-dwelling older people with chronic musculoskeletal pain. *Pain Medicine*. 2020 Dec;21(12):3360-5.
5. Jesingh N, Dhankher P. Association of Kinesio phobia with physical function in chronic pain-free older adults. *Journal of the Indian Academy of Geriatrics*. 2023 Jul 1;19(3).
6. Lyu FF, Ying H, Zhang M, Xia LR, Liu Q, Cai L. Prevalence and influencing factors of Kinesio phobia in older patients with primary osteoporosis: A cross-sectional survey. *Geriatric Nursing*. 2024 May 1;57:58-65.
7. Tan M, Liu Y, Li J, Ji X, Zou Y, Zhang Y, Li H. Factors associated with Kinesio phobia in Chinese older adults patients with osteoarthritis of the knee: A cross-sectional survey. *Geriatric Nursing*. 2022 Nov 1;48:8-13.
8. Ekediegwu EC, Akpaenyi CE, Nwosu IB, Onyeso OK. Demographic and disease characteristics associated with pain intensity, Kinesio phobia, balance, and fall self-efficacy among people with osteoarthritis: a cross-sectional study. *BMC musculoskeletal disorders*. 2022 Jun 6;23(1):544.
9. Felício DC, Elias Filho J, Pereira DS, Queiroz BZ, Leopoldina AA, Rocha VT, Pereira LS. The effect of Kinesio phobia in older people with acute low back pain: longitudinal data from Back Complaints in the Elders (BACE). *Cadernos de Saúde Pública*. 2021 Dec 15;37:e00232920.
10. John JN, Ugwu EC, Okezue OC, Ekechukwu EN, Mgbefredo UG, John DO, Ezeukwu AO. Kinesio phobia and associated factors among patients with chronic non-specific low back pain. *Disability and Rehabilitation*. 2023 Jul 31;45(16):2651-9.
11. Abit Kocaman A, Aydoğan Arslan S. Comparison of gait speed, dynamic balance, and dual-task balance performance according to Kinesio phobia level in older adults. *Somatosensory & Motor Research*. 2023 Jul 3;40(3):83-9.
12. Mishra M, Naik VR. A Cross-Sectional Study for Correlation of Kinesio phobia with Low Back Disability and Health-Related Quality of Life in Elderly Patients with Chronic Low Back Pain. *Indian Journal of Pain*. 2021 Sep 1;35(3):215-20.
13. Lozano-Meca J, Gacto-Sánchez M, Montilla-Herrador J. Association of Kinesio phobia with pain, disability and functional limitation in adults with knee osteoarthritis: A systematic review and meta-analysis. *Geriatric Nursing*. 2024 Nov 1;60:481-90.
14. Cemali M, Sarı M, Öztürk D, Elmas Ö, Karaduman AA. Examination of the Relationship Between Sensory Processing Skills, Kinesio phobia and Fear of Falling in Older Adults with Hypertension and Normotension. *Experimental Aging Research*. 2024 Sep 3:1-3.
15. Rudnicka E, Napierała P, Podfigurna A, Męczekalski B, Smolarczyk R,

- Grymowicz M. The World Health Organization (WHO) approach to healthy ageing. *Maturitas*. 2020 Sep 1;139:6-11.
16. Young Charoen P, Sara boon Y, Aree-Ue S, Chintapanyakun T, Kawinwonggowit V. Psychometric Properties of the Thai Tampa Scale of Kinesio phobia among Older People with Knee Osteoarthritis. *Journal of the Medical Association of Thailand*. 2021 Aug 1;104(8).
 17. Kolltveit J, Osaland M, Reimers M, Berle M. A comparison of pain registration by Visual Analog Scale and Numeric Rating Scale—a cross-sectional study of primary triage registration. *Medrxiv*. 2020 Nov 4:2020-11.
 18. Taylor CA, Bouldin ED, Greenlund KJ, McGuire LC. Comorbid chronic conditions among older adults with subjective cognitive decline, United States, 2015–2017. *Innovation in Aging*. 2020;4(1):igz045.
 19. Jiang ZL, Cai FY, Xiong Z, Fu SY, Li JL. Analysis of the trajectory and influencing factors of Kinesio phobia in elderly patients during the rehabilitation phase of limb fractures. *American Journal of Translational Research*. 2024 Sep 15;16(9):4819.
 20. Luque-Suarez A, Martinez-Calderon J, Falla D. Role of Kinesio phobia on pain, disability and quality of life in people suffering from chronic musculoskeletal pain: a systematic review. *British journal of sports medicine*. 2019 May 1;53(9):554-9.
 21. Kortlever JT, Tripathi S, Ring D, McDonald J, Smoot B, Laverty D. Tampa Scale for Kinesio phobia short form and lower extremity specific limitations. *Archives of bone and joint surgery*. 2020 Sep;8(5):581.
 22. Fang Y, Shi L, Qin F, Li T, Zhang X, Li M. Influence of family-learned fear-of-pain on patients. *Pain Management Nursing*. 2024 Feb 1;25(1):11-8.
 23. Brindisi no F, Garzonio F, Pellegrino R, Olds M, Ristori D. Depression, fear of re-injury and Kinesio phobia resulted in worse pain, quality of life, function, and level of return to sport in patients with shoulder instability. A systematic review. *The Journal of Sports Medicine and Physical Fitness*. 2022 Oct 28.
 24. da Silva BA, Gelain GM, Candotti CT. The influence of physical exercise on behavioral habits, Kinesio phobia, and disability in people with low back pain: A retrospective cross-sectional study. *Journal of bodywork and movement therapies*. 2021 Oct 1;28:348-53.
 25. Li L, Sun Y, Qin H, Zhou J, Yang X, Li A, Zhang J, Zhang Y. A scientometric analysis and visualization of Kinesio phobia research from 2002 to 2022: A review. *Medicine*. 2023 Nov 3;102(44):e35872.
 26. Bordeleau M, Vincenot M, Lefevre S, Duport A, Seggio L, Breton T, Lelard T, Serra E, Roussel N, Neves JF, Léonard G. Treatments for Kinesio phobia in people with chronic pain: A scoping review. *Frontiers in behavioral neuroscience*. 2022 Sep 20;16:933483.
 27. Sayilan AA, Saltan A, Mert S, Anarkali H. Identifying relationships between Kinesio phobia, functional level, mobility, and pain in older adults after surgery. *Aging clinical and experimental research*. 2021 Oct 27:1-9.