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Prevalance Of Thumb Pain in Physiotherapists Practicing In Hyderabad

Faiza Jatoi[1], Tania Soomro[2], Fakhrah Safdar[3]

Original Article

ARTICLE INFORMATION

Corresponding Author:

- fakhrahs@yahoo.com

Affiliations:

1. House Officer, Isra University, Hyderabad
2. Lecturer, Isra University, Hyderabad
3. Lecturer, IPRS, LUMHS, Jamshoro

ABSTRACT

Background: Thumb pain in manual therapy of physiotherapists is an area of growing concern, primarily due to repeated stress placed on thumb joints and muscles during hands-on treatment sessions. The nature of manual therapy techniques involves specific hand movements, placing physiotherapists at increased risk of developing musculoskeletal issues, particularly related to the thumb. Investigating prevalence, factors, and long-term implications of thumb pain among these practitioners is crucial for developing preventive measures and interventions aimed at safeguarding their occupational health.

Objective: Aim of this study was to investigate the prevalence of thumb pain among Physiotherapists practicing in Hyderabad.

Methodology: In this study 100 physical therapists participated and they performed manual therapy techniques. The targeted population was from clinics and hospital of Hyderabad.

Results: The result was shown as 58 participants responded to have thumb pain whereas there was notable impact of thumb pain on the workplace, with 29% of participants reporting a reduction in the number of patients they are able to treat. Visual Analog Scale showed that 79% participants experiencing moderate pain, within range of 4 to 7 on the scale.

Conclusion: This study was concluded that 58% physiotherapists experienced thumb pain with the realm of physical therapy techniques employed by physiotherapists, a significant portion utilizes manipulation/ mobilization used to perform manual therapy. This impact directly reducing flow and Quality of treatment of patients in their clinics and hospitals. This was a potential occupational challenge within the field of physiotherapy.

Introduction:

The effectiveness of patient treatment and rising treatment costs cause thumb pain in many physiotherapists. When performing manual techniques, overusing or misusing the thumb can cause the MCP joints to become hypermobile, which may eventually lead to osteoarthritis. (2) The second most common occupational hazard for physiotherapists is thumb problems, with back and neck pain being more common than thumb problems. Work activities that require repeatedly compressing the thumb joints are frequently linked to these issues. (3) Furthermore, work-related musculoskeletal problems account for one in six physiotherapists' moves within or departure from the field. (4) Manual therapy techniques used by physiotherapists put their thumb joints at risk for injury by compressing them and causing upper limb musculoskeletal stress. Numerous manual therapies, including mobilisation, manipulation, and massage, necessitate the use of hand forces produced by the therapist and applied to the patient via the thumb. This could result in repetitive strain injuries. Among physiotherapists, work-related musculoskeletal pain in the thumb and wrist is increasingly common, and this has become the area of injury. (5)

This condition in the basal joint of the thumb, which can be incapacitating, is the ailment that causes thumb pain. A radiograph can be used to assess the severity of the problem, and splints are part of conservative therapy. In more severe cases, partial or complete trapeziectomy with tendon interposition and ligament restoration may be required in an effort to restore thumb strength and motion. Both function and patient happiness can be enhanced with surgery. (6) Due to work-related ailments, a sizable percentage of physiotherapists have even quit their jobs or changed into different roles. (7) Joint laxity, hand and thumb strength, height and weight, working environment, hand position during mobilisation, pressure applied during mobilisation, mobility at individual thumb joints, and range of osteoarthritis at the thumb and radial-sided wrist joints are among the factors that suggested influential factors that have been taken into consideration (4) Carpometacarpal osteoarthritis patients may find it difficult to do simple tasks like wringing out wash clothes, opening food packages, turning keys in locks, and opening jars. To enhance hand functions in patients with carpometacarpal osteoarthritis, a variety of techniques are used to increase thumb range of motion, grip strength, and pain relief. To raise a person's quality of life, it is critical to determine the best interventions. (8) The final resort for treating joint pain is surgery. Pharmacological treatment may cause or risk of adverse gastrointestinal, cardiovascular and renal events especially in old age. Interventions that lessen the need for medication therapy or surgery are therefore very desirable. Splinting is a type of biochemical intervention used to support the carpometacarpal or thumb joints externally in order to prevent contracture, lessen pain, and preserve hand function. It's common for clinicians to prescribe splints, and studies have shown that splints can significantly reduce pain and the need for surgery. Physical therapists are at increased risk of

biomechanical and work-related injuries in the thumb joints due to the manual therapy techniques they used. Other risk factors for physical therapists include responding to abrupt movements by patients, applying manual therapy, working in a confined workplace, age, and gender. These physical factors increase the risk of work-related musculoskeletal injuries for physical therapists. (10)

Physical therapists Dud to their work responsibilities, which include patient transfers, helping patients with exercises on the exercise mat, and lifting and using heavy equipment, physical therapists are also susceptible to both acute and chronic musculoskeletal pain. (11)

Numerous ailments, such as arthritis, sprains, fractures, strains, ligamentous instability, generalized laxity, overuse, carpal tunnel syndrome, injuries, or traumas, can result in thumb pain. One of the main causes of osteoarthritis in CMP joints is hypermobility of the metacarpophalangeal joints, which can be brought on by improper use of the thumb during manual therapy techniques. The low back and thumbs are just two examples of the body parts that can become painful from repetitive motions and manual therapy techniques. Physiotherapists can reduce their workload, alter work-related procedures, enhance their workspace, and educate themselves on appropriate posture and manual technique to prevent musculoskeletal disorders related to their line of work. (12)

Physical therapists frequently encounter thumb pain in their work, second only to back and neck pain in frequency. This condition is typically related to clinical procedures that frequently involve the thumb joints. The World Health Organization states that the conditions of work and the nature of the work itself are the root cause of musculoskeletal complaints related to the workplace. By using this teaching methodology, practitioners can enhance the fundamental skills needed to prevent injuries. According to a study on massage therapists in Canada, the hand was the most frequently injured body part, and this injury was more common in those who were overweight. (2) Therefore, conservative treatment options should be considered first. The aim of conservative treatment is to restore thumb functionality, including pain relief, stability, mobility, and strength. Commonly used conservative measures include injections, analgesics, patient education, strengthening exercises, assistive devices, and orthosis. (13) Typically, steroid injections, nonsteroidal anti-inflammatory drugs, or splinting are used as initial treatments. If nonsurgical management doesn't work, surgery might be required. Arthrodesis, distraction arthroplasty, trapezium resection, implant arthroplasty, and ligament reconstruction with interposition arthroplasty are a few surgical treatment options. An implant called the Ortho-sphere was created to treat arthritis in the thumb basal joint by acting as a dynamic spacer. Once the proximal metacarpal and trapezium have undergone hemispheric reaming, the prosthesis—which is spheric in shape—is inserted into the basal joint. A successful prosthesis placement and capsular repair eliminates the need for tendon transfer or K-wire fixation for stability. (14)

This study is important due to its potential impact on both the professionals and the quality of patient care. It can lead to actionable insights, preventative measures, and improved occupational health practices in this field.

MATERIAL AND METHODS

This cross sectional study design have participants that were selected from different Hospitals “Isra university hospital, Jeejal Mau Hospital, Civil Hospital, Majee Hospital, St.elazibeth Hospital, Walibhai Rajputana Hospital, Hilal-e-ahmer Hospital and Clinics including Dua Physiotherapy and Chiropractic Clinic, step to walk Physiotherapy Clinic, Sana Ismail Medical Institute, Al-rehman Rehabilitation Center.” of Hyderabad. The duration of study was six months after the approval of synopsis. the sampling technique was convenient sample and sample size was 100 participants were selected for the study. Both male and female participants were selected. Therapist who are not in practice were excluded. 2) If they had a rheumatic disease, previous surgery to forearm or wrist Joint laxity/hyper mobility of thumb. The Data Collection Tool was Visual analog scale questionnaire.

RESULT

The total number of participants were 100 who completed the questionnaire. The participants were selected from professional physical therapist, House officers and physical therapist from clinical side. Among the 100 participants, 22 were male, representing (22%) of the total sample, and 78 were female, making up (78%) of the participants. For the age distribution of respondent. (52%) of the participants fall into 25-29 years’ age group. 32% are in the 30-34 years’ age group.10% are in 35-39 years age group. 5% are in 40-44 years’ age group and 1% are in 45-49 years’ age group.

Regarding hand dominance 72% of participants are right-handed, whereas 28% are left-handed. About the experience of physiotherapists 31% have worked in the field for 0-5 years, 43% for 6-10 years,14% for 11-15 years and 7% have 16-20 years of experience and 3% have worked for 21-25 years and 2% for 26-30 years. Regarding thumb pain 58% participants experienced thumb pain while 42% did not have thumb pain. Regarding physical therapy techniques used by physiotherapists 53% make use of manipulation /mobilization, 7% employ trigger point therapy, 23%use soft tissue mobilization and 17%uses other techniques. About the number of hours worked in therapy per week by the participants 20% work less than 15 hours, 47% work 16-25 hours, 20% work 26-35 hours, 11% work 36-45 hours and 2% work more than 45 hours. For the impact of thumb pain in workplaces 14% participants adjusted the way they implemented treatment techniques, 27%have change their choices, 29% decreases the number of patients they can treat, 18% have reduced their working hours and 12% have decreased their use of manual techniques. According to pain intensity 8% participants reported mild pain, 79% participants reported moderate pain and 13% reported severe pain.

Table 1: Demographic Data of Participants

Gender of Respondent	Frequency	Percent
Male	22	22.0
Female	78	78.0
Total	100	100.0
Age of Respondent	**Frequency**	**Percent**
25-29 years	52	52.0
30-34 years	32	32.0
35-39 years	10	10.0
40-44 years	5	5.0
45-49 years	1	1.0
Total	100	100.0

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Figure 1 Frequency of NPSR

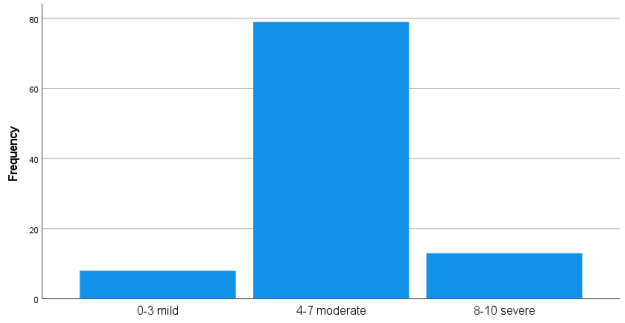

Figure 2 Gender

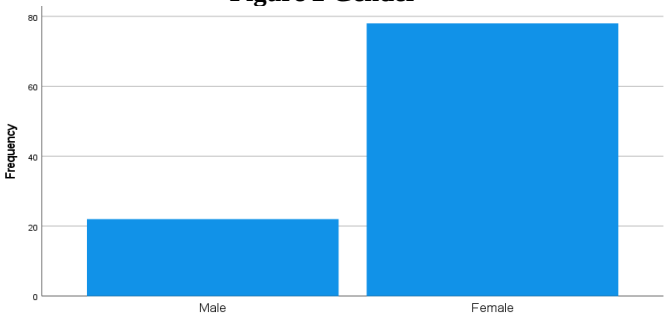

Figure 3 Age

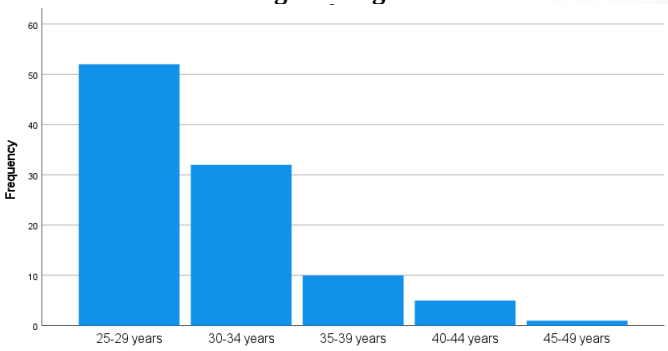

Table No.02: Frequency and percentages distribution thumb pain in Physiotherapist practicing Manual Therapy

Dominant Hand of Respondent	**Frequency**	**Percent**
Left	28	28.0
Right	72	72.0
Total	100	100.0
Year work as physiotherapist	**Frequency**	**Percent**
0-5 years	31	31.0
6-10 years	43	43.0
11-15 years	14	14.0
16-20 years	7	7.0
21-25 years	3	3.0
26-30 years	2	2.0
Total	100	100.0
Thumb Pain	**Frequency**	**Percent**
Yes	58	58.0
No	42	42.0
Total	100	100.0
Physical therapy technique	**Frequency**	**Percent**
Manipulation\ Mobilization	53	53.0
Trigger point therapy	7	7.0
Soft tissue mobilization	23	23.0
Others (if yes, specify)	17	17.0
Total	100	100.0
Working Therapy per Week	**Frequency**	**Percent**
<15 hours	20	20.0
16-25 hours	47	47.0
26-35 hours	20	20.0
36-45 hours	11	11.0
>45 hours	2	2.0
Total	100	100.0
Impact of thumb pain on work place	**Frequency**	**Percent**
Changing of implementation of treatment technique	14	14.0
Changing in choice of treatment	27	27.0
Reduction in number of patients being treated	29	29.0
Reduction in working hours	18	18.0
Decreased use of manual technique	12	12.0
Total	100	100.0
Visual Analog Scale	**Frequency**	**Percent**
0-3 mild	8	8.0
4-7 moderate	79	79.0
8-10 severe	13	13.0

DISCUSSION

The primary purpose of this study was to investigate the prevalence of thumb pain among Physiotherapists who practice Manual therapy and assess its impact on their work. A total number of 100 participants were participated, In current study result was shown, 58% experienced with thumb pain while performing manual therapy and 42% participants do not have thumb pain. In previous study according to study by Richa Mahajan et.al demonstrated that 46% of the physiotherapists had thumb pain and 72% do not experienced with thumb pain. (15) Another study conducted by Mehwish Mubeen et.al in 2018, 68.52% physiotherapists reported that they were having thumb pain and 31.48% do not experienced. (12)

The present study demonstrated that 8% physiotherapists had mild pain, 79% physiotherapists indicate moderate pain and 13% physiotherapists shows severe pain. In previous study conducted by Richa Mahajan et.al reported that 22.88% physiotherapists represents mild pain, 16.10% physiotherapists shows moderate pain whereas 0% physiotherapists presents with severe pain. (15)

In current study, 20% participants reported that they perform manual techniques for less than 15 hours, 47% work 16-25 hours, 20% work 26-35 hours, 11% work 36-45 hours and 2% work more than 45 hours.

In another study conducted by Areesa Yaseen et al stated that it could not be determined that how many hours the physiotherapists needed to perform the manual techniques to develop thumb pain, shown that 60% of the therapists who spent 21 to 25 hours every week performing manual therapy techniques were facing thumb discomfort. (10)

In this study 53% physiotherapists stated that they feel while performing manipulation/ mobilization, 7% of participants reported thumb pain while performing trigger point therapy, 23% said that they feel pain while performing soft tissue mobilization whereas 17% experienced pain while using other techniques. Areesa Yaseen et al found an insignificant relation between thump pain, age and area of practice. (10)

Conclusion

This study was concluded that 58% physiotherapists experienced thumb pain with the realm of physical therapy techniques employed by physiotherapists, a significant portion utilizes manipulation/ mobilization used to perform manual therapy. This impact directly reducing flow and Quality of treatment of patients in their clinics. This was a potential occupational challenge within the field of physiotherapy.

RECOMMENDATIONS

It is recommended that this research should be carried out in a large sample size for better and more accurate results. I recommended this type of research should be occurred at the comparison in Sindh province. Being a physical therapist should be a specified number of patients to provide improved quality of life. If the flow of patients is increased in number hospitals so there should be hired more physical therapists to reduce the burden of patients.

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CONFLICT OF INTEREST

Authors declared no conflict of interest, whether financial or otherwise, that could influence the integrity, objectivity, or validity of their research work.

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DATA SHARING STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request

SJPTR web address: www.sjptr.pk
Email address: sjptr@superior.edu.pk