

## PREVALENCE OF THUMB PAIN IN PHYSIOTHERAPISTS OF PESHAWAR

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<p><b>Authors' Affiliation</b>  <sup>1</sup>Lecturer, Northwest Institute of Health Sciences Peshawar  <sup>2</sup>Physical Therapist District Headquarter Hospital, Chitral  <sup>3</sup>Assistant Professor, Department of Physical Medicine &amp; Rehabilitation, School of Health Sciences Peshawar  <sup>4</sup>PhD Scholar, China Rehabilitation and Research Center, Capital Medical University Beijing China</p> <p><b>Corresponding Author</b>  Alam Zeb  Assistant Professor  Department of Physical Medicine &amp; Rehabilitation  School of Health Sciences Peshawar</p>	<p><b>ABSTRACT</b></p> <p><b>Objective:</b> To determine the prevalence of thumb pain in physiotherapists of Peshawar.</p> <p><b>Material &amp; Methods</b> A cross sectional study was conducted at different physical therapy clinical set ups of Peshawar. To collect data from the concern participants, 100 questionnaires were distributed using convenience sampling. 93 participants responded positively, in which 62 were male and 31 were female. Visual analog scale (VAS) was used to measure the pain. SPSS version 20 was used for data analysis.</p> <p><b>Results:</b> Results showed that 78(83.9%) subjects have thumb pain while 15(16.1%) do not experience thumb pain. According to pain in hand distribution shows that 39(41.9%) were those who have pain in their right thumb while 16(17.2%) were those who have pain in their left thumb and 23(24.7%) were those who have pain in their both thumbs.</p> <p><b>Conclusion</b> The prevalence of thumb problems in physical therapist appears to be high and can be of sufficient severity to impact on careers.</p> <p><b>Key Words:</b> Prevalence, Physical Therapy, Physiotherapist, Thumb Pain.</p>
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**This article may be cited as:** Abidin SZ, Bukhari S, Zeb A. Prevalence of thumb pain in physiotherapists of Peshawar. Ann Allied Health Sci.2020; 6(1):14-18.

### INTRODUCTION

Thumb disorders are the common occupational hazard for physical therapists, with their frequency second to back/neck pain and associated with work activities, particularly techniques in which thumb joints are compressed frequently.<sup>1-4</sup> In physical therapy manual techniques have a very great efficient role, and use of hands is the main component for treating the patient with musculoskeletal disorders due to which

the physical therapist also developed the musculoskeletal injuries.<sup>2,4-7</sup> Thumb is one of the excessively injured structure in the hand pertaining to its position and biomechanical work during manual therapy.<sup>2,8,9</sup> Many studies have found a high prevalence of musculoskeletal diseases among the physiotherapists' and it is reported that prevalence of musculoskeletal problems among physiotherapists in their lifetime was almost 32%.<sup>6, 10</sup> Different cross sectional surveys carried out by the

researchers reported that the life time prevalence of job related thumb pain ranges from 65.3 and 83%.<sup>5, 8, 9, 11</sup>

Several factors can cause pain in the thumb like age, gender, race, BMI, joint integrity, joint moment, manual therapy, soft tissue massage, trigger point treatment and instability during the performance of therapy.<sup>5, 8, 9</sup> Instability in the joints of thumb during the manual therapy techniques is the major cause of thumb pain in young therapists.<sup>12</sup> Thumb pain was reported most during the early 5 years of physiotherapy practice.<sup>2, 6</sup> Other factors associated with thumb pain are doing the same task repeatedly, treating patients higher than normal physical range, insufficient rest breaks, increase workload, position that is constant for a long time and awkward movements.<sup>2, 5, 8</sup> Thumb pain can lead to different consequences, due to which many therapists leave the field or join another field.<sup>7, 8, 13</sup>

As musculoskeletal pains are very common in physiotherapists due to their strenuous job and heavy work load, so this study was conducted to find out prevalence of thumb pain in physiotherapists of Peshawar. This study also aims to find how many therapists are affected by their job stresses and work load which ultimately affect the activities of daily living as well as their careers.

## **MATERIAL AND METHODS**

A cross sectional study was conducted at Peshawar Khyber Pakhtunkhwa. Data was collected from 100 physical therapists using convenience sampling. Data was collected from participants after screening by the inclusion criteria and exclusion criteria. Informed consent was taken from the subjects who were willing to participate in the study. The purpose and procedure of the study was explained to each participant through information sheet. All participants were given a self-administered

questionnaire. Both Male and female, age above 20, physical therapists doing practices in different set ups of physiotherapy and subjects who were willing to participate in the study were included in the study. While participants having any trauma or fractures of thumb, radiating pain from neck and upper limb, recent surgeries, Infections of skin around nails (Paronychia), osteoarthritis, rheumatoid arthritis, or any other bone disease, systemic disease and physical therapists who do not fulfill the inclusion criteria were excluded from the study.

An information sheet, consent form and questionnaire was given to 100 physical therapists working at Government and private physical therapy setups, clinics and rehabilitation centers of Peshawar, Khyber Pakhtunkhwa, Pakistan. Out of 100 physiotherapists, 93 subjects responded positively. Data was analyzed through SPSS version 20 after collection. The collected data was presented in form of tables, bar graphs and pie charts. The collected data and result shows real image about the demographic characteristics and the predisposing risk factors about the thumb pain among physical therapists working in Peshawar. The obtained results were then calculated in frequencies and percentages. While Chi-square test was used to find out association of different factors related to thumb pain.

## **RESULTS**

Data analysis age wise distribution shows that among 93 physiotherapists, 27(29%) were age of 20-30, 39(41.9%) were 31-40 and 27(29%) were age of 41-50. Gender wise distribution shows that 62(66.7%) were male and 31(33.3%) were female (Table 1). The results showed that among that 78(83.9%) subjects were affected by pain while 15(16.1%) do not experience pain. According to pain in hand distribution

shows that 39(41.9%) were those who have pain in their right thumb while 16(17.2%) were those who have pain in their left thumb

and 23(24.7%) were those who have pain in their both thumbs.

**Table 1: Demographic characteristics and working experience**

Variables	Frequency	Percentages
<b>Age(Yr)</b>		
20-30	27	29.0%
31-40	39	41.9%
41-50	27	29.0%
<b>Gender</b>		
Male	62	66.7%
Female	31	33.3%
<b>Years worked as a physiotherapist</b>		
Less than 1 Year	4	4.7%
1-5 Years	27	31.8%
6-10 Years	18	21.2%
11-20 Years	31	36.5%
Greater than 20 Years	5	5.9%
<b>To what level your thumb pain affects your activity?</b>		
At Rest	1	1.2%
Does not limit activities	26	30.2%
Limits activities	45	52.3%
Stops Activities	14	16.3%
<b>Work status in the past 12 months</b>		
Full Time	38	44.7%
Part Time	32	37.6%
Sessional/casual	12	14.1%
Other	3	3.5%

## DISCUSSION

Physiotherapists deals consistently with huge numbers of patients on daily basis which make them more susceptible to several various musculoskeletal injuries. According to researches various factors such as patient handling, transferring and positioning by physiotherapist can be a cause of pain especially in back, hands and wrist.<sup>5</sup> The population of this study were all physiotherapists working in different

government and private clinical setups of Peshawar. 100 questionnaires were distributed among the physiotherapists but total of 93 responded positively, in which 78(83.9%) reported pain while 15(16.1%) reported no pain in their thumb which is consistent with findings of previous study. As reported by other studies the prevalence of thumb pain in Australian physiotherapists were 65%, Queensland 20-40%, USA 7.3% ,Zimbabwe 32.5% and Southeast Asia 23%.<sup>7, 9, 14</sup> Prevalence of thumb problems

falls within the range of musculoskeletal problems reported previously by physiotherapists in various researches retrospectively (23–83%).<sup>2, 4, 8-10, 13, 15, 16</sup>

As for as, demographic variables are concerned physiotherapists of all ages were affected almost equally ranging from 76.9% to 96.3%. While age was not associated with a higher risk of thumb problems in this study which is similar to findings of other studies, but some studies found that younger physiotherapists reported significantly more thumb pain than older physiotherapists.<sup>2, 8, 17, 18</sup> Risk factor for young physiotherapists is that it is an age of high demand work where skill is in developing phase, professionals and clinicians learn over the time through their experience and mistakes. While risk factor for old age physiotherapists is issue of age and work burden. This is similar to findings of other studies. Other demographics such as gender shows that majority of the respondents were males which reflects maximum ratio of male physiotherapists in the field. The percentage of thumb pain that is equal in both gender 83.9%, and it shows that both genders are equally affected by thumb pain supported by different studies having similar findings that gender may not be a risk factor for thumb pain.<sup>3, 8, 15</sup> In terms of risk factors for developing thumb problems, reason for this was unclear, but it may be that males are comparatively overrepresented in different area of practice, thus spending more time performing manual therapy techniques and increasing the risk of thumb problems. While keeping our cultural and house hold routines in context, the female population thumb pain can be the result of multi-level role in house hold activities which can confound outcomes. While some studies reported that prevalence of thumb problems was significantly higher in males or in females.<sup>2, 9, 18</sup>

According to pain in hand distribution shows that 39(41.9%) were those who have pain in their right thumb while 16(17.2%) were those who have pain in their left thumb and 23(24.7%) were those who have pain in their both thumbs. These results are consistent with other studies report right thumb was more affected than left thumb.<sup>18, 19</sup> For knowing pain severity visual analogue scale (VAS) was used and pain intensity falls from 4-8. It is similar with other studies which reported pain intensity about 4.2,3.75 and 5-8 degree.<sup>8, 18</sup> Based on these findings, it is recommended that the potential for thumb problems in physiotherapists should be discussed in work place settings. If physiotherapists choose to work in an area of high thumb usage, particularly if they have unstable or hypermobile thumb joints, they should consider modifying their work practices to reduce repeated weight transmission through the thumb joints. Further research is needed to investigate whether modification of work practices can reduce the prevalence of thumb problems, and to evaluate the effectiveness of interventions.

## CONCLUSION

The study concluded that majority of caregiver needs respite and other services to manage caregiver burden. The caring the CP child is time consuming activity as child is dependent on their caregiver for activities of living as well as compromise the growth, physical and emotional health and social relationship of caregivers.

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