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Original Research

Prevalence of work-related musculoskeletal disorders among physiotherapists of Multan

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Abstract

Background: Work related musculoskeletal disorders are increasing day by day in hospitals and clinics due to high demand activities. These disorders decline the efficiency of therapists and result in social as well as economic losses. These injuries mostly occur due to abnormal postures and poor ergonomics. Aim and objectives: The purpose of this study was to rule out pain which disturbs the daily living of physiotherapists due to work related musculoskeletal disorder. This study also helps physiotherapists to improve their skills, technique, posture, ergonomics and all the other factors that are related to these disorders. Method: Survey was performed among physiotherapists that are performing duties in government hospitals, private clinics and all the other settings in Multan. This study included 100 physiotherapists of Multan. Self-design questionnaire as well as a Nordic questionnaire was used to collect data about WRMSK disorders. Data was gathered and was observed statistically. Results: 89% of physiotherapist were having had work related musculoskeletal disorder & 11% had no complaint, 75% female and 25% male & 23 to 50 years age population data was taken & the study observed that novice practitioner are at the increased risk of developing work-related musculoskeletal disorder & 45% were non specialized and 55% were specialized. The most commonly affected regions were upper back, low back and hip joint respectively. Conclusion: Upper back pain, lower back pain and hip pain were the most common complications among physiotherapists. Manual therapy shows association with the prevalence of MSK disorder.

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Introduction: Work related musculoskeletal injuries mostly occur in occupational and physical therapist and older therapist are at a higher risk of these problems.[1] Musculoskeletal disorders are deterioration of body segments i.e. muscles, ligaments, tendon, bones, nerves and localized blood circulatory system increased by over-activity, decreased healthy habits and sedentary lifestyle.[2] Mechanism of work related musculoskeletal disorders indicate tissue micro-trauma, occur as a result of continuous and high strain task, which leads to inflammation that can cause discomfort, motor problems and psychological stress.[3] Roquelaura, et al., (2018) stated that mostly musculoskeletal disorders were experienced in the upper limb. Particularly involving the overuse of soft tissues, mainly involving the rotator cuff tendinopathy, epicondylalgia, carpal tunnel syndrome and non-specific pain. Musculoskeletal disorders were multifactorial disorders associated with personal and occupational risk factors.[2]

In Physiotherapists pain mostly arises in the low back, but can also occur in neck, shoulder and upper back. These complications arise due to faulty posture, repetitive movement without rest interval, and sudden jerky movements such as sudden lifting, twisting and bending etc. Physical Therapists who directly treat the patients were at the increased risk of work-related musculoskeletal disorders. Treating many patients in a day and working while injured worsen their musculoskeletal conditions.[4] Variations between workload and capabilities can progress to musculoskeletal disorders and decrease work efficiency[5]. According to Woolf., (2012) in underdeveloped countries, the issues of work-related musculoskeletal disorders were less focused due to lack of awareness and facilities. Because of this, conditions are getting worse day by day.[6] It is seen that the Low back pain and neck pain are increasingly getting common in the students belonging to medical departments. [7] Physiotherapists specialized in orthopedic and neurology have a higher prevalence of neck pain specially in those who worked with a flexed neck and raised shoulder in home care or work place settings.[8] Cornwell, et al., (2020) stated that mostly in physiotherapist it is observed that much of the work related musculoskeletal disorders were due to manual therapy.[9] Islam, et al., in 2015 conducted a cross sectional study and concluded the prevalence of work related musculoskeletal disorders among occupational and physical therapists were 92% and 97% respectively[10]. Another study conducted by Alrowayeh, et al., in 2010 stated on year prevalence of WRMK was 47.6% in physical therapist of Kuwait and the major body parts involved were Lower back 32% , Neck 21%, Shoulder 13%, Wrist & hand 11% , Knee 11%, Upper Back 19%, Thumb 11.1%, Ankle & foot 6% , Hip & Thigh 3% , Elbow 4%.[11]

A study conducted by Nordin, et al., in 2011 stated that the prevalence of WRMSD was 71.6% among physiotherapist of public hospitals and the major body parts were Lower back 51.7% , Neck 46.5% and Thoracic 44.8%.[12] Passier and McPhail (2011) stated that 1 year prevalence was 63% among physiotherapist and the major body parts affected were Lower back 50% , Neck 33% and Shoulder 17%.[13] During clinical rotations it was observed that physiotherapists were having MSK pain involving different regions of the body that was the first initiative of conducting this study to made higher authorities aware of the WRMSDs so that precautionary measures can be taken. This study is important for Physiotherapists of Multan to make them aware about effects of work-related musculoskeletal disorders and how these disorders affect their quality of life and efficacy of work.

Materials & Methodology: A Cross sectional observational study design was conducted among one hundred physiotherapists working in different in hospitals and private clinics in Multan. Research was designed to gather data about sources, effects and prevalence of physiotherapist work related musculoskeletal disorder. In order to perform this study informed consent was taken from all participants. The Nordic questionnaire was used to collect data, it contained 13 questions related to musculoskeletal, occupational history, working places, and work-related hazards and effect of impairment. In the current study Physical therapists currently working in clinical settings were included.

Selection criteria: Both male and female physiotherapists who work more than 6 hours in hospitals and clinics and had at least one year experience of clinical setting been included. Those physiotherapists had co-morbidity or Systemic Illness, Positive Covid-19 in the previous 6 weeks, Age more than 60 years,

Exclusion criteria: Any history of trauma in the last one year were excluded.

Parameters of study: contained discomfort, work related musculoskeletal disorder and occupation dependent variable, and independent variables were duty timing, altered body positions and type of work. Data were analyzed by using SPSS version 23 and presented in graphical and tabulated form. In current study 25 percent were male and 75 percent were female. 55% did specialization, 40% were working for 4-6 hours, 30% were working between 7-9 hours, 50% of the participants who had 1-3 years of experience.

Results: This study showed that there were 89% participants who reported to having any musculoskeletal problem due to their work. Among those participants who reported MSK disorders 14.61% were having neck pain. 11.24% were having shoulder pain. Upper back pain was more as 28.09%, lower back pain was 21.35%, hip pain was among 11.24%, and knee pain was reported only by 4.49% of participants whereas ankle pain was 8.99% as shown in graph 01.

The area or region of pain were asked and frequency of body area involvement displayed by bar chart. Upper back pain was more prevalent followed by lower back and neck pain. As shown by the graph 02.

Statistical analysis showed that 74 participants reported that they had MSK pain and they exert more force during treatment sessions whereas 18 participants were exerting more force but did not report MSK pain. 4 participants were exerting more force during treatment but reported MSK pain and 7 participants were neither exerting more force nor reported MSK pain (Table 01).

Discussion: Many Physiotherapists in Multan complain about WRMSDs. According to this research study, out of 100 participants, 89% physiotherapists reported musculoskeletal problems and only 11% reported that they did not have any musculoskeletal problems. Vieira, et al.

(2016) stated out of 121 participants; reported prevalence of WRMSD were 96% among physiotherapist in the last one year.[14] Another study conducted by Iqbal and fellows in 2015 in Delhi India also reported high prevalence of WRMSD among physical therapists with at least 92% of the respondents reporting to develop some musculoskeletal pain after joining the physical therapy profession.[15]

In current study prevalence of WRMSDs among physiotherapists in Multan, the most affected area was back (49.44 %). A study conducted by Sharan, Rajkumar (2018) stated that Physical therapists are particularly vulnerable to work-related musculoskeletal disorders. The highest prevalence of musculoskeletal pain was in the low back (61.5%) followed by upper back (59.25%).

According to this study, one of the leading causes of WRMSD is the use of excessive force while performing manual therapy techniques. Out of 100 participants, 71 % reported that they had musculoskeletal problems due to exertion of more force and they prefer manual therapy than modalities. A study conducted by Gharote, et al. (2016) stated the physiotherapists who reported WRMSDs were involved in manual therapy techniques (58.6%), such as mobilizations, manipulations and massage, and lifting or transferring activities were most likely contributing factors to WRMSDs.[16] Another study conducted by Khairy, et al. in 2019 stated that the WRMSDs most commonly occur due to performing manual therapy techniques (32.6%).[17] several therapies and medicines can be adopted to reduce the musculoskeletal pain for example Orphenadrine has proved very effective as muscle relaxant. It acts on the central nervous system and helps in relaxing skeletal muscle spasms etc. [18]

Conclusion: Work related musculoskeletal disorders affected the majority of physiotherapists. Upper back pain, lower back pain and hip pain were the most common complications among physiotherapists respectively**.** Manual therapy showed association with the prevalence of MSK disorder.

Limitation: Sample size was limited due to Covid – 19. The questionnaire could not measure the level of psychological stress and the posture abnormalities during modalities usage. There were hurdles in compiling due to online forms and most of the forms were half filled.

Recommendation: Further research is required to rule out other causes including biomechanics and psychological conditions. Large sample sizes will help out to generalize the results. Ergonomic measures must be assessed in further studies. Other factors contributing to WRMSDs should be measured in future studies.

Conflict of interest statement: The authors declare there is no conflict of interest.

Ethical approval: Prior to study Approval was taken from the ethical review committee of Royal Institute of Medical Sciences Multan. Furthermore, every participant signed the consent form before providing data.

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Table. 1. Crosstab showing presence of MSK problem and Exerting more force during treatment

Count		Exert more force		Total
		Yes	No	
have any musculoskeletal problem	Yes	71	18	89
	No	4	7	11
Total		75	25	100

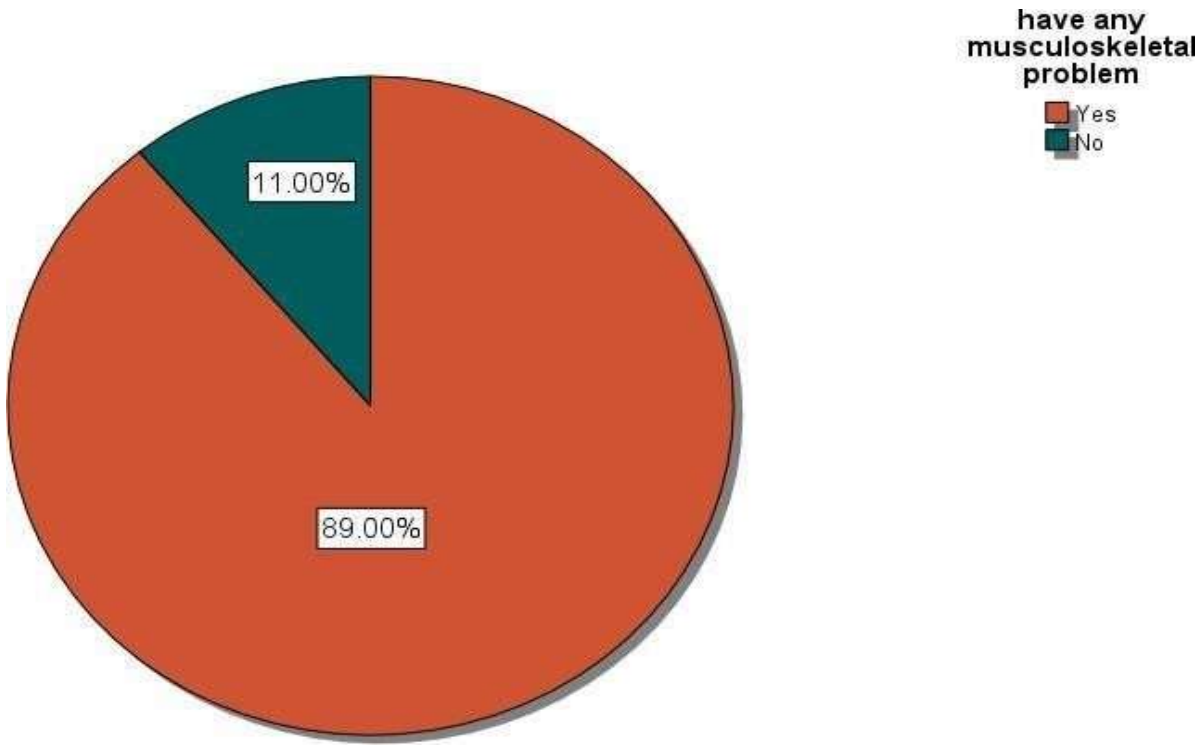

Fig. 1. Pie Chart of Prevalence of WRMSDs

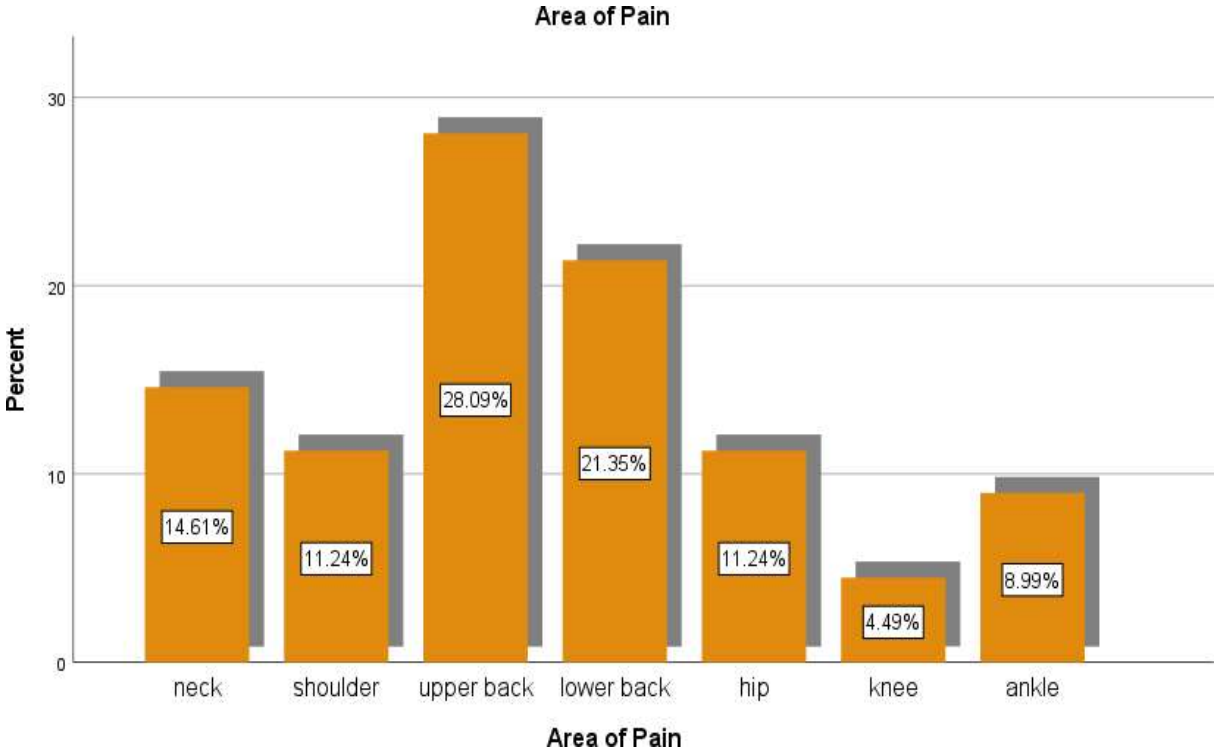

Fig. 2. Bar chart of affected area of pain