

**ASSESSMENT OF COMMON WORK RELATED MUSCULOSKELETAL DELL
CONDITIONS AMONG PHYSIOTHERAPISTS OF KARACHI, PAKISTAN.**

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Article Received on 30/04/2021

Article Revised on 21/05/2021

Article Accepted on 10/06/2021

ABSTRACT

Objective: To assess the common work related musculoskeletal (WMSKD's) conditions among the working physiotherapists of Karachi, Pakistan. **Material & Methods:** A cross sectional study was carried out among the 100 physiotherapist who were working in different hospitals of Karachi Pakistan. The participants were requested to answer the self-developed questionnaire consists of different questions. The collected data was analyzed by using statistical package of social sciences (Spss) version 21. **Results:** Majority (n=24, 40%) of the participants were in the age group of 26 to 30 years and (n=33, 55%) were female. Whereas in working experience most (n=27, 45%) of the participants had more than 5 years of experience. Majority (n=34.56.7%) of the participants reported with back pain Patients. After checking their BMI we found that there is significant relationship between the BMI and back/injury pain (p=<0.5). **Conclusion:** The physiotherapists who were working in different hospitals or clinical setups of Karachi were suffering from lower back pain, especially the obese females and they were found more prone to lower back pain then neck pain after handling the heavy patients during their treatment sessions.

KEYWORDS: Physiotherapists, work related musculoskeletal disorders, Karachi, Pakistan.

INTRODUCTION

Work related musculoskeletal disorders are common among health care professionals with the physical therapy populace at especially high danger.^[1-3] Physical therapists are the professionals who perform demanding tasks that can prompt work-related musculoskeletal disorders. Healthcare professionals, particularly the individuals with direct patient contact are the among the professionals with the highest rate of work-related musculoskeletal disorders (WMSDs), physical therapists (PT) being one of them.^[4] Previous studies reported that health care workers like nurses, dentists, and physical therapists are at higher risks for developing work related musculoskeletal conditions and the identified risk factors are heavy physical work, frequent lifting and handling of heavy loads, overstrained and awkward postures specially in the form of bending, twisting, frequent joint motions, utilization of high frequency vibration tools, psychological stress and persistent static position.^[5-7] Mostly, the physical therapists treat the patients who are dependent and cannot move on their own, especially in rehabilitation centers. While handling and treating such

patients, who frequently use to lift heavy weights specially in bending positions, stoop, twist, turn or stand for prolonged durations over and again.^[8,9]

Physical therapists and occupational therapists mobilize and rehabilitate the patients uniquely in contrast to nursing faculty. They provide transfer training and utilize patient handling to reestablish previous functioning level and to improve independence. Both disciplines get preparing from their expert educational programs in self-defense while playing out these strategies. Numerous therapists likewise get schooling in ergonomics as a part of their academic training and serves the role of occupational health providers for other representatives in their proper working environment. Regardless of this degree of training and mastery, evidences reported that these clinicians are still at the higher risk for work related musculoskeletal injuries associated during the treatment duration of patient.^[10]

This study aims to identify the number of physiotherapists suffering from work related musculoskeletal conditions and to assess the regions

most effected and relationship of incidence of WMSDs with different variables.

MATERIAL AND METHODS

Study Design Setting and Duration

A cross sectional design was used and the survey was conducted from July to December 2013. The data was collected from different hospitals (Liaquat National Hospital Karachi, Jinnah Postgraduate Medical Centre Karachi, Rabia moon trust Karachi).

Sampling

A convenient Non-probability sampling technique was used among 60 male & female physiotherapists, who were agreed to participate in study, while physiotherapists who were not working in clinical side and were not willing to participate excluded from study.

Data Collection Tool

A self-created questionnaire was used for the gathering of data that consists the demographic Characteristics (age, gender, weight), further the questions were asked regarding the working experience, area (specialty) in

which therapist is working and the region of the therapist affected due to the work.

Data Collection Procedure

During the data gathering, physiotherapist were asked to fill the questionnaire on the spot only minor help was provide on request.

Data Analysis Procedure

Data was analyzed by using Statistical Package for Social Sciences (SPSS) version 21 and presented in frequency and percentage for categorical variables, mean values were presented for continuous variables.

Ethical Consideration

The ethical approval was received from the ethical inspection committee of Liaquat National School of Physiotherapy, Karachi Pakistan. Informed consent was taken from the patients prior to data collection that their participation is voluntary, information of their responses will be kept confidential, and they can leave the study anytime.

RESULTS

Table 1: Demographic characteristics.

Demographics	Frequency (n=60)	Percentage (%=100.0)
Gender		
Male	29	48.3
Female	31	51.7
Age (in years)		
Up to 25	22	36.7
26-30	24	40.0
31-35	14	23.3
BMI		
Low weight	12	20.0
Normal	33	55.0
Over-weight	15	25.0

Table 1 displays demographic characteristics of participants. Most of the participants were female (n=31, 51.7%) and were (n=24, 40.0%) Belongs to age group of

26-30 years. After checking their body mass index (BMI) most of the participants were found normal weight (n=33, 55.0%).

Table 2: represents working experience and working area of participants.

Variables	Frequency (n=60)	Percentage (%=100)
Working experience		
1-3 year	21	35.0
3-5 years	12	20.0
More than 5 years	27	45.0
Working area		
Neurology	20	33.3
Orthopedic	18	30.0
Pediatrics	8	13.3
Cardiac	1	1.7
OPD	9	15.0
ICU	4	6.7

Table 2 displays working experience and working area (specialty) of participants. Most (n=27, 45.0%) of the participants were having working experience of above 5 years, moreover after checking the specialty most (n=20,

33.3%) of the participant having a working experience in neurological rehabilitation followed by the orthopedics (n=18, 30%).

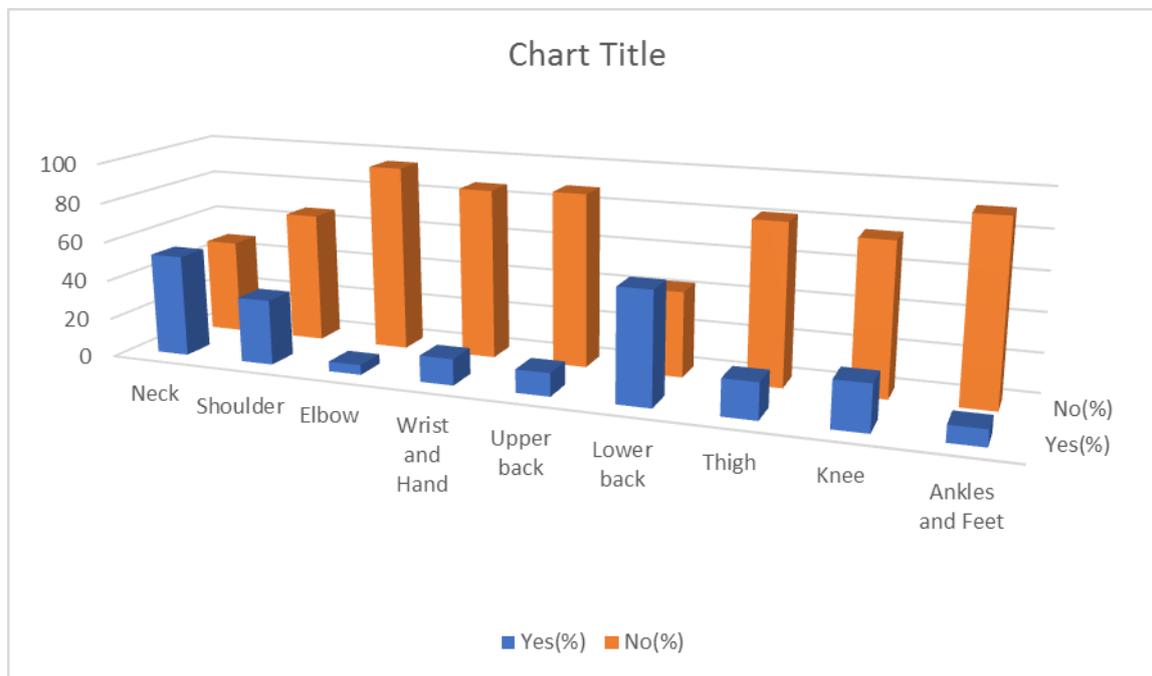


Figure 1: Regions of injury/ pain.

Figure 1 displays regions of injury or pain in which most of the participants reported injury/ pain in lower back

(n=34, 56.7%) followed by the neck region (n=31, 51.7%).

Table 4: represents relation between BMI, working experience and gender with region involved.

Variables	P-value		
	BMI	Working experience	Gender
Injuries or pain in neck	0.144	0.837	0.611
Injuries or pain in shoulders	1.00	0.986	0.361
Injuries or pain in elbow	0.122	0.827	0.046*
Injuries or pain in wrist/ hand	0.675	0.884	0.510
Injuries or pain in upper back	0.365	0.234	0.620
Injuries or pain in low back	0.051	0.054*	0.414
Injuries or pain in thigh	0.386	0.746	0.648
Injuries or pain in knee	0.938	0.420	0.640
Injuries or pain in ankles/feet	0.504	0.104	0.585

Represents relation between BMI, working experience and gender with region involved.

Table 5 displays relation between BMI, working experience and gender with region of injury or pain. There is a significant relation between BMI and neck pain and injury (p=0.051), working experience and injury/ pain in neck and lower back (p=0.054) respectively.

DISCUSSION

The current study finalized that the physiotherapist working in different clinics or hospitals were suffering from many musculoskeletal problems which are named

as work related musculoskeletal disorders (WRMSDs). Most of the physiotherapist who were working in different hospitals and clinics they reported that most (n=34, 56.7%) of the cases they had to suffer from lower back pain (LBP) followed by the neck pain (n=31, 51.7%). In current study the body mass index (BMI) of the working physiotherapist was checked and found that the body weight of a person is significantly associated with the low back pain.^[11] The Physiotherapist who are working in different medical setups reported that they had an experience of musculoskeletal disorder and due to the work stations its named as work related musculoskeletal disorder which mainly involves one

anatomical part or joint of the body due to the nature of work, whereas the intensity and severity of WRMDs found dependent on the experience of physiotherapist. It's also proposed by different studies that among working females the profession related lower back pain is more common as compare to men. Furthermore different studies throughout the world suggested that handling of heavy patients can be the major cause of mechanical injury to lower back, whereas it's also proven that sudden lifting of heavy objects also can be the leading mechanism of spinal compression or spinal stress.^[12, 13] Several previous studies around the globe have reported that after joining profession the incidence of LBP among physical therapists increases, ranging from 29% to 68% in different countries.^[14-16] As per alternative study, the physical therapists rank second after nurses with respect to the work-related lower back pain among all health providers since physiotherapist repeatedly overload their spines.^[17] A prospective cohort study reported a 1-year incidence of WMSDs among a randomly selected, national sample of 882 physical therapists was 20.7% in different body regions. The study suggests that the therapists who transfers patients at least 6 to 10 times per day had a greater chance of WMSDs that were 2.4 times higher than those of therapists who did not transfer patients.^[18] U.S bureau of labor statistics, in 2004, reported that about 60% of work related injuries to physical therapists were caused due to the activities which are performed for patient care.^[19]

In current study it's also found that the body mass index (BMI) were also significantly associated with the WRMSDs especially with lower back pain in females. As the females have low bone density or they have a weak musculature on comparison to men. The obese or overweight males especially who are working and their nature of work is to lifting heavy objects are also prone to develop the lower back pain due to their decreased physical health.

CONCLUSION

Work related musculoskeletal disorders specially the lower back pain in common in physiotherapist who are working in different hospitals or clinics and associated with obesity. It's also found that physiotherapist are more prone to develop the lower back pain if they are involved in improper handling of a heavy patients.

Role of the funding source

Nil.

Conflicts of Interest

All authors hereby declare there is no any conflict of interest with this submission.

ACKNOWLEDGEMENTS

We acknowledge the support of participants, who spared their time and volunteered themselves for data collection.

REFERENCES

1. Stubbs DA, Buckle PW, Hudson MP, Rivers PM, Worringham CJ. Back pain in the nursing profession. I. Epidemiology and pilot methodology. *Ergonomics*, 1983; 26(8): 755-65.
2. Videman T, Nurminen T, Tola S, Kuorinka I, Vanharanta H, Troup JD. Low-back pain in nurses and some loading factors of work. *Spine (Phila Pa 1976)*, 1984; 9(4): 400-4.
3. Wilkinson WE, Salazar MK, Uhl JE, Koepsell TD, DeRoos RL, Long RJ. Occupational injuries: a study of health care workers at a northwestern health science center and teaching hospital. *Aaohn j*, 1992; 40(6): 287-93.
4. Mohammad Milhem LK, David Ezra, Deborah Alperovitch-Najenson. Work-related musculoskeletal disorders among physical therapists: A comprehensive narrative review. *International Journal of Occupational Medicine and Environmental Health*, 2016; 26.
5. Szymańska J. Disorders of the musculoskeletal system among dentists from the aspect of ergonomics and prophylaxis. *Ann Agric Environ Med*, 2002; 9(2): 169-73.
6. Akesson I, Lundborg G, Horstmann V, Skerfving S. Neuropathy in female dental personnel exposed to high frequency vibrations. *Occup Environ Med*, 1995; 52(2): 116-23.
7. Coenen P, Kingma I, Boot CR, Twisk JW, Bongers PM, van Dieën JH. Cumulative low back load at work as a risk factor of low back pain: a prospective cohort study. *J Occup Rehabil*, 2013; 23(1): 11-8.
8. Mohammad Milhem LK, David Ezra, Deborah Alperovitch-Najenson. Work-related musculoskeletal disorders among physical therapists: A comprehensive narrative review. *International Journal of Occupational Medicine and Environmental Health*, 2016; 29.
9. Vieira ER, Schneider P, Guidera C, Gadotti IC, Brunt D. Work-related musculoskeletal disorders among physical therapists: A systematic review. *Journal of Back and Musculoskeletal Rehabilitation*, 2016; 29: 417-28.
10. Bork BE, Cook TM, Rosecrance JC, Engelhardt KA, Thomason ME, Wauford IJ, et al. Work-related musculoskeletal disorders among physical therapists. *Phys Ther*, 1996; 76(8): 827-35.
11. Szymanska JJAoA, Medicine E. Disorders of the musculoskeletal system among dentists from the aspect of ergonomics and prophylaxis, 2002; 9(2): 169-73.
12. Wilkinson WE, Salazar MK, Uhl JE, Koepsell TD, DeRoos RL, Long RJAj. Occupational injuries: a study of health care workers at a northwestern health science center and teaching hospital, 1992; 40(6): 287-93.
13. Vieira ER, Schneider P, Guidera C, Gadotti IC, Brunt DJJob, rehabilitation m. Work-related musculoskeletal disorders among physical therapists: a systematic review, 2016; 29(3): 417-28.

14. Molumphy M, Unger B, Jensen GM, Lopopolo RB. Incidence of work-related low back pain in physical therapists. *Phys Ther*, 1985; 65(4): 482-6.
15. Rugelj D. Low back pain and other work-related musculoskeletal problems among physiotherapists. *Appl Ergon*, 2003; 34(6): 635-9.
16. Salik Y, Özcan A. Work-related musculoskeletal disorders: A survey of physical therapists in Izmir-Turkey. *BMC Musculoskeletal Disorders*, 2004; 5(1): 27.
17. Zaheen Iqbal AA. Prevalence of work-related musculoskeletal disorders among physical therapists. *medycyna pracy*, 2015; 66.
18. Campo M, Weiser S, Koenig KL, Nordin M. Work-related musculoskeletal disorders in physical therapists: a prospective cohort study with 1-year follow-up. *Phys Ther*, 2008; 88(5): 608-19.
19. Statistics BoL. Number of injuries and illnesses with days away from work, 2003-2004. 2004.