



## RESEARCH ARTICLE

# Work Related Musculoskeletal Disorders among Physiotherapists in Dhaka City

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### Abstract

**Background:** Work-related musculoskeletal disorders were the most significant issues in worldwide. Physiotherapists are known to be prone to work-related musculoskeletal disorders but its prevalence among physiotherapists in Dhaka city has not yet been reported.

**Objective:** To evaluate the prevalence and patterns of musculoskeletal disorders among physiotherapists was aim of this study.

**Methodology:** A cross-sectional survey was conducted among conveniently selected 61 physiotherapists to find out musculoskeletal problems among them. Self-administered questionnaire were given to PTs from different region of Dhaka city. Musculoskeletal problems were identified by taking face to face interview. Data were analyzed using SPSS version 20 and Microsoft excel.

**Results:** The study reported that 46% physiotherapists had musculoskeletal disorders where male playing the leading role comparing to female. It had also been noted that maximum complained about low back pain. Middle age group was more affected.

**Conclusion:** The prevalence of musculoskeletal disorders among physiotherapists was too high. Further research is required to boost up effective preventive measurement of disorders and correct ergonomics.

**Keywords:** Work-related musculoskeletal disorder, Low back pain

### Background

Work-related musculoskeletal disorder (WRMDs) is defined as damage to the musculoskeletal system resulting from work-related events and it is one of the most general causes of chronic pain and physical disorders occurring among modern workers. WRMDs result in loss of work time, restriction of tasks, or transfer to a different job, thereby affecting the quality of life of the patient [1]. In the workplace, the health care professionals were vulnerable to sustaining musculoskeletal disorders during the course of their work routine [2]. Studies revealed as many as 91% physiotherapists experience WRMDs during their career with recurrence rates of up to 88%. It had also been reported that 80% physiotherapists experience symptoms in at least one body area over a 12-month period. One in six physios had been reported to change their area of specialty or leave the profession as a result of pain or injury [3]. Literature suggested that physiotherapists were particularly susceptible to WRMDs because of the nature of their profession which is often repetitive, labor intensive and involving direct contact with patients [2]. While treating such patients, they had to frequently lift them or heavy weights and repeatedly bend, stoop, twist, turn or stand for prolonged durations [4]. The life time prevalence of WRMDs among physiotherapists had been reported to be 68% in the United Kingdom, 55% and 91% in the Australia and 85% in Turkey. Low back pain was the most common WRMD among physiotherapists

with career and annual prevalence of low back pain among physiotherapists in the United Kingdom being reported as 68% and 58% respectively. In the United States, prevalence of low back pain among physiotherapists ranged from 45% to 62%. Mierzejewski and Kumar found the prevalence of low back pain in Canada to be 49%, while Shehab et al reported a 70% prevalence of low back pain in Kuwait [2]. Some research indicated that WRMDs among physiotherapists may be age related and also associated with professional years of experience. [5] indicated that physiotherapists aged more than 50 years had the lowest prevalence of WRMDs, while others reported that most physiotherapists first developed symptoms before the age of 30 years and that majority of these initial episodes occurred within 5 years after graduation [2]. WRMD in physical therapists was associated with the therapist's age and clinical experience. For example, Campo et al observed that WRMD prevalence was higher in older physical therapists than in younger physical therapists. In contrast, most previous studies had reported that therapists experienced symptoms before they reach 30 years of age, and the incidence rate within 5 years of graduation was high. The suggested reason

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**Received:** Feb 03, 2019; **Accepted:** Feb 05, 2019; **Published:** Feb 09, 2019

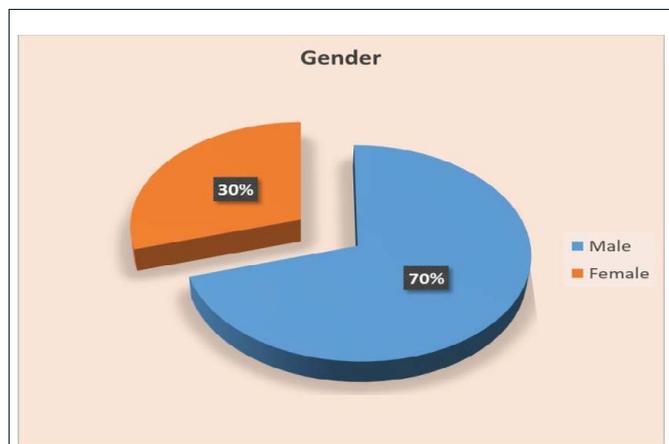
is that new physical therapists late professional experience, knowledge, and techniques, and that they were rotationally dispatched to different places, thereby running a higher risk of injury [6]. The work-related musculoskeletal disorder (WRMDs) can be defined as an injury that results from a work-related event or from single instantaneous exposure in work environment. Physical therapists routinely perform activities such as transferring patients, assisting with mat activities, and lifting, and cumbersome equipment's. So, they have to work in a same position for long time. Only very few maintain correct posture during treatment and the rest maintains faulty posture. There are lot of reasons behind raising WRMDs such as insufficient treatment room space, abnormal posture during treatment etc. The aim of the study is to sort out the percentage of age group most vulnerable to musculoskeletal disorder in association with the duration of work time, type of treatment they adopt and other related factors. This study will help them to know about what is causing them trouble and correct ergonomics. The aim of this study was to look at the WRMDs prevalence among physical therapists in Dhaka City and to clarify the risk factors that develop into WRMDs, thereby providing basic knowledge to preempt physical therapist's musculoskeletal symptoms and to identify measures to reduce their risk of WRMDs [6].

**Methods and Materials**

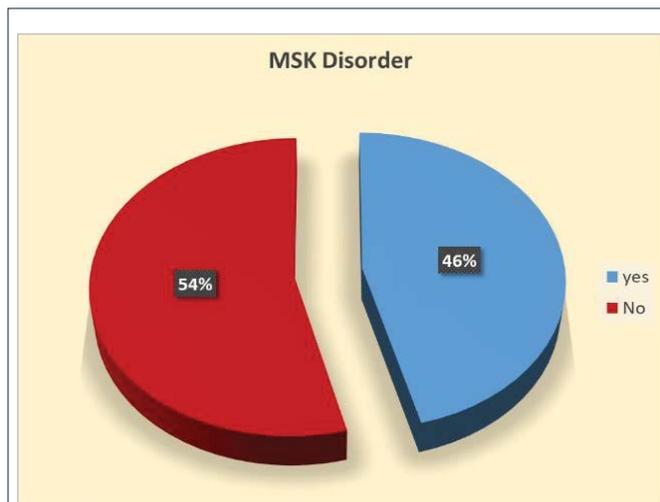
This study was done through using cross sectional survey. The study was conducted among different physiotherapy practitioners in Dhaka city. According to equation sample should be more than 126 but due to time and resource constraint the study was conducted among 61 Physiotherapists. Both male and female were included. However, those having unstable medical condition were excluded. Data were collected by semi-structured questionnaire. Face to face interview was carried out. Data were analyzed by Microsoft Office Excel 2016 incorporated with a Statistical Package for Social Sciences (SPSS) software version 20.

**Results**

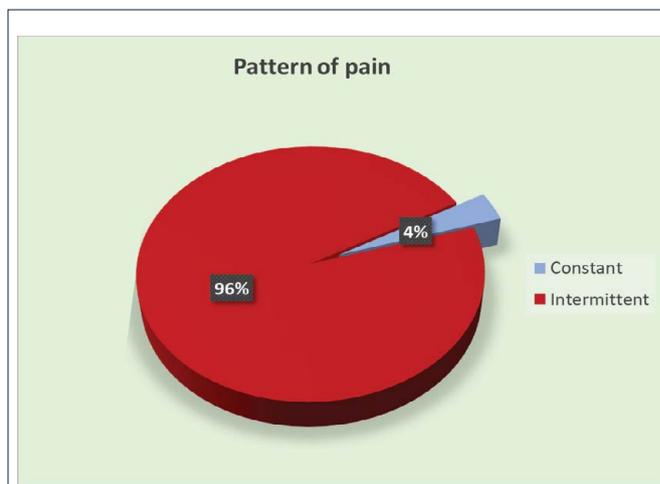
(Table 1) (Figure 1) (Figure 2) (Table 2) (Figure 3) (Figure 4)



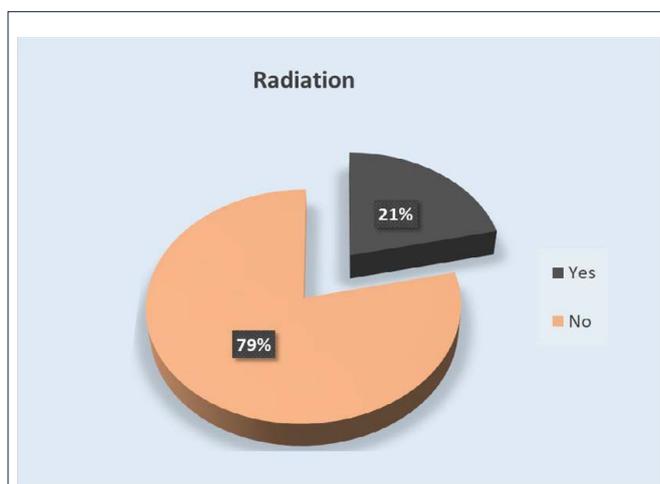
**Figure 1:** Gender distribution (n=61) Male and female physiotherapists were 70% and 30%.



**Figure 2:** Prevalence of musculoskeletal disorders (n=61) About 46% physiotherapists suffered from musculoskeletal disorders.



**Figure 3:** Pattern of pain Intermittent pain was prevalent (96%).



**Figure 4:** Prevalence of radiculopathy among physiotherapists Twenty one percent physiotherapists suffered radiculopathy.

Age group	Frequency	Percentage
20-29	29	47.5
30-39	28	45.9
40-49	4	6.6
Total	61	100.0

**Table 1:** Age distribution (n=61)

About 47.5%, 45.9% and 6.6% physiotherapists belong to 20-29 years, 30-39 years and 40-49 years respectively.

Region of MSK disorder	Frequency	Percentage
Neck	12	30.0
Shoulder	5	12.5
Low back	18	45.0
Wrist	1	2.5
Knee	4	10.0
Total	40	100.0

**Table 2:** Body regional appearance of disorders among physiotherapists (n=40)

Among 40 physiotherapists 18 physiotherapists suffered low back pain followed by neck pain (12), shoulder pain (5) and knee pain (4).

## Discussion

Musculoskeletal problems are particularly common in health care providers who are in direct contact with patients. Physiotherapy is a noble profession. However, there is a dearth of studies on WRMDs among physiotherapists in Bangladesh. The aim of the study to apprehend prevalence and pattern of work related musculoskeletal disorders among Physiotherapists working at some specific territory in Dhaka city, Bangladesh. In our country physiotherapy profession is male dominated because of socio-cultural tradition and lack of interest practicing hands on technique as a female physiotherapist. As per as our study, male was meant to be suffer WRMDS higher than female which had been reported 29.5% for female and 70.5% for male respectively. On the contrary, female was found to be dominant in that case of disorder in tertiary care hospital Karachi (42.6%), Pakistan. It had also been delineated in some studies that the most common site of pain among physiotherapists was low back which was 31.36% in Islamabad, Pakistan reported by [7], 69.8% in Nigeria by Adegoke [2], 35% in Saurashtra, India by Neeti B. and Ilesh k[8], 51.7% was found in government and private hospitals in India reported by Gharote G [9], 45% by Bork B[5], 44% by Balakrishnan R. and Naib N [10]. Surprisingly, comparing to our study that reported the same highest prevalence of pain site among our Physiotherapists whereas, another study in Egypt 68.3% had complained with shoulder pain that was the maximum appearance in their study reported indeed. So to say, there are a lot of studies found low back as the highest percentage of involvement among other body parts. This is because the lifting and transferring patients, prolong standing, frequent twisting and bending forward. In our study we had found 47.5% physiotherapists age below 30 years were the most sufferers and 44.9% were 30-39 years' age which was second leading age group [11-15]. Similarity was found in Egyptian physiotherapists which was 63.25%

within age group 21-30 years and 26.25% for 31-40 years in some respects, 58% found in below 30 years of age and 12% above 30 years old physiotherapists. To avoid symptoms of WRMDs, respondents commonly associated with modifying patients position or his position, selecting techniques that will not aggravate or provoke his discomfort, adjusting plinth or bed height before treating a patient, getting someone else to handle a heavy patient, stopping a treatment if it causes or aggravates or provokes his discomfort and pausing regularly so that he can stretch and change posture while treating patients [16-20]. The strategies must be focused on use of aids and self-protective strategies such as modification of technique or the environment. There were some situational limitations and barriers while considering the study. Expected sample size was more than 126 for this study but due to resource constrain just 61 samples were taken to generalize the result for the wider population [21-23]. Time and resources were limited which had a great deal of impact on the study and affect the result of the study. This study was done in a short period so all factors in relation to musculoskeletal disorder may not be highlighted. Most of them were private practitioner that is why we could not collect data in day time in most cases. In some cases, we had to take appointment of them. In some cases, they were not available during holidays and actions were delayed as well.

## Conclusion

Work related MSK disorders (WMSDs) are a type of functional disorder caused by external factors such as occupational repetitive movements, overexertion, and awkward posture. It is concluded that Most of the physiotherapists had MSK disorder in the region of lower back mostly. Nevertheless, modification of the risk factors of MSK disorder can prevent this condition. Age, job status, duration of work, number of patient handle per day, treatment protocol, job stress are the risk factors were found to be associated with MSK disorder among physiotherapists. To aware themselves about their physical fitness to keeping fit for prolong same work position which is the highly risk for the MSK disorder. To an end, an effective program can prevent MSK disorder among physiotherapists, is necessary as a protective approach for preventing serious problem that may occur in future.

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**Citation:** Mondal A, Mehedi MMH (2019) Work Related Musculoskeletal Disorders among Physiotherapists in Dhaka City. *Bone Muscle* 2: 001-004.

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