Original Research Article

Comparison of musculoskeletal pain among neuro-pediatric physiotherapist and orthopedic physiotherapist: an observational study

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ABSTRACT

Background: Musculoskeletal disorders can affect the body's muscles, joints, tendons, ligaments and nerve which caused either by the work itself or by the therapist's working environment. Physiotherapists routinely perform activities such as transferring dependent patients, assisting with mat activities, and lifting heavy equipment. These work tasks put therapists at risk for both acute and chronic musculoskeletal pain.

Methods: An observational cross-sectional survey was carried out among 34 physiotherapists specialized as a neuro-pediatric and orthopedic PTs age more than 22 years old both male and females who are working as a full time PTs in clinic or a part time PTs (at least 4 hour/day with minimum 1 year work experience at same job) and not involved in any occupation other than physiotherapy (full/part time). Extended Nordic musculoskeletal questionnaire was used to quantify the musculoskeletal pain and activity limitation in 9 body regions.

Results: Physiotherapist reported the highest rate of musculoskeletal disorder in the lower back and neck regions. During 12-months period and point prevalence rate of WMSDs occurred mostly in low back region was (58.80%), neck (35.30%), upper back (35.30%) in neuro-paediatric physiotherapist and it was mostly in back region (41.10%) and neck, upper back, shoulder region (23.50%) respectively in orthopaedic physiotherapist.

Conclusions: A high proportion of neuro-pediatric physiotherapist reported WMSDs at some body site working in their occupational lives with the low back pain and neck pain most often compare to orthopedic physiotherapists.

Keywords: Musculoskeletal pain, physiotherapist, Nordic musculoskeletal questionnaires, posture

INTRODUCTION

Musculoskeletal disorders (MSDs) is the most common occupational health problems in almost all type of working populations.¹ The term musculoskeletal disorders denotes health problems of different structures of the musculoskeletal systems like muscles, tendons, the skeleton, cartilage, ligaments and nerves. They can affect many different parts of the body including upper and lower back, neck, shoulders and extremities (arms, legs, feet, and hands). Most of the work-related MSDs develop

over time and are caused either by the work itself or by the employees' working environment.²

Physical therapy (PT) work requiring many of physical demanding tasks during leading various types of patient's conditions. Risk for development of the WRMD due to heavy physical work, repeated lifting and handling of loads, overstrained and awkward postures in the form of bending, twisting, repetitiveness of different joint movements; use of high frequency vibration tools; psychological stress and prolonged static body position.³⁻⁵

This group has a moderately high prevalence of occupational low-back pain. Physical therapists routinely perform manual therapy, such as soft-tissue mobilization, which means that the upper limb is also exposed to risk factors associated with musculoskeletal and neurovascular disorder.^{3,4}

In addition, these professionals routinely perform activities that involve transferring a dependent patient (from exercise mat to chair, to parallel bar etc), assisting with activities on the exercise mat, and lifting.^{1,3,4} These work tasks put therapists at risk for both acute and cumulative musculoskeletal pain. Physiotherapist performing manual therapy are also exposed to stress on hands and fingers. Even physiotherapist who work with paediatric patients are also chance to develop back pain, hand pain and other kind of musculoskeletal pain.^{5,6} Physiotherapist are highly-educated, health care professionals who can help patients in reducing pain and improving or restoring mobility. They can treat people at any stage of life, when movement and function are threatened by ageing, injury, diseases, disorders, conditions or environmental factors.^{10,11}

Work related musculoskeletal disorders cause chronic pain and functional impairment for millions of people, impose heavy costs on society for treatment, sick leave, and retirement, and reduce productivity in working life.^{1,4}

During treating the patient physiotherapist are often working long hours of strenuous activities. The purpose of the present study was to find out the prevalence of musculoskeletal pain among physiotherapist who worked differently in general orthopaedic and paediatric physiotherapy clinic.

Understanding the issues related to musculoskeletal pain in orthopaedic and neuro paediatric physical therapists requires some awareness of the context in which these professionals work.

The purpose of this study was to investigate the prevalence and features of musculoskeletal pain in orthopaedic and neuro-paediatric physiotherapists working in various clinics in Ahmedabad city, Gujarat, India and to compare the different kind of regional pain among both the group of physiotherapists.

METHOD

A cross sectional survey was carried out among 34 physiotherapist who are working as a physiotherapist professionals age more than 22-year-old both male and female working in general and paediatric clinics. The study was approved by ethics committee of institutional review board of SBB physiotherapy college vs general hospital Ahmedabad in 2013. Included physiotherapists who are working as full time/ max working at least 4 hours per day in various general and paediatric clinics in Ahmedabad, Gujarat. Physiotherapist whose age-above

50 years, any other systemic health problems, working in academic, under any medication and fracture within last 1 year were excluded.

A study was conducted by administering a self-design questionnaire to getting information regarding the participants personal information, various musculoskeletal problems faced during treating the patient and activities performed in any particular posture during treating the patient and by a Nordic musculoskeletal questionnaire (NMQ).⁷ Each physiotherapist was asked to complete the self-administered questionnaire if they had more than 1 years of experience in same practice and not involved in occupation other than PT (fulltime/part time).

RESULTS

A survey was conducted and total 34, physiotherapist were participated in the study group 1 (n=17) and group 2 (n=17). Data were analysed using SPSS version 16. We calculated the 12-month prevalence of symptoms in each of the 10 anatomical areas and the percentage of both group therapists who reported that symptoms had prevented of them from working or had prevented normal ADL and that the symptoms lasted more than 3 days. The sample socio-demographic and work-related data are shown in Table 1 and 2. Both the type of physiotherapist had WMSDs once or more in their occupational lives. Physiotherapist reported the highest rate of musculoskeletal disorder in the lower back and neck regions. During 12-months period (Figure 1) and point prevalence rate of WMSDs occurred mostly in low back region was (58.80%), neck (35.30%), upper back (35.30%) in neuro-paediatric physiotherapist and it was mostly in back region (41.10%) and neck (23.50%), upper back (23.50%), shoulder region (23.50%), knees (5.80%) ankle/feet (5.80%) respectively in orthopaedic physiotherapist. Backache (low back) was responsible in both the group of physiotherapists and was more common in neuropediatric physiotherapist (58.80%) as compared with with ortho physiotherapist (41.10%).

Figure 1: The pain during last 12 month (Ache, pain, discomfort, numbness).

We also calculated the percentage of therapists who took rest between work and sick leave. Work-related lower

back pain most commonly found (23.50%) in neuro paediatric physiotherapist and (17.60%) in orthopedic physiotherapist and they away from the work due to low back pain compare to other region pain (Figure 2).

Figure 2: Physiotherapist away from work last 12 months.

Table 1: Gender distribution, (n=17).

Gender	Group 1 (%)	Group 2 (%)
Male	29.41	41.18
Female	70.59	58.82

Table 2: Age distribution.

Age (years)	Group 1 (%)	Group 2 (%)
22-25	35.29	41.18
25-30	47.05	52.94
>30	17.64	5.88

Table 3: Working hours/day.

Working hour/day	Group 1 (%)	Group 2 (%)
1-5	29.41	35.29
6-10	29.41	47.06
>10	41.17	17.65

Table 4: Working in any fix position (Sitting, standing, bending).

Working in fix position	Sitting (%)	Standing (%)	Bending (%)
All of the time	29.41	41.18	-
Some of the time	-	35.29	64.71
None of the time	5.88	11.76	-

Table 5: Frequency of rest break during work.

Frequency of rest breaks during work (Hours)	Group 1 (%)	Group 2 (%)
Often (at every)	11.76	23.53
Occasionally (2-3)	29.41	52.94
Almost never	58.82	23.53

Figure 3: The pain during the last 7 days.

DISCUSSION

The aim of this study was to examine the prevalence of musculoskeletal pain among neuro-pediatric and orthopedic physiotherapist.

Studies have shown that musculoskeletal problems are particularly common in the health workers who direct contact with the patients. Our finding revealed a high prevalence of musculoskeletal symptoms in neuro-pediatric physiotherapists compare to the orthopedic physiotherapists. Although the prevalence of injuries among pediatric physiotherapists is underreported in the literature, evidence of a high prevalence of WRMDs among physiotherapists working in the musculoskeletal specialty is well documented.⁵

The prevalence of lower back and neck were higher than the upper back, shoulder, arm-elbow and hand-wrist, hip, knee, ankle-foot regions in neuro pediatric physiotherapists compare to the orthopedic working physiotherapist. The lower back region was the most common site for WRMDs among physiotherapists (58.80%) in this study, followed by the upper back and neck region (35.30%) and the shoulder region (29.40%). This result is consistent with findings from previous studies, which found that the prevalence of lower back WRMDs during the past 12 months was between 45% and 69.8%.^{5,8} Injuries to the lower back have been identified as the most prevalent type of WRMD among therapists, followed by injuries of the upper back and neck.⁹ Even maximum no of physiotherapist away from the work due to back pain. In our study we found that 23.50% physiotherapist away from the work due to LBP during last 12 month.

The most common risk factors identified in the present study were working maximum hr. per day and working maximum in standing position even lack of break during work (Figure 2 and 3). West et al highlighted working in the same position for longer periods, working in static postures with flexion or rotation; continuing to work while injured and performing manual therapy techniques as these activities commonly lead to injuries.¹² We found strong support for hypothesized relationships of physical

factors that the work posture on musculoskeletal complaints.

Limitation

This study is limited in sample size and psychological and stress factor was not analyzed.

CONCLUSION

A high proportion of neuro-pediatric physiotherapist reported WMSDs at some body site working in their occupational lives with the low back pain and neck pain most often compare to orthopedic physiotherapists. Working in the fix positions for long periods, lifting or transferring dependent patients and treating maximum number of patients in a day were the most perceived job risk factors for WMSDs. While getting help in handling heavy patients and taking break after some patients and modification in fix posture in order to avoid stressing an injury and work-related pain.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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