

Pattern and Pain Assessment of Musculoskeletal Disorders Attending to Physiotherapy Services in Selected Physiotherapy Centres of Dhaka City

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Abstract

Background: Musculoskeletal disorders are the most common causes of severe long-term pain and physical disability, affecting hundreds of millions of people around the world. Among different modalities of treatment and management for musculoskeletal pain, physiotherapy might be cost-effective. **Objective:** The aim of the study was to determine the pattern and pain assessment of musculoskeletal disorders attending to physiotherapy services in selected physiotherapy centers of Dhaka city. **Materials and method:** It was a cross sectional study. Sample size was 400 and a pre-tested, modified, semi-structured questionnaire was used to collect the data. Data were analyzed using SPSS software version 16.0. **Results:** Majority of the respondents (69.2%) belonged to 46-65 year age group with least in extreme age groups. Mean±SD of age was 33.58±12.33 years. Most of the respondents were male (69.2%). Study revealed that neck pain (75.2%) was the major complaint followed by back pain (48.00%). Regarding pattern of pain, intermittent (73.2%) type was predominant. Muscle spasm (29.2%) was the main cause for musculoskeletal pain followed by degenerative diseases (27.5%). Of the respondents 55.00% received traction, 91.25% exercise, 21.25% manipulation, 97.95% short wave diathermy, 85.00% ultrasound therapy, 33.75% infra red ray, and 12.75% electrical stimulation as physiotherapy treatment. There were statistically significant difference between sex and severity of pain ($p=0.019$), educational status and pain persisting time in years ($p=0.000$). There was also statistically highly significant difference between severity of pain responses before and after physiotherapy treatment ($p=0.000$). **Conclusion:** Study concluded that common areas of musculoskeletal pain were neck followed by back and shoulder and pain characteristics were intermittent, radiating, numbness, burning in nature. Respondents had taken medication and different type of physiotherapy services, including traction, exercise, short wave diathermy and ultrasound therapy.

Keywords: Musculoskeletal pain; manipulation; physiotherapy; occupational therapy.

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Introduction

Pain is a multidimensional experience that is a prominent feature of many musculoskeletal disorders and is a highly relevant complaint. Musculoskeletal disorders are the most common

causes of severe long-term pain and physical disability, affecting hundreds of millions of people around the world. In industrialized countries, which have increasingly aging populations,

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chronic musculoskeletal pain has become a significant health care burden.¹

In a study done in United Kingdom on patients with acute and chronic musculoskeletal pain receiving physiotherapy, it was revealed that persons those in the acute group were optimistic of a good result, whereas those with chronic degenerative conditions were either doubtful of improvement or unrealistic in their hopes for complete resolution of their symptoms.² Exercise-based intervention is an established modality of treatment in a number of medical conditions. Exercise might be cost-effective in musculoskeletal disorders, intermittent claudication, breast cancer patients, diabetes, and schizophrenia.³ Evidence-based efficacy of different modalities of treatment for musculoskeletal pain including exercise therapy, shortwave diathermy, ultrasound therapy, transcutaneous electrical nerve stimulation is presented in different studies.⁴

A study was conducted in Brazil in 2002 and developed a protocol for low back pain patients by conventional physical therapy treatment, with or without home exercises programme and found that higher level of satisfaction was with home exercises group.⁵ A systematic review was conducted by Shamliyan and Wang and found that short wave diathermy, orthotics, and magnetic stimulation are of no benefit in osteoarthritis knee, rather better response in exercise.⁶ A study conducted by Casserley-Feeney et al. found that most common site of musculoskeletal pain was spinal, male were more sufferer than female and they had previous experience of physiotherapy treatment.⁷

Musculoskeletal disorders are prevalent and a major burden on individuals and society.⁸ Different studies showed significant association between intensity of musculoskeletal pain and reduction in work ability.^{8,9} Ullrich et al. demonstrated that the lower body pain was as common as upper extremity pain, but tended to be more intense.¹⁰

A study was conducted in São Paulo, Brazil and found that the proportion of reported musculoskeletal pain was 22%, among which 20%

was male and 27% was female and risk ratio was 1.35.¹¹

Occupation in some cases play vital role for the occurrence of musculoskeletal disorders. A prevalence study was conducted among the Mashhad Dental students and found that 82% of undergraduate students and 90% of postgraduate students reported body pain in at least one region. The most prevalent pain locations were: chest/shoulder (46.9%), head/neck (41.8%), middle back (33.9%) and right hand (25.4%). Severity of reported pain was increased due to performing dental work.¹³

Anke et al. found that, pain was not associated with satisfaction with family life, partner relationship or sexual life.¹⁴ On the other hand Sustová et al. found that a statistically significant correlation with musculoskeletal complaints of medium and major intensity was demonstrated for sex and age.¹⁵ Moderate to severe pain and chronic pain had a significant impact on the occupational and social relationships as well as psychological aspect of those required multidisciplinary intervention.¹⁶

A prospective longitudinal study on older people revealed that, 48.9% chronic pain was associated with poor self-rated health, adjusted odds ratio was 2.26.¹⁷ Silva et al. reported that 77.5% respondents had chronic, 55.4% had radiating pain and 90.2% had constant pain with moderate to severe intensity.¹⁸

A prevalence study of musculoskeletal symptoms was 38.3%, was higher in females and in elderly, and had pain in the back, shoulder, and knee, in chronological order.¹⁹

Materials and method

A cross sectional study was conducted in Dhaka city to determine pattern and pain assessment of musculoskeletal disorders attending to physiotherapy services in selected physiotherapy centers with 400 subjects. The study was conducted in Metropolitan Medical Centre Limited (MMC Ltd.), Mohakhali, Dhaka, National Institute of Traumatology, and Orthopedic

Rehabilitation (NITOR), Sher-E-Banglanagor, Dhaka, Islami Bank Central Hospital Limited (IBCH Ltd.), Dhaka and Physiotherapy department of SAIC Institute of Medical Technology, Dhaka. A pre-tested modified semi structured questionnaire was used to collect the data on the basis of objectives and variables. The data were analyzed by using statistical packages for social science (SPSS) software version 16.0 for Windows.

Results

Mean±SD age of the respondents were 33.58±12.33 years with a range from 16 to 80 years.

It was found that majority of the respondents (63.8%) belonged to age group of 36-65 years. Among the respondents, 69.2% were male and 30.8% were female. It was also found that 30.8%, 33.8%, 18.0%, 8.8%, and 2.5% of the respondents belonged to the level of graduate, higher secondary, post graduate, secondary and primary education respectively (Table I).

Table I: Socio-demographic characteristics (N=400)

Variables	Categories	Frequency	Percentage
Age (years)	16-25	6	1.5
	26-35	42	10.5
	36-45	80	20.0
	46-55	132	33.0
	56-65	123	30.8
	>66	17	4.2
Sex	Male	277	69.2
	Female	123	30.8
	Primary	10	2.5
Educational status	Secondary	35	8.8
	Higher secondary	135	33.8
	Graduate	148	37.0
	Post graduate	72	18.0

Table II shows that 75.2%, 48.00%, 30.8%, 19%, 10.8%, and 6% of the respondents complained about neck pain, back pain, shoulder pain, pain in upper limb, knee pain, leg and ankle pain respectively. Among the respondents 77.8% were feeling pain on over stress.

Table II: Distribution of respondents by area of musculoskeletal pain (Multiple responses)

Area of pain	Frequency	Percentage
Neck	301	75.2
Back	123	48
Shoulder	76	30.8
Upper limb	192	19
Knee	43	10.8
Leg and ankle	24	6

Figure 1 shows the distribution of duration of persistence of pain. It showed that most (93.5%) of the respondents had been suffering from 1 to 5 years.

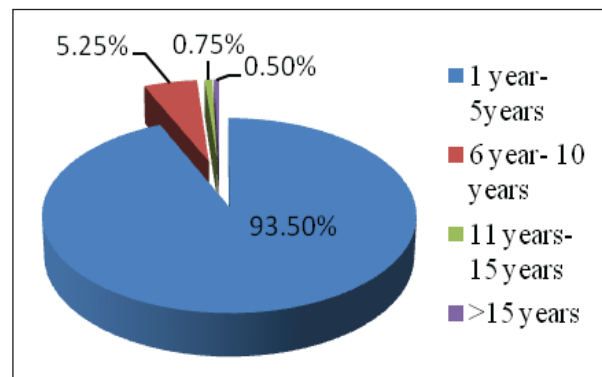


Fig 1: Distribution of respondents by duration of pain

Table III reveals that majority of the respondents (73.2%) complained about intermittent pain followed by radiating pain and continuous pain with almost equal proportion.

Table III: Distribution of respondents by pain characteristics (Multiple responses)

Characteristics of pain	Frequency	Percentage
Intermittent	293	73.2
Continuous	101	25.2
Tingling	34	8.5
Numbness	47	11.8
Burning	36	9
Radiating	116	29

Figure 2 shows that 44.5% respondents were suffering from moderate pain, 26.2% mild, 21.8% severe, and 7.5% had intolerable pain.

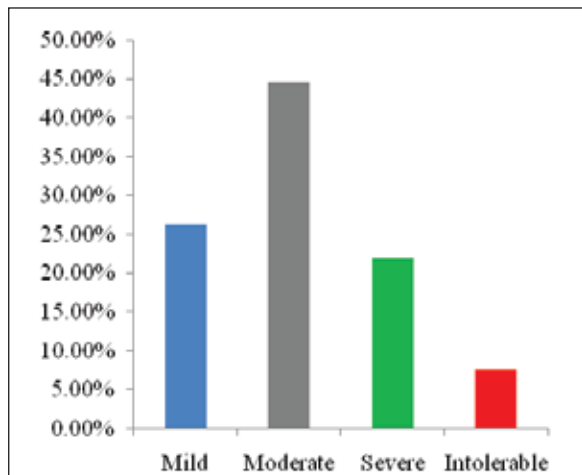


Fig 1: Distribution of respondents by duration of pain

Investigation(s) advised by physicians were done on 85.5% respondents. Among them 81.8% respondents had done x-ray, 70.2% had blood tests of different types, and 22.2% had MRI. Regarding diagnosis, 29.2% was diagnosed as muscle spasm, 27.5% as degenerative diseases, 12.2% as reduction of lordotic curve, 6.8% as inter-vertebral disc diseases, 5.8% as gout and 4% had no abnormal findings (Table IV).

Table IV: Distribution of respondents by type of investigations and disease diagnosis (Multiple responses)

Variables	Frequency	Percentage
Investigations		
X-ray	327	81.8
Blood test	281	70.2
MRI	89	22.2
Diagnosis		
No abnormal finding	16	4
Muscle spasm	117	29.2
Reduction of lordotic curve	49	12.2
Degenerative diseases	110	27.5
Inter-vertebral disc diseases	27	6.8
Gout	23	5.8

Table V shows that 83.8% respondents received medication, 61.2% physiotherapy, and 3.5% occupational therapy.

Table V: Distribution of respondents by type of treatment (Multiple responses)

Treatment pattern	Frequency	Percentage
Medication	335	83.8
Physiotherapy	245	61.2
Occupational therapy	14	3.5

Among physiotherapy, 55.00% respondents received traction, 91.25% received exercise, 21.25% received manipulation, 97.95% received short wave diathermy, 85.00% received ultrasound therapy, 33.75% received infra red ray, and 12.75% received electrical stimulation (Table VI).

Table VI: Distribution of physiotherapy treatment (Multiple responses)

Physiotherapy	Frequency	Percentage
Traction	220	55
Exercise	365	91.25
Manipulation	85	21.25
Short wave diathermy	390	97.95
Ultrasound therapy	340	85
Infra red ray	135	33.75
Electrical stimulation	51	12.75

Statistically significant difference was observed between sex and severity of pain and also between educational status and problem persisting time in years (Table VII & VIII).

Table VII: Distribution and association of respondents between sex and severity of pain (N=400)

Educational status	Problem persist in year			p-value
	1-5 years	6-10 years	>11 years	
Primary	8	2	0	
Secondary	34	1	0	
Higher secondary	132	3	0	0.000
Graduate	138	9	1	
Post-graduate	62	8	2	

p value obtained from Fischer's exact test

Discussion

This study reveals that common area of musculoskeletal pain were neck in 75.2%, back 48.00%, shoulder 30.8%, upper limb 19%, knee 10.8%, and leg and ankle in 6% respondents. These findings were similar to that of the study carried out by Movahhed et al. and Oha et al.^{12,13} This study showed that 73.2% had intermittent pain, 29% radiating pain, 25.2% continuous pain, 11.8% had numbness, and 9% burning and 8.5% tingling sensation. These findings were similar to the findings of Silva et al.¹⁸ Among the respondents 44.5% were suffering from moderate pain, 26.2% mild pain, 21.8% severe pain, and 7.5% are feeling intolerable pain and these findings were similar to the study carried out by Silva et al.¹⁸ Study reveals that 55.00% respondents received traction, 91.25% received exercise, 21.25% received manipulation, 97.95% received short wave diathermy, 85.00% received ultrasound therapy, 33.75% received infra red ray, and 12.75% electrical stimulation. These findings were supported by the findings of Hanada et al. and Shamliyan et al.^{4,6}

There were statistically significant association between sex and severity of pain, educational status and problem persisting time in years ($p=0.019$, 0.000 , <0.05). Those findings were similar to the study carried out by Sustová et al.¹⁵

Conclusion

The present study found that the common areas of musculoskeletal pain were neck, back, shoulder, upper limb, knee, leg and ankle. Characteristics and intensity of musculoskeletal pain were intermittent, radiating, continuous, numbness, burning, and tingling sensation and moderate to severe and intolerable pain. Respondents had taken different types of physiotherapy services including traction, exercise, manipulation, short wave diathermy, ultrasound therapy, infra red ray, and electrical stimulation.

Disclosure

All the authors declared no competing interest.

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