International Journal of Community Medicine and Public Health
Kakuli SA et al. Int J Community Med Public Health. 2026 Jul;13(7):3309-3317
https://www.ijcmph.com
pISSN 2394-6032 | eISSN 2394-6040

DOI: https://dx.doi.org/10.18203/2394-6040.ijcmph20262218

Original Research Article

Work related musculoskeletal disorders among female physiotherapists in Bangladesh

Samena Akter Kakuli[1]*, Fatema Maria Jahan[2], Walilul Islam[3]

[1]School of Science and Technology, Bangladesh Open University, Gazipur, Bangladesh
[2]Physio Move Physiotherapy Center, Uttara-7, Dhaka, Bangladesh
[3]Bangladesh Health Professions Institute (BHPI), Chapain, Dhaka, Bangladesh

Received: 16 March 2026
Accepted: 03 June 2026

***Correspondence:**
Samena Akter Kakuli,
E-mail: kakuliphysio@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: Work-related musculoskeletal disorders (WMSDs) affect many health professionals, among whom are Physiotherapists. Shoulder pain, elbow pain, low back pain, knee pain, neck pain and ankle pain are some of the complaints that can attribute to repetitive motion tasks, awkward posture and manual patient handling. Although prevalence of WMSDs among Physiotherapists have been documented in some Bangladeshi studies, information specifically for female Physiotherapist is limited.
Methods: To identify the work-related musculoskeletal disorders among female physiotherapists in Bangladesh; a descriptive cross-sectional study design was selected.
Results: Total 99 female physiotherapists accept the invitation from online survey and 79 were recruited, in which the prevalence was WMSDs (79.79%), with Bachelor degree (72.15%) and clinical physiotherapists 58.23%, respectively. Most of the participants experienced mild pain (53.16%); neck pain was the most prevalent issue (29.11%). Pain duration, daily activity limitation, ODI, DASH and HRQoL were associated with age (all $p<0.05$). BMI, work experience and patient number had significant relationship with the duration of pain and disability score as well as HRQoL ($p<0.05$), but not in pain intensity, NDI and LEFS.
Conclusions: In Bangladesh, female Physiotherapist are frequently suffering from musculoskeletal disorders related to their jobs. Therefore, the likelihood of WMSDs can be reduced by using preventive measures and appropriate patient care practices.

Keywords: Bangladesh, Female, Physiotherapist, Work related musculoskeletal disorders

INTRODUCTION

Work related musculoskeletal disorders (WMSDs) are a major concern for Physiotherapists (PTs) globally, with a 2024 systematic review confirming that a large percentage experience these conditions annually. The most common areas affected are the low back and neck, with a clear connection to the physical requirements of the job. Key risk factors include manual techniques, sustained awkward postures, repetitive movements, and patient handling, all of which are identifiable and can be changed to reduce the risk.[1] A recent study in Bangladesh found that 85.5% of the country's PTs suffered from WMSDs. Female PTs were particularly susceptible, and the most common problem areas were the neck (25.7%) and lower back (15.2%).[2] Despite a growing body of evidence, indicating a higher prevalence of neck and upper-extremity WMSDs in female PTs specific, sex-disaggregated data from Bangladesh is still limited. Current local research does not often examine factors that uniquely affect female clinicians, such as a varied mix of tasks, body measurements, or the "double burden" of

professional and household duties. However, the prevalence of WMSDs varied worldwide. In USA the prevalence of WMSDs in female Physiotherapist were 76.4%, in the UK 41.5%, in the Pakistan 75%, in the India 79.19% and in the Bangladesh 31%.[2-6] In practically, the current wide variance of prevalence of WMSDs in female Physiotherapist in Bangladesh compare to other developed and neighbour country disproportionately varies. This study aimed to determine how common work-related musculoskeletal disorders (WMSDs) are among female PTs in Bangladesh, and which body parts are most affected. It also sought to identify key factors, including personal traits (like age and BMI), job nature and workplace conditions (like experience, hour, patient volume and practice area speciality) on disability as well as health related quality of lie. Finally, the research examined the impact association between socio-demographic, professional practice related variable and WMSDs.

METHODS

Research design

Researchers conducted a descriptive cross-sectional study from July 2023 to February 2024, utilizing an online survey questionnaire based on previously published literature.[7,8]

Study site

Female physiotherapists working in hospitals, clinics, academic institutions, chamber and rehabilitation centres in Bangladesh.

Study population

All female Physiotherapists in Bangladesh were the population of this study.

Sampling technique and sample

We used purposive sampling to obtain the study sample. The authors obtained a list of registered Physiotherapists from the Bangladesh Physiotherapy Association and used this to e-mail 250 registered female Physiotherapists using an online survey. 99 female PTs accept the invitation and 79 respondents met the study's inclusion criteria: they were female Physiotherapists between the ages of 24 and 50 years, had a minimum of three months of work experience, and consented to participate. The study excluded anyone who did not want to participate, had pain from a medical condition, or was not currently involved in Physiotherapy practice or teaching. After the initial invitation, we sent a reminder to participants two weeks later. To prevent duplicate submissions, we enabled a required sign-in option. For confidentiality, we removed all identifying information, such as names and registration numbers, replacing them with a code number before entering the data for analysis on a password-encrypted computer.

Data collection technique and tools

The data was gathered with the aid of a structured questionnaire administered as internet survey on Google Forms by the data collector himself. The numerical pain rating scale (NPRS) is one of the widely used tools for pain severity measurement ranges from 0 to 10 cm. It can be calculated using the following interpreter calculus: 0 cm: The person has no pain, 1 to 3 cm: mild pain; pain can be felt but it does not have a large impact on daily life. At 4-6 cm: pain experienced by everyone, and cannot alleviate by medication. Some discomfort may restrict some activities and necessitate strategies to cope with intolerably sensitive muscles. In addition, 7-10 cm: severe pain and very disruptive to normal activities (sensitivity 81% septicity 74%).[9]

To assess health-related quality of life (HRQoL), a five-point Likert-type question derived from the SF-12 was applied. The questionnaire assessed health as “excellent,” “very good,” “good,” “fair,” or “poor” and body part affected by pain according to the Nordic Pain questionnaire with test sensitivity and specificity of 85.1% and 70.1%.[10,11]

The Oswestry Disability Index (ODI) is a widely used method of quantifying disability and pain in individuals with low back pain (LBP). It helps gauge the extent to which a person's daily activities and life are influenced by low back pain. The ODI is composed of ten items with six possible responses and a score ranging from 0 to 5, high scores meaning higher disability (maximum score=50). Then, the score is converted into a percentage for ease of understanding. The meaning of the scores is: 0-20%: minimal disability: The patient can do all activities without any difficult though there may be some pain. 21-40% moderate disability: most activities can be carried out with some discomfort. 41-60%: severe disability: The patient experiences pain and is restricted from some daily activities. 61-80%: very severe disability: assistance is needed to help the patient perform all their activities of daily living. 81-100%: Complete Disability: the patient is unable to perform most or all daily activities due to back pain, and may require constant care. However, the sensitivity of ODI was 80% and specificity 82%.[12]

The disability of the arm, shoulder and hand (DASH) questionnaire is used to determine physical function and symptoms in musculoskeletal diseases of the arm, shoulder and hand, such as complaints related to the shoulder. Physically consists of 30 questions which assesses physical function, feelings of well-being and symptoms such as pain or stiffness; social/emotional consequences. Scores are 0 (none) to 100 (severe). Dashed is scored from 0, the best score (no disability; no difficulty performing activities, no symptoms) to 100, the

worst score. 100 = most severe impairment in ability to perform activities and most severe symptoms. Interpretation of shoulder DASH Scores: 0-20-Usually indicates very mild or no disability. The person has only mild problems with daily activities using the arm. 21-40: represents mild disability. Some problems with exercises may appear, e.g. those where he or she has to stretch his or her arms above head, or lift and carry heavy things. 41-60: moderate disability. The daily activities (e.g., lifting, carrying, arm use) can be significantly affected and there is often ongoing pain. 61-80: severe disability. He or she has problems with daily stuff, rechanging up, lifting things and carrying them, anything does is pain. 81-100: extreme disability. He or she may have very limited capabilities for work load that involve the shoulder, arm and hand. However, the sensitivity and specificity were 75.2% and 76.5% respectively.[13]

The NDI is a patient reported outcome measure for patients with neck pain. The scale comprises 10 items: pain intensity, personal care, lifting, reading, headache-triggering factors, concentration level between headaches and not during headaches (work), driving; sleeping; and recreation. 10 items scored 0-5, hence range 0-50. Some authors employ a multiplication factor of 2 to turn this into a percentage (0-100%). Higher scores indicated a worse level of disability related to neck pain. Although there is some slight fluctuation between authors used for bands, one of the most broadly-cited classification is 0-4 (on 0-50 version) = no disability; 5-14 = mild disability; 15-24 = moderate disability; 25-34= severe disability ≥35 =total (or very severe) disability. Accuracy and reliability. The sensitivity was 81.08%; specificity 78.57%.[14]

The LEFS is a self-report, condition-specific questionnaire to measure functional status of the lower extremity in musculoskeletal adult patients. This test consists of 20 questions, each of which refers to a daily or leisure activity using the lower limbs (walking, going up and down stairs, squatting us for riding movements). Likert scales core from 0 ('Unable to do') to 4 ('No difficulty'). Total score of all item scores: 20 items x max 4 = 80 points (min 0). Higher is better lower-extremity function (less limitations). Therefore, Functional status scores of 80-99% were considered indicative of mild limitation, whereas scores of 60-79% reflected moderate disability. Scores between 40% and 59% denoted severe functional limitation, while scores below 40% were indicative of severe disability and dependence on others for daily activities.[15]

The questionnaires first translated into Bengali using a forward-backward translation method. To ensure the survey's comprehension, timing, and cultural relevance, the data collector conducted a pre-test with five participants and revised the items based on their feedback. Additionally, three local Physiotherapy experts reviewed the questions to confirm the survey's content validity.

Data analysis

Data was analyzed using the statistical package for the social sciences (SPSS) version 25.0 software for Windows. Continuous variables are expressed as means with 95% confidence intervals and categorical ones as numbers with percentages. The Chi-square test was used to assess the association of qualitative variables, and if necessary Fisher's exact test. We considered $p<0.05$ as the significance level to avoid type I error.

RESULTS

Socio-demographic characteristics of the participants

The socio-demographic information of the participants are listed in the Table 1. Among 79 participants, the mean (±SD) age was 29.18 (±3.35) years. The eldest female Physiotherapist age was 40 years and the youngest was 25 years. The study's participants were predominantly from urban areas, with 63 (79.69%) living in cities, compared to 10 (12.65%) in semi-urban and 6 (7.59%) in rural locations (Figure 1).

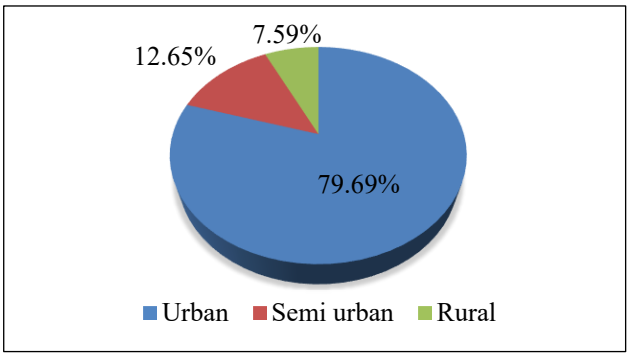


Figure 1: Living area of participants.

Most participants, 57 (72.15%), had a bachelor's degree in Physiotherapy, while 21 (26.58%) had a post-graduate degree and a single participant (1.26%) had a doctorate. Their work settings were diverse: 27 (34.18%) worked in a private practice, 25 (31.64%) in a private hospital and 17 (21.52%) in a rehabilitation center. A smaller number worked for an NGO (9, 11.39%) or in government service (1, 1.26%). Income levels showed that the majority, 54 (68.35%), earned between 25,000 and 30,000 taka per month, with 18 (22.78%) earning between 30,000 and 50,000 taka, and 7 (8.86%) earning over 50,000 taka. Based on the study, 4 (5.06%) participants were obese, while 26 (32.91%) were overweight. The majority, 40 (50.63%), were within a normal weight range, and the remaining 9 (11.29%) were underweight (Table 1).

Professional practice related information of the participants

The results of 79 participants revealed that Clinical Physiotherapists made up the largest group with 46

participants, or 58.23%. The next largest group was Senior Physiotherapists at 13 (16.45%), followed by Consultant Physiotherapist at 12 (15.19%) and Junior Consultant Physiotherapist at 8 (10.12%) (Figure 2).

Table 1: Socio-demographic information of the participants.

Characteristics		Number (%)
Age range (in years)	25-30	61 (77.21)
	31-35	14 (17.72)
	36-40	4 (5.06)
Educational qualification	Graduate	57 (72.15)
	Post-graduate	21 (26.58)
	Doctorate	1 (1.26)
Job nature	Chamber practice	27 (34.18)
	Private hospital	25 (31.64)
	Rehabilitation center	17 (21.52)
	NGO	9 (11.39)
	Government service	1 (1.26)
Monthly income (Taka/month)	25,000- 30,000	54 (68.35)
	30,000-50,000	18 (22.78)
	>50,000	7 (8.86)
BMI (kg/m^2)	Obese (30 or above)	4 (5.06)
	Overweight (25-29.9)	26 (32.91)
	Normal (18.5- 24.9)	40 (50.63)
	Underweight <18.5	9 (11.29)

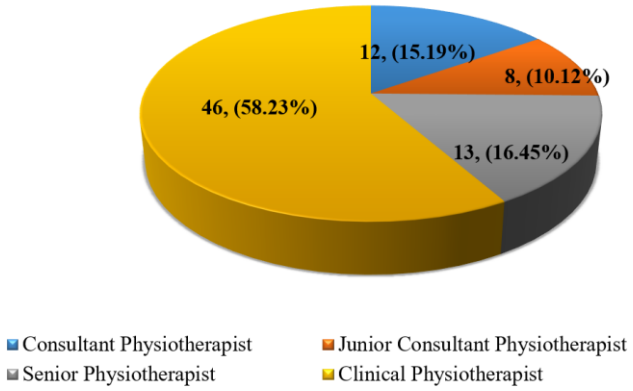


Figure 2: Professional practice related information of the participants.

In the working experience, the outcomes showed that 48 (60.75%) had work experience of 1-5 years. Other 22 (27.84%) were in practice for 6 to 10 years and more than a decade of experience was enjoyed by only 9 (11.39%) of the sample female Physiotherapists. The majority of participants worked 6-8 hours (48; 60.72%). Another 15 (18.97%) worked 8-12 hours, 3 (3.79) more than 12 hours and 13 (16.44%) worked less than 5 hours.

Daily patient volume varied among the physiotherapists surveyed. The largest group, 36 (45.54%), treated 5 to 10 patients daily, followed by 28 (35.42%) who treated 11 to 15 patients. The fewest patients were seen by 12 (15.18%) of the Physiotherapists, who treated fewer than 5 patients, whereas only 3 (3.79%) treated more than 15 patients per day.

The data showed that 39 (49.33%) of physiotherapists treated a wide range of patients. In contrast, 24 (30.36%) specifically focused on musculoskeletal disorders. Only a minority of the Physiotherapists treated other specific patient populations: 12 (15.18%) treated patients with neurological disorders, and a mere 4 (5.06%) treated pediatric patients (Table 2).

Table 2: Professional practice related information of the participants.

Practice related information		Number (%)
Working experience (years)	1-5	48 (60.75)
	6-10	22 (27.84)
	>10	9 (11.39)
Working hours in a day	< 5	13 (16.44)
	6-8	48 (60.72)
	8-12	15 (18.97)
	>12	3 (3.79)
Daily patient volume	< 5	12 (15.18)
	5-10	36 (45.54)
	11-15	28 (35.42)
	> 15	3 (3.79)
Practice area specialty	All type of conditions related to physiotherapy	39 (49.33)
	Musculoskeletal physiotherapy	24 (30.36)
	Neurological physiotherapy	12 (15.18)
	Pediatric physiotherapy	4 (5.06)

Out of 99 participants, 79 (79.79%) reported experiencing some form of bodily pain, while the remaining 20 (20.20%) were pain-free. The most common causes of pain for female Physiotherapists identified as bending and twisting their bodies 12 (15.18%), followed by manoeuvring bulky equipment or lifting patients 11 (13.92%). Other significant contributors included continuing to work while tired and using hands-on patient treatment techniques 10 (both at 12.66%), and administering various therapeutic treatments 9 (11.40%). Less frequent causes were moving a patient from one surface to another and holding a single posture for a long time 8 (both at 10.12%), and doing the same motions repeatedly 6 (7.60%). The least common cause was reacting to a patient's sudden, unexpected movement 5 (6.33%). However, 23 (29.11%) participants suffered from pain with a duration ranging from 1-2 years whereas 56 (70.88%) participants from >2 years. The pain levels of the participants, as measured by the NPRS, showed that the majority experienced mild pain. Specifically, 42 participants (53.16%) had mild pain, 33 (41.77%) had moderate pain, and 4 (5.06%) had severe pain. Pain affected the daily activities of 22 (27.84%) participants, while 57 (72.15%) participants did not experience this

effect. Several scales assessed disability, with different scales used for different regions of pain.

In ODI scale, 43 female PTs responded to minimal disability, 34 responded to moderate disability and 02 for severe disability. No participants replied to very severe disability and complete disability.

Total 48 respondents representing "No difficulty at all" or "No symptoms", 23 for mild disability, 08 for moderate disability and no participants' respondent to severe and extreme disability levels in DASH scale.

The NDI reflected another pattern where 33 female PTs clicked to mild disability, 24 as no disability, 18 moderate disability and 04 as severe disability. In addition, none of the female PT responded to complete or very severe disability.

The LEFS scale revealed that 38 female PTs showed mild disability, moderate disability and severe limitation had nearly the same number: 21 versus 20. The most severe level, severe disability/dependent represented by none of the respondents.

According to the survey, 22 participants rated health-related quality of life (HRQoL) as 'Excellent'. A high quality of life was reported by 37 participants, which represented the maximum count. In addition, 11 people participants given a rating of good. The least number of individuals reported a Fair quality of life, 6 participants and only 3 described their life as poor (Table 3).

Table 3: Musculoskeletal disorders related information of the participants.

Characteristics		Number (%)
Presence of pain	Yes	79 (79.79)
	No	20 (20.20)
Activities causing pain	Moving a patient from one surface to another	8 (10.12)
	Doing the same motions over and over	6 (7.60)
	Manoeuvring bulky equipment or lifting patients	11 (13.92)
	Continuing to work despite feeling tired	10 (12.66)
	Bending and twisting the body	12 (15.18)
	Using hands-on techniques for patient treatment	10 (12.66)
	Holding the same posture for an extended duration	8 (10.12)
	Reacting to a patient's sudden, unexpected movement	5 (6.33)
	Administering various therapeutic treatments	9 (11.40)
Pain duration	1-2 years	23 (29.11)
	>2 years	56 (70.88)
Pain intensity (10 cm NPRS)	Mild pain (1-3 cm)	42 (53.16)
	Moderate pain (4-6 cm)	33 (41.77)
	Severe pain (7-10 cm)	4 (5.06)
Pain affect daily activities	Yes	22 (27.84)
	No	57 (72.15)
Characteristics		**Number**
Disability level as per different scales	ODI scale	
	Minimal disability	43
	Moderate disability	34
	Severe disability	02
	Very severe disability	00
	Complete disability	00
	DASH scale	
	Very mild or no disability	48
	Mild disability	23
	Moderate disability	08
	Severe disability	00
	Extreme disability	00
	NDI scale	
	No disability	24
	Mild disability	33
	Moderate disability	18
	Severe disability	4
	Complete or very severe disability	00

Continued.

Characteristics		Number (%)
	Characteristics	**Number**
	LEFS scale	
	Mild disability	38
	Moderate disability	21
	Severe limitation	20
	Severe disability/dependent	00
Health related quality of life	Excellent	22
	Very good	37
	Good	11
	Fair	6
	Poor	3

From the data obtained from Nordic musculoskeletal questionnaire, pain was listed through different body areas (Figure 3). However, neck pain was the most common issue, affecting 23 (29.11%) of participants. Other areas of pain included the lower back 20 (25.32%), upper back 2 (2.53%), wrist 8 (10.13%), ankles 6 (7.60%), knees 14 (17.72%), and 3 hips (3.78%). The least common pain was in the shoulders 2 (2.53%) and elbows 1 (1.27%) (Figure 4).

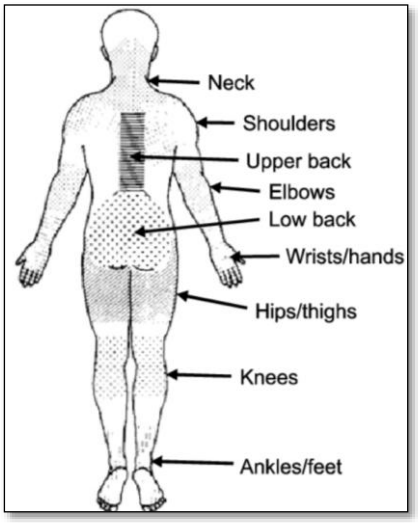


Figure 3: Body regions of human to address pain.

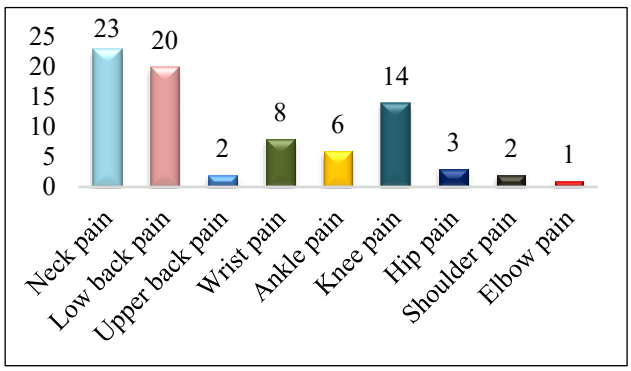


Figure 4: Pain in different body parts from last 12 months perspectives.

A univariate analysis of socio-demographic characteristics and musculoskeletal disorders demonstrated that age had a significant effect on pain duration (p=0.024), the extent to which patients were impacted by their pain in daily activities (p=0.041), ODI score (p=0.015), DASH score (p=0.040) and HRQL (p= 0.011). In contrast, the attributes of Job nature had significant roles in pain duration, pain affect daily activity, ODI (p=0.05). Consequently, working in a chamber can have associations with WMSDs among female Physiotherapists. Moreover, BMI was significantly associated with pain duration, pain affect daily activity; ODI, DASH and health related quality of life (p=0.05). This point to a direct association between weight and pain and disability. Higher BMI leads to more severe pain in female Physiotherapists with WMSDs, but not to more functionally disabling disorders or a lower quality of life.

However, the association between professional practice related factor and musculoskeletal disorders indicated that working experience was significantly associated with pain duration (p=0.006), daily activity limitations (p=0.016) disability scores (ODI p=0.008; DASH p=0.012) and quality of life (p=0.007). By comparison, no such relationship was present with pain intensity (p=0.171) or other functional scores (NDI p=0.130, LEFS p=0.214). Accumulative years of working is related to higher level of pain, disability and lower quality life in female Physiotherapists. Moreover, Bangladeshi female Physiotherapists worked more than 8 hour had significantly higher longer pain duration (p=0.031), pain affect daily activity (p=0.008), ODI (p=0.019), DASH (p=0.013) and health related quality of life (p=0.005). There was no significant association with pain intensity (p=0.312), NDI (p=0.197) and specific functional scores as the LEFS (p=0.197). This finding supported that female Physiotherapists had longer working hours in Bangladesh and it might found association with prolonged pain, great disability, and lower HRQol. Numbers of daily patients were significantly associated with pain duration (p=0.015), pain affect daily activity (p=0.020), disability (ODI p=0. 0.012; p=0.033) and HRQoL (p=0.006). There was no significant association with pain intensity (p=0.205), NDI score (p=0.162) LEFS

scores (p=0.125), Therefore, greater volume of daily patient had significantly related to more chronic pain, disability and lower quality of life in female Physiotherapists in Bangladesh. In addition, practice area among female Physiotherapists in Bangladesh had a significant effect on limitations in activities (p=0.031), disability (ODI p= 0.043; DASH p=0.046) and quality of life (p=0.036). This indicated that specialty contributes to some outcomes, but not pain duration (p=0.348), pain intensity (p=0.312), NDI (p=0.252) or LEFS (p=0.334) (Table 4).

Table 4: Association between socio-demographic variable, professional practice related variable and musculoskeletal disorders.

Variable	Pain duration		Pain intensity		Pain affect daily activity		Disability level								Health related quality of life	
							ODI		DASH		NDI		LEFS			
	χ^2	P	χ^2	P	χ^2	P	χ^2	P	χ^2	P	χ^2	P	χ^2	P	χ^2	P
Age level	11.27	0.024*	4.82	0.307	9.96	0.041*	12.34	0.015*	10.02	0.040*	6.29	0.178	5.76	0.217	13.11	0.011*
Job nature	16.42	0.037*	9.11	0.332	17.86	0.022*	15.74	0.045*	18.21	0.020*	10.26	0.248	8.92	0.352	19.36	0.013*
Categ-ories of BMI	14.28	0.006*	5.47	0.243	12.03	0.017*	13.21	0.010*	11.89	0.019*	6.15	0.188	7.02	0.134	15.07	0.005*
Range of working experi-ence	14.56	0.006*	6.41	0.171	12.22	0.016*	13.78	0.008*	12.95	0.012*	7.12	0.130	5.81	0.214	14.21	0.007*
Range of work-ing hour	10.65	0.031*	4.77	0.312	13.89	0.008*	11.77	0.019*	12.66	0.013*	6.02	0.197	6.87	0.142	15.04	0.005*
Daily patient volume	12.32	0.015*	5.93	0.205	11.65	0.020*	12.87	0.012*	10.48	0.033*	6.54	0.162	7.21	0.125	14.66	0.006*
Practice area specialty	8.91	0.348	9.33	0.312	16.88	0.031*	15.92	0.043*	14.73	0.046*	10.22	0.252	9.11	0.334	16.34	0.036*

*P<0.05

DISCUSSION

In this study of 79 female Physiotherapists (ages 25-40, mean 29.18 years), most were urban residents with a bachelor's degree. They primarily worked in private practice or hospitals, earning 25,000-30,000 taka monthly. Their nutritional status was mostly normal weight (50.63%) or overweight (32.91%). However, different studies found study's sample of young, urban, and educated female Physiotherapists highlights their vulnerability to musculoskeletal disorders.[2,16] Despite a majority having bachelor's degrees, they face risks from manual therapy, long hours, and high patient loads. The high rate of overweight/obese individuals (38%) is also a notable risk factor.

In this sample of 79 female Physiotherapists, Clinical Physiotherapist (58.23%) with experience ranging from 1-5 years (60.75%). Most of them worked for 6 to 8 hours a day (60.75%) and treated 5-10 patients (45.56%). Almost one-half (49.36%) were in general practice. WMSDs world over studies repeatedly report that Physiotherapists are at a high risk of work-related musculoskeletal disorders. This is confirmed by a study conducted in Saudi Arabia, which associates frequent neck and lower back pain with the duration and repetition of tasks. Similarly, readiness of Physiotherapists and along with physical fitness were found to be associated for the prevalence of WMSDs among Croatian population.[17]

The findings revealed a high prevalence of musculoskeletal pain, with 79.79% of participants reporting some form of bodily pain. The most commonly affected areas were the neck (29.11%), lower back (25.32%), and knees (17.72%), consistent with previous studies highlighting these regions as prevalent sites of discomfort among Physiotherapists.[2]

Females practicing Physiotherapy in the present study demonstrated mild and moderate functional impairment when analyzed on various scales. Most of the participants (43) in ODI was regarded as minimal disability, DASH 48 were no symptoms, and 33 and 38 mean mild disability on NDI and LEFS correspondingly. These results are comparable with other studies, showing

that musculoskeletal conditions have a significant impact on the functional capacity of Physiotherapists.[18]

The study revealed important association between sociodemographic and work-related factors with WMSDs among the female Physiotherapists in Bangladesh. Age was significantly associated with pain duration (p=0.024), limitation in daily activity (p=0.041), ODI (p=0.015), DASH score (p=0.040) and HRQoL subscale (p=0.011). This indicating that younger female Physiotherapists were more at risk for longer-loaded pain, higher disability and lower quality of life; which is consistent with existing literature from India and Pakistan showing age related vulnerability to musculoskeletal disorder.[19] Job nature and BMI were also related to pain duration, disability (ODI, DASH), and HRQoL ($p<0.05$) with respect to occupational and weight-related risk factors; however, there was impact on pain intensity and NDI/LEFS scores.

Professional practice variables working experience, working hours, daily patient volume, and specialty were significantly associated with pain duration, daily activity limitations, disability, and quality of life ($p<0.05$). This aligns with global evidence that workload and specialty influence musculoskeletal risk in Physiotherapists. Notably, these factors did not significantly affect pain intensity or certain functional scores, suggesting selective impacts on WMSDs outcomes.[20]

The study's shortcomings include the use of purposive sampling, which could lead to selection bias. In addition, the accuracy of reporting pain and disability may also be impacted by memory bias due to the self-reported nature of the data.

CONCLUSION

It is necessary to implement targeted treatments to address the high prevalence of WMSDs among Bangladeshi female Physiotherapists. The introduction of ergonomic techniques, encouragement of physical activity, and posture education can all help to lessen the effects of these conditions. When a line of cut-off is, appropriate based on the Physiotherapists in this area; more research should conduct to evaluate the effectiveness of these and other similar interventions.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Review Board of the School of Science and Technology, Bangladesh Open University, Gazipur (Ref: BOU/SST/MDMR/146/17/1907)

REFERENCES

1. V. Pena-Curbelo, Meneses-Monroy A, Mayor-Silva LI, Martin-Casas P, Alvarez-Melcon AC. Work-related musculoskeletal disorders in physical therapists: a cross-sectional study. JCM. 2024;13(23):7425.
2. Hossain A, Proma TS, Raju R, Ahmed S, Islam A. Employment-related musculoskeletal complications experienced by the physical therapists in Bangladesh: a comprehensive cross-sectional case study. Bull Fac Phys Ther. 2022;27(1):36.
3. Le TTT, Jalayondeja W, Mekhora K, Bhuuanantanondh P, Jalayondeja C. Prevalence and risk factors of work-related musculoskeletal disorders among physical therapists in Ho Chi Minh City, Vietnam. BMC Publ Heal. 2024;24(1):6.
4. Kakaraparthi VN, Vishwanathan K, Gadhavi B, Reddy RS, Samuel PS, Alshahrani MS, et al. The prevalence, characteristics, and impact of work-related musculoskeletal disorders among physical therapists in the Kingdom of Saudi Arabia–a cross-sectional study. Medycyna Pracy. Workers' Health and Safety. 2021;72(4):363-73.
5. Kompal R, Roomi MS, Qadir R, Bilal S, Khan SN, Shehrin T, Amanbekovich A. Prevalence of work related musculoskeletal disorders among physiotherapists of Multan. Int J Nat Medi Heal Sci. 2022;2(1):17-20.
6. Ramanandi VH, Desai AR. Association of working hours, job position, and BMI with work-related musculoskeletal disorders among the physiotherapists of Gujarat-an observational study. Bull Fac Phys Ther. 2021;26(1):3.
7. Vieira ER, Svoboda S, Belniak A, Brunt D, Rose-St Prix C, Roberts L, et al. Work-related musculoskeletal disorders among physical therapists: an online survey. Disability and Rehabilitation. 2016;38(6):552-7.
8. Abu-Taleb W, Rehan Youssef A. Work-related musculoskeletal disorders among Egyptian physical therapists. Bull Fac Phys Ther. 2021;26(1):7.
9. Thong ISK, Jensen MP, Miró J, Tan G. The validity of pain intensity measures: what do the NRS, VAS, VRS, and FPS-R measure? Scandinavian Journal of Pain. 2018;18(1):99-107.
10. Ahmed S, Numan SM, Rahman MH. Prevalence of work-related low back pain and associated risk factors among physiotherapists in Dhaka, Bangladesh: a cross-sectional study. Int J Ther Rehabilit. 2023;30(9):1-11.
11. Mendonça CR, Noll M, Silveira EA. Adaptation and validation of body maps for musculoskeletal pain location in patients with severe obesity. Korean J Pain. 2018;31(4):268-76.
12. Hambrecht J, Köhli P, Chiapparelli EA, Amoroso K, Zhu J, Güven A, et al. 54. How much change in Oswestry Disability Index is necessary to make your patient satisfied after lumbar surgery?. NASSJ. 2024;18:100392.
13. Budtz CR, Andersen JH, De Vos Andersen NB, Christiansen DH. Responsiveness and minimal important change for the quick-DASH in patients with shoulder disorders. Health Qual Life Outcomes. 2018;16(1):226.

14. Donk R, Verbeek A, Verhagen W, Groenewoud H, Hosman A, Bartels R. The qualification of outcome after cervical spine surgery by patients compared to the neck disability index. Grasso G, ed. PLoS ONE. 2016;11(8):e0161593.
15. Barber-Westin SD, Noyes FR. Rating of Athletic and Daily Functional Activities. In: Noyes' Knee Disorders: Surgery, Rehabilitation, Clinical Outcomes. Elsevier; 2017:1211-1221.
16. Banik PC, Zaman MM. High prevalence of musculoskeletal disorders among Bangladeshi women deserves attention. Bangabandhu Sheikh Mujib Medi Univers J. 2023;16(1):1.
17. Allam N, Alradi R, Alruawily A, Alruwaili K, Alsaiari T, Alruwaili R. Work-related musculoskeletal disorders among physiotherapists in Jouf region: A cross-sectional study. MS. 2022;26(130):01-08.
18. Alnaser MZ, Aljadi SH. Physical therapists with work-related musculoskeletal disorders in the State of Kuwait: A comparison across countries and health care professions. WOR. 2019; 63(2):261-8.
19. Tislar MH, Starc G, Kukec A. Work-related musculoskeletal disorders among physiotherapists and physiotherapy students in Croatia and their association with physical fitness. Slovenian Journal of Public Health. 2022; 61(3):171-80.
20. Hossain MD, Aftab A, Al Imam MH, Mahmud I, Chowdhury IA, Kabir RI, et al. Prevalence of work related musculoskeletal disorders (WMSDs) and ergonomic risk assessment among readymade garment workers of Bangladesh: A cross sectional study. Guo NL, ed. PLoS ONE. 2018;13(7):e0200122.

Cite this article as: Kakuli SA, Jahan FM, Islam W. Work related musculoskeletal disorders among female physiotherapists in Bangladesh. Int J Community Med Public Health 2026;13:3309-17.