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Prevalence and risk factors associated with work-related musculoskeletal disorders among physiotherapists in United Arab Emirates

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The rate of work-related musculoskeletal disorders (WRMDs) among hospital workers is approximately twice as high as that in other service industries, making it a significant cause of absenteeism and reduced productivity. The study aimed to determine the severity and extent of WRMDs among physiotherapists in United Arab Emirates (UAE) last 2 years and to specify the specialty area, task, and the most common risk factors for these injuries. Also, to identify the different coping mechanisms the physiotherapist in UAE use to deal with WRMDs. The research was conducted as a descriptive cross-sectional design between March and June 2024. A self-reported questionnaire was distributed among 202 physiotherapists in the UAE who are members of the Emirates physiotherapy society via email. The questionnaire consisted of 17 questions that includes personal and occupational history. The statistically significant was set at a p-value less than 0.05 and 95% confidence interval. 69% of physiotherapists had a WRMDs in one or more area of the body most of the injuries have been occurred in the lower back (38.6%), followed by the neck and shoulders with an equal percentage (28.7%). The highest risk factors in causing the injury were performing repetitive tasks (28.2%) and maintaining a position for a prolonged period (26.2%). With regards to coping, 32% reported utilizing their professional expertise, 40% seek medical assistance to manage their injuries. Approximately 15% preferred to take rest and 13% to do exercise. Based on the findings of this study, physiotherapists in UAE have a high rate of WRMDs attributed to their profession. Survey respondents expressed the need for a change in work habits to reduce the risk of further injuries.

Keywords Musculoskeletal disorder, Physiotherapist, Injury

Work related musculoskeletal disorders (WRMDs) refer to any discomfort persistent pain, or disability in the joints, muscles, tendons and surrounding soft tissues. WRMDs are described among physiotherapists as musculoskeletal injuries that occur due to work related events[1]. These conditions are caused or aggravated by repeated movement, prolonged awkward or forced body postures and are typically attributed to work related events resulting in loss of work time, unconsciousness, work restrictions or change in working habits[2,3].

Healthcare is one of the largest industries that is located at high risk of musculoskeletal disorders. This is primarily due to their involvement in demanding physical work activities[3]. WRMDs if left untreated can potentially lead to permanent disability[4]. In fact, the rate of WRMDs among hospital workers is approximately twice as high as that in other service industries[5], making it a significant cause of absenteeism and reduced productivity according to Wideman, 2012[6]. While previous studies have mainly focused on back pain injuries,

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it's important to note that these injuries can also affect other anatomical areas such as neck, elbow, wrist, and hand[7,8].

Several studies have identified various etiological and risk factors for WRMDs including a history of previous injury, severity of injury, occupations that require maintaining awkward postures and movements over prolonged time interval, occupations involving repetitive and forceful tasks, and occupations with high activity levels[9]. Physiotherapy practice, in particular often involves a significant amount of lifting, bending, twisting and manual therapy which are performed repeatedly and for extended periods. Those activities vary from one working setting to another, but all can lead to frequent injuries[10].

WRMDs can be either acute or chronic and can result from a variety of different or combination of factors[11]. According to Oakman et al., 2014 risk factors can be divided into three categories: Factors associated with the workplace that can divided into physical (biomechanical), organizational factors and psychosocial risk factors, within person effects (psychological distress) and individual factors including (gender, age and body mass index-BMI)[12,13]. Previous studies showed that physiotherapist who work with high physical loads and psychosocial risks such as time constraints and poor job control are more likely to be exposed to WRMDs[14–16].

In other hand, some studies showed that WRMDs among physiotherapist may be linked to age and years of experience. According to Milhem et al., 2016, older physiotherapists had the lowest prevalence of WRMDs[10]. Whereas younger physiotherapists at a higher risk of developing WRMDs[17,18]. While other studies stated that most physiotherapist experiences symptoms before the age of 30, with most of these initial episodes occurring within 5 years after graduation[19]. WRMDs is more common among physiotherapist who handle more patient each day[17]. Another risk factor that was shown was insufficient physical activity and low physical fitness[18]. Alrowayeh et al., 2010, discovered a slightly greater percentage of WRMDs in individuals who were physically active, but they did not find a significant correlation between WRMDs prevalence and physical activity[18]. However, it was discovered by Landry et al. 2008., that general medical staff members with low back pain engaged in less physical activity, so the relationship between physiotherapists physical activity and WRMDs is poorly investigated[20].

Therapists may be at risk of developing both acute and chronic musculoskeletal pain because of their job duties. To understand the challenges that physiotherapists have while managing musculoskeletal disorders, it is important to understand the environment in which these professionals operate. According to a previous study it was found that physiotherapists often suffer from musculoskeletal pain throughout their lives with rates ranging from 55% to 91%[21].

Although physiotherapists have adequate knowledge of musculoskeletal injuries and prevention strategies, they remain highly vulnerable to developing WRMDs due to the repetitive nature of their tasks, prolonged periods spent in the same position, and the high volume of patients they treat in a single day[22]. This study hypothesized that there will be a high prevalence of WRMDs among physiotherapists in United Arab Emirates (UAE).

METHODS

This research was a descriptive cross-sectional study that started in March 2024 and ended in June 2024, utilizing an online self-reported questionnaire as the primary collection method. The questionnaire was distributed among a convenient sample of physiotherapists in the UAE. The questionnaire was distributed to physiotherapists (PTs) who are members of the Emirates physiotherapy society via email. Prior to participating, each therapist signed a written informed consent form. The University of Sharjah's Research Ethics Committee has ethically approved clearance of this study (REC-23-12-20-01-PG) before beginning the study procedures. The study was deemed to have adhered to all institutional and regulatory ethical standards and guidelines upon receiving approval. All participants were given detailed information about the study, including its goals, methods, risks, rewards, and their rights as research subjects. Before signing the consent form, they had enough time to read it carefully and ask any questions they had. Moreover, the study included physiotherapists who have experienced WRMDs within the past 2 years, injuries, male or female age between (21–50) and currently in direct contact with patients. participants were excluded from the study if Injuries not occurring within the specified 2-year recall period, injuries conducted outside the work setting and failure to provide a signed consent form. Furthermore, the outcome measures used in the study including the questionnaire is validated from a previous survey conducted in another study, the questionnaire used in this study to assess the prevalence, causes, and coping strategies related to work-related musculoskeletal disorders (WRMDs) among physiotherapists was adapted from previously validated tools. Holder et al. (1999) developed and employed a structured survey to investigate occupational musculoskeletal injuries among physical therapists and physical therapist assistants, establishing its content validity through expert review and its applicability across diverse clinical settings[7,23]. Building on this, it was documented that further refined the instrument within the context of occupational health and safety guidelines for physiotherapists, thereby reinforcing its construct validity and reliability[17].

Together, these studies provide strong evidence supporting the questionnaire's use as a valid and reliable measure for examining WRMDs in physiotherapy populations. The survey consists of 17 close-ended questions and is divided into two sections: personal and occupational. The personal section gathers demographic information such as gender, age, weight and height of the participants. The years of experience, the workplace, and the weekly amount of time spent with patients are the main topics of the vocational part. Participants in this section were asked about injuries happened at work, if the answer is yes more detailed questions need to be answered like which body part was affected, what was the setting when the injury happened, what type of injury was it, if it was officially reported and what procedure was done to treat the problem.

The questionnaire also inquiries about any modifications in working habits or coping strategies employed in response to the symptoms. This includes avoiding certain activities such as lifting, bending, or twisting, adjusting work schedules, decreasing manual therapy, taking additional rest or stopping work when experiencing symptoms and limiting the time spent with patients or the practice area of the therapists.

The sample method used were Convenient sampling collected by sending the survey to PTs members of the Emirates physiotherapy society who are practicing physiotherapy. A minimum of 200 surveys were distributed, which was equivalent to the number used in previous studies[22,24]. Considering the possibility of non - respondents' recruitment will be concluded after a period of the 3 weeks from the initial survey distribution date, or when at least 50% of te responses have been received. Therefore 202 individuals were included in the study.

The statistical analysis of Data was performed through IBM SPSS software version 22 (IBM Corp., Armonk, NY, USA). Descriptive statistics were presented as frequency, percentage, mean and standard deviations. Binomial logistic regression was performed to investigate the relation between the risk factors and the presence of work-related musculoskeletal pain in employed physiotherapists. A chi-square test was used to assess the association between gender different injury causes and body regions. The statistically significant was set at a *p*-value less than 0.05 and 95% confidence interval.

Results

Of 217 invited physiotherapists, 202 completed the questionnaire. Females and males were almost equal in number, with 51% females and 49% males. WMSDs were reported from 139 participants; 65 females and 74 males reported pain with no statistical significance between them ($p = 0.074$). Nearly half of the participants were aged between 31 and 40 years. Participants' mean BMI was 26.01 ± 5.2, the mean of reported working hours was 7.59 ± 2.01, and clinical experience was 9.33 ± 5.92. Half of the participants were general physiotherapists, more than half of them had + 7 years of experience, and they worked more than seven hours per day. Other participants' characteristics are shown in Table 1.

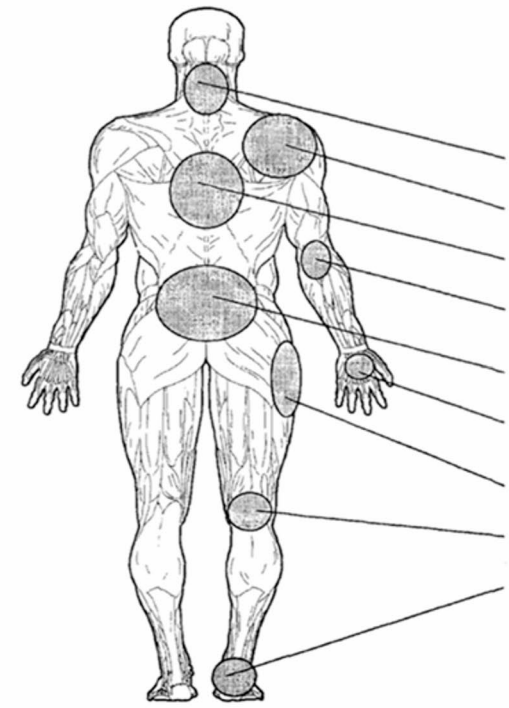
As shown in Fig. 1, irrespective to gender the most common regions of WMSDs were the lower back (38.6%), followed by the neck and shoulders with the same percentage (28.7%), wrist / hands (18.3%) and upper back (17.8%). Hip, Ankle/foot, and elbow were the least common regions of WMSD reporting with 4.5%, 5.9%, and 8.4% respectively. Most of males reported the lower back region (37.4%) however females as well had higher percentage than males (39.8%). The least common region in each gender was the hip with only 7 females and 2 male participants reporting it. After examining the association between gender and WMSDs in different body regions it was revealed that it was not significant except for the elbow ($p = 0.03$). Further details are presented in Table 2.

The most common mechanism of injury overall was performing repetitive tasks (28.2%) followed by maintaining a Position for a Prolonged Period (26.2%). Males reported higher percentage of six injury mechanisms than females with performing repetitive tasks been the highest in males (38.4%). The association between gender and different injury mechanisms was evaluated. Two mechanisms only found to be significant between gender which are: performing repetitive tasks ($p < 0.001$) and maintaining a position for a prolonged period ($p < 0.001$), as detailed in Table 3.

Binomial regression revealed that the participants with work experience of more than 7 years were more likely to have WMSD ($p = 0.01$). The three most common WMSD regions (neck, shoulder, and lower back) were investigated with the same risk factors (BMI, work experience, working hours, age, gender, clinical speciality, and injury mechanism) to assess their association. The Nagelkerke R2 model explained 22.8% of variations in neck region and correctly classified 71.3% of the cases. Out of the seven variables examined, clinical speciality

Variable	Frequency	Percentage (%)
Gender Female Male	 103 99	 51 49
Age (years) 21–30 31–40 41–50	 72 93 37	 35.6 46 18.3
BMI (kg/m^2) Underweight Normal Overweight Obese	 1 83 97 21	 0.5 41.1 48.0 10.4
Clinical speciality General Cardiopulmonary Orthopedics Neurology	 101 15 61 25	 50 7.4 30.2 12.4
Presence of WMSDs Yes No	 139 63	 68.8 31.2
Clinical experience Less than 7 years More than 7 years	 82 120	 40.6 59.4
Working hours per day Less than 7 h More than 7 h	 73 129	 36.1 63.9

Table 1. Participants demographics and work characteristics ($n = 202$). BMI; Body Mass Index, WMSDs; Work Related Musculoskeletal disorders.



Anatomical area	Total %	Females (%)	Males (%)
Neck	28.7%	33.0 %	24.2 %
Shoulders	28.7%	26.2%	31.3%
Upper back	17.8%	20.4%	15.2%
Elbows	8.4%	12.6%	4.0%
Lower back	38.6%	39.8%	37.4%
Wrist \ Hands	18.3%	21.4%	15.2%
Hips \ Thighs	4.5%	6.8%	2.0%
Knees	12.9%	14.6%	11.1%
Ankles \ Feet	5.9%	7.8%	4.0%

Fig. 1. Prevalence of WMSDs in body area.

Body region	Total *n*(%)	Females *n*(%)	Males *n*(%)	*p*-value
Neck	58(28.7)	34(33)	24(24.2)	0.17
Shoulder	58(28.7)	27(26.2)	31(31.3)	0.42
Elbow	17(8.4)	13(12.6)	4(4)	0.03
Wrist / hand	37(18.3)	22(21.4)	15(15.2)	0.25
Upper back (thoracic area)	36(17.8)	21(20.4)	15(15.2)	0.33
Lower back (lumbar area)	78(38.6)	41(39.8)	37(37.4)	0.54
Hip	9(4.5)	7(6.8)	2(2)	0.1
Knee	26(12.9)	15(14.6)	11(11.1)	0.46
Ankle / foot	12(5.9)	8(7.8)	4(4)	0.26

Table 2. Number of musculoskeletal symptoms in body regions among the 139 participants. *p*-value driven from chi square test.

Mechanism of injury	Total *n* (%)	Females *n* (%)	Males *n* (%)	*p*-value
Lifting	29(14.4)	10(9.7)	19(19.2)	0.06
Maintaining a position for a prolonged period	53(26.2)	17(16.5)	36(36.4)	< 0.001
Bending / twisting	30(14.9)	11(10.7)	19(19.2)	0.09
Performing repetitive tasks	57(28.2)	19(18.4)	38(38.4)	< 0.001
Transferring a patient	17(8.4)	5(4.9)	12(12.1)	0.06
Performing manual therapy techniques	35(17.3)	19(18.4)	16(16.2)	0.67
Reaching	7(3.5)	2(1.9)	5(5.1)	0.23
Walking	5(2.5)	4(3.9)	1(1)	0.19
Working in an awkward or cramped position	18(8.9)	8(7.8)	10(10.1)	0.56
p-value driven from chi square test				

Table 3. Different mechanisms of injury among 139 participants.

Variable		B	S.E.	Wald	df	Sig.	Exp(B)	95% CI	
								Lower	Upper
BMI		-0.09	0.05	2.89	1	0.09	0.91	0.83	1.01
Work experience (yrs)		0.06	0.05	1.74	1	0.19	1.06	0.97	1.17
Working hours		0.02	0.09	0.06	1	0.81	1.02	0.85	1.23
Age (yrs)	21–30			1.74	2	0.42			
	31–40	-0.22	0.83	0.07	1	0.79	0.8	0.16	4.13
	41–50	0.34	0.62	0.29	1	0.59	1.4	0.41	4.73
Gender (females)		0.18	0.39	0.21	1	0.64	1.2	0.56	2.54
Clinical Speciality	General			11.18	3	0.01			
	Cardiopulmonary	1.08	0.65	2.75	1	0.09	2.96	0.82	10.67
	Orthopedics	0.75	0.88	0.73	1	0.39	2.1	0.38	11.77
	Neurology	-0.41	0.71	0.32	1	0.57	0.67	0.17	2.69
Injury mechanism	Lifting	-0.52	0.62	0.71	1	0.41	0.59	0.18	2
	Patient transfer	2.58	1.18	4.75	1	0.03	13.23	1.29	134.83

Table 4. Binomial regression results for neck pain with study different variables. CI; Confidence Interval, BMI; Body Mass Index, B; beta coefficient, SE; standard error, dg; degree of freedom, sig; significant.

Variable		B	S.E.	Wald	df	Sig.	Exp(B)	95% CI	
								Lower	Upper
BMI		-0.06	0.05	1.57	1	0.21	0.94	0.85	1.04
Work experience (yrs)		-0.13	0.05	7.16	1	0.01	0.88	0.77	0.96
Working hours		-0.09	0.09	1.15	1	0.28	0.91	0.77	1.08
Age (yrs)	21–30			10.85	2	0.004			
	31–40	-2.72	0.83	10.81	1	0.001	0.07	0.01	0.33
	41–50	-1.64	0.59	7.69	1	0.006	0.19	0.06	0.62
Gender (females)		-0.23	0.34	0.36	1	0.55	0.79	0.37	1.68
Clinical Speciality	General			3.78	3	0.29			
	Cardiopulmonary	-0.5	0.61	0.68	1	0.41	0.61	0.19	1.98
	Orthopedics	0.8	0.82	0.96	1	0.33	2.23	0.45	11.1
	Neurology	0.04	0.62	0.004	1	0.95	1.04	0.31	3.54
Injury mechanism	Lifting	-0.05	0.61	0.01	1	0.93	0.95	0.29	3.13
	Patient transfer	0.18	0.88	0.04	1	0.84	1.2	0.21	6.69

Table 5. Binomial regression results for shoulder pain with study different variables. CI; Confidence Interval, BMI; Body Mass Index, B; beta coefficient, SE; standard error, dg; degree of freedom, sig; significant

and injury mechanism were statistically significant. The likelihood of neck pain increases with patient transfer, as detailed in Table 4.

In the shoulder region, the model Nagelkerke R2 explained 18.5% of variations in shoulder region and correctly classified 76.2% of the cases. Work experience and age were statistically significant with shoulder pain where increase of work experience and younger age have reduced in shoulder pain, Table 5.

In the lower back region, The Nagelkerke R2 model explained 14% of variations and correctly classified 61.4% of the cases. Only lifting was statically significant with lower back region pain where an increase of lifting is more likely to increase the pain at the low back, as detailed in Table 6.

Discussion

The study demonstrated the prevalence of WRMDs within last 2 years among PTs in UAE. The primary objective of the current study was to determine the severity and expansion of WRMDs among physiotherapists in the UAE in the last 2 years. Also, to determine the number of physiotherapists who complain of pain in nine different body regions and to identify the physical work task characteristics within the field of physiotherapy. The findings from research on WRMDs among physiotherapists have typically shown similarities, although certain studies have shown differences based on country. These disparities are linked to each nation's degree of development and the standing of the physiotherapy profession., as well as psychosocial and epidemiological factors[17,25].

For this research, demographic details and WRMD data were gathered from 202 physiotherapists located UAE. We then examined the incidence of injuries, identified risk factors, categorized types and locations of injuries, and studied the methods used for managing injuries post-occurrence. A self-administered questionnaire was requested to be filled out by the participants, if they had experienced an injury within the last two years of

Variable		B	S.E.	Wald	df	Sig.	Exp(B)	95% CI	
								Lower	Upper
BMI		-0.04	0.04	0.96	1	0.33	0.96	0.88	1.04
Work experience (yrs)		-0.06	0.04	2.16	1	0.14	0.94	0.86	1.02
Working hours		0.17	0.08	3.81	1	0.05	1.18	0.99	1.4
Age (yrs)	21–30			4.99	2	0.08			
	31–40	-0.94	0.72	1.7	1	0.19	0.39	0.09	1.6
	41–50	0.04	0.53	0.01	1	0.94	1.04	0.36	2.95
Gender (females)		-0.19	0.35	0.3	1	0.58	0.83	0.41	1.64
Clinical Speciality	General			3.63	3	0.31			
	Cardiopulmonary	0.11	0.55	0.04	1	0.85	1.11	0.38	3.29
	Orthopedics	0.26	0.77	0.11	1	0.74	1.29	0.28	5.89
	Neurology	-0.56	0.59	1	1	0.32	0.55	0.17	1.77
Injury mechanism	Lifting	1.27	0.59	4.59	1	0.032	3.58	1.11	11.49
	Patient transfer	-0.23	0.72	0.1	1	0.75	0.79	0.19	3.27

Table 6. Binomial regression results for lower back pain with study different variables. CI; Confidence Interval, BMI; Body Mass Index, B; beta coefficient, SE; standard error, dg; degree of freedom, sig; significant

their practice. Survey responses indicated that 69% of the participants had encountered WRMDs. the study had a nearly equal distribution of males and females. This is important as it allows for more comprehensive understanding of WRMDs across genders within the physiotherapy profession. Findings of this study were like those previous studies concerning the demographic characteristics of participants, including gender, age and clinical experience. the demographic distribution by gender in this study align with those of comparable studies[10,13,17,19,24,25]. However, the findings from studies conducted in Kuwait[18] and Nigeria[22] revealed a greater proportion of males in their demographic distribution, contrasting with the results of this study. WRMDs were reported by 139 participants, representing a significant portion of the sample. Interestingly, there was no statistical significance found between males and females in reporting WMSD, despite there being slightly more females in the sample. This suggests that WMSD might affect physiotherapists regardless of gender, although further investigation may be needed to understand any underlying factors contributing to this.

It's notable that nearly about 46% of the participants were adults aged between 31 and 40 years, which could indicate a potential age-related trend in the prevalence of WMSD. Group of 20–40 years, reliably supported by other scholars such as the studies conducted Malaysia[13], and Turkey[24]. Additionally, the majority of participants had over 7 years of clinical experience, which might suggest that experience doesn't necessarily protect against WMSD, because injuries tended to occur within the 5 years of professional experience, aligning with the previous study's findings that younger physiotherapists are more susceptible to such injuries as well. This might be linked with a lack of professional experience, as well as lower levels of knowledge and skill typical in the early stages of this career[22,24].

The mean BMI of the participants fall within the overweight range according to WHO classifications. This could be a factor contributing to WMSD, as higher BMI has been linked to musculoskeletal issues. Whereas an intriguing discovery from the study was that the prevalence of WRMDs is higher among individuals with normal body weight compared to those who are obese[22,24].

The most commonly WRMDs affected body areas were the lower back followed by the neck and shoulders with the same percentage. While the lower back was the most reported region for both males and females, it's interesting to note that a slightly higher percentage of females reported WMSDs in this area compared to males. Cromie et al., 2000 found that the prevalence of low back pain at work was 48% in research that include 824 individuals or 25% of all physiotherapists working in Australia[17]. Other literature strongly supports these findings, showing that WRMDs are very common in the low back area across different countries hence, the widespread nature of WRMDs globally that ranged from 26% up to 69.8%, particularly in the low back region[2,8,10,13,18,19,22,24]. This study results that was within the range of 38.6% occurrence of low-back pin, among all subgroups of physiotherapists. Moreover, low back pain was the most common WRMDs when we classified them according to their practice environment. According to research on WRMDs among medical professionals' lower back was the most commonly affected, followed by neck and upper extremities[25,26]. Nevertheless, research conducted in Egypt, revealed a higher occurrence of 25% in WRMDs affecting the neck among physiotherapists. This study's findings indicated that neck discomfort ranked as the second most prevalent WRMD, with a prevalence of 28.7%[2]. However, in line with Milhem t al., 2016 and Holder et al., 1999 this review identified that a lifetime incidence of 55–91% and a 12-month prevalence of 40-91.3% are estimated for PTs with WMSD. After the neck, upper back, and shoulders, the lowest back was most impacted, with 22–73.1% and 26–79.6% estimations. Employees who lifted heavy objects, sat for long periods, treated several patients, walked a lot, or worked while injured had increased low back pain (LBP). Female, younger, and rehabilitation-focused PTs have increased low back pain. Physical therapists with low back pain may take medication, change their work and home habits, employ assistive technologies, or change careers. Preventing occupational injuries requires more than proper movement. To reduce WMSDs without compromising therapy efficacy, physical therapists should use mechanical support during patient transfers and explore other methods[10,23].

The heightened risk linked to lower back issues could stem from extended periods of standing, frequent twisting or bending, and engaging in activities that require maintaining the same position. This assertion aligns with academic studies referencing the factors contributing to WRMDs and their correlation with various occupational factors[13,22,24]. In accordance with existing literature, the occupational tasks most frequently associated with injuries in healthcare professionals include lifting heavy objects and patients, transferring patients, sustaining prolonged postures, performing manual therapy techniques, reacting to sudden patient movements, and engaging in repetitive motions[23,27–30].

Milhem et al., 2016 pinpointed the primary factors contributing to WRMDs among physiotherapists as prolonged static postures and persisting in tasks while fatigued[10]. Whereas, other studies stressed the importance of lifting and bending down with sudden maximal exertion, while West underscored the significance of prolonged static postures, manual therapy techniques, repetitive movements, and heightened workloads[25,31]. The primary causes of WRMDs in our study were performing repetitive tasks and maintaining a position for a prolonged period where the two most common mechanisms of injury overall was supported by similar studies conducted in the UK[19], Malaysia[13] and Turkey[24]. This suggests that tasks requiring repetitive movements or prolonged static positions are significant contributors to injuries. The study also noted gender differences in the prevalence of certain injury mechanisms. Males reported a higher percentage of six injury mechanisms compared to females, with performing repetitive tasks being the highest among males. The study likely delved deeper into the reasons behind these gender differences and the implications for injury prevention and management. For instance, it might explore factors such as differences in occupational roles, biomechanical differences, or behavioural differences between genders that could contribute to varying injury patterns.

During their undergraduate studies, physiotherapists in the UAE receive instruction in ergonomic principles. However, in a variety of work environments, the tools used, such as treatment tables and chairs, may lack ergonomic design. As a result, physiotherapists may find it challenging to adhere to ergonomic principles while performing their duties. It was investigated whether PTs use the expertise to avoid WRMDs[17]. The findings revealed that this was indeed the case for most physiotherapists surveyed. In our own survey, among physiotherapists who had experienced WRMDs, 32% reported utilizing their professional expertise, 40% seek medical assistance to manage their injuries, while 15% relied on rest to manage their injuries and 13% preferred to do exercises. According to previous studies, physiotherapists who have suffered from WRMDs typically change their professional philosophies to avoid causing more injuries.

According to reports, physiotherapists most often use body mechanic correction and regular posture changes as strategies to reduce WRMDs. Survey respondents mentioned that They became more careful about adjusting their body mechanics, adopted frequent position changes and take more rest, breaks during the working day after a WRMDs. Holder et al., 1999 found that in order to prevent future WRMDs, 81% of assistant physiotherapists and 79% of physiotherapists who had experienced workplace injuries changed their professional attitudes[23]. In addition, Le et al., 2024 found that Of 267 respondents, 204 had WMSDs in the past year, with 58.4% affecting the neck and 57.3% the lower back. Physical therapists aged 22–29 and workers with fewer than four years of training and seven years of work experience had WMSDs 2–3 times greater than the general population. Even after controlling for education, experience, and age, physical therapists who conducted manual methods and exercises, lifted and carried patients, and maintained uncomfortable postures had five to seven times greater lower back and neck WMSDs. Environmental and psychological factors like stress, treatment table count, electrotherapy room size, PT modalities, and more correlated with WMSDs. Over 50% of physical therapists polled used less difficult treatments and positions to relieve their symptoms[8]. Similarly, Cromie et al.,2000, inferred that 17.7% of physiotherapists shifted their specialty because of WRMDs[17]. However, in this study 75% o survey respondents with WRMDs did not change their field of practice after the injury, 81% dd not restrict their time spent interacting with patients, and 76% prcent said they would not consider changing their department or field of practice because of their WRMD.

Certain professions exhibit notably high prevalence rates of WRMDs, prompting intensified research efforts in recent years. These injuries have serious consequences for society, workers, businesses, and the insurance industry. These consequences include reduced productivity, long-term incapacity, labor force reduction, delayed return to work, and psychological effects on workers. Therefore, there is a great deal of potential for societal and economic advantages from reducing and avoiding WRMDs. Therefore, funding research to help physiotherapists avoid these injuries is essential. The unexpected higher prevalence of work-related musculoskeletal disorder (WRMD) among normal weight people compared to obese people may be due to factors other than weight. Jobs with repetitive motions or uncomfortable postures may over-represent normal weight people. Reporting bias, muscle strength relative to body weight, and the "healthy worker effect" may contribute. This emphasizes the necessity of ergonomic assessments and targeted WRMDs prevention efforts based on occupational demands and individual characteristics rather than weight alone.

An almost equal number of men and women (69% of the total) suffered from WRMDs, or work-related musculoskeletal illnesses. Research in Kuwait and Nigeria, on the other hand, showed that men made up a larger percentage of those populations. These variances could be attributed to gender-specific behavioral norms in various cultural and healthcare contexts, changes in biomechanics, or differences in vocational roles.

The research shows that physiotherapy practices in the UAE would benefit from making workplace ergonomics a top priority and using measures to prevent injuries. Targeted therapies are necessary due to the high prevalence of WRMDs among physiotherapists, particularly in the lower back, neck, and shoulders. As part of these interventions, the layout of the work area should be optimized, the height of the equipment should be adjusted, and the correct body mechanics should be observed when handling patients. Physiotherapists can be better protected, have longer careers, and improve clinical efficiency by encouraging self-care habits including stress management and mindfulness as well as regular strengthening and stretching exercises and the use of assistive gadgets.

This study acknowledges several limitations that pave the way for future research directions. While the study provides valuable insights into the prevalence of WMSD among physiotherapists, it's essential to consider any limitations. The physiotherapists were not asked how active they were. This omission is significant as engagement in sports and recreational activities could potentially influence the frequency of WRMDs. Our study lacked an examination of various practice areas and techniques utilized by physiotherapists and their correlation with WRMDs. Additionally, participants were asked to recollect WRMDs that had occurred during the last two years, which could have introduced recall bias and resulted in inaccurate reporting. Researchers might use prospective study designs that monitor the occurrence of WRMDs in real-time to reduce the impact of this bias in future investigations. To further enhance self-reported data and lessen the burden of memory, objective assessments of musculoskeletal health, like physical exams or wearable sensors to track movement and posture, might be included. To further enhance the precision of data collection, shorter recall spans or the frequent use of diaries or electronic logs to document symptoms and job activities should also be considered. Lastly, investigation should explore enlarging the sample size and enhancing the statistical analysis to establish connections among various task characteristics and the likelihood of bodily injury. Moreover, employing an alternative sampling method could be considered. Future research endeavours might also benefit from establishing a baseline for diverse work environments of physiotherapists and comparing their activity levels to their caseloads, patient volumes, and work contexts. Addressing these limitations could offer a more comprehensive understanding of the factors contributing to WRMDs among physiotherapists.

There is still a significant requirement for additional investigation and research in this area, particularly within the UAE given the remarkably high overall occurrence of WRMDs uncovered in this study. It's crucial to meticulously assess and consider the well-being of all physiotherapists, and innovative strategies must be devised to address this pressing concern.

Ergonomic guidance should be implemented across all healthcare facilities alongside occupational health protocols. It's crucial to regularly monitor study participants over a six-month period to identify any new developments in their condition.

Conclusions

WRMDs are prevalent among physiotherapists, and they pose major threats to their occupational health and well-being. The lower back, neck, and shoulders are particularly vulnerable, especially during tasks involving repetitive movements or prolonged postures. To mitigate these risks, it is essential that physiotherapists adopt and consistently implement preventive strategies. Central to these is the integration of ergonomic interventions, such as optimizing workspace design, adjusting treatment tables and equipment to appropriate heights, and ensuring proper body mechanics during patient handling. Complementary strategies, including regular stretching and strengthening exercises, the use of assistive devices, adherence to proper lifting techniques, and self-care practices like mindfulness and stress management, further strengthen protection against WRMDs. By prioritizing ergonomics alongside these holistic preventive measures, physiotherapists can sustain their health, enhance clinical efficiency, and promote long-term career longevity.

Data availability

The data involved are available from the corresponding author upon request.

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Author contributions

HHA, SAMZ, AA, GN, ARA, SHE, and WKA have contributed to the concept and design of the study. HHA and WKA have contributed to data curation, investigation, and methodology of the study. AFA, AA, GN, SHE, and WKA have contributed to resources, software, validation, and visualization of the study. HHA, SAMZ, and WKA have contributed to statistical analysis of the study. HHA, SAMZ, AA, GN, ARA, SHE, and WKA have contributed to the study literature. HHA, SHE, and WKA developed the manuscript, and all authors agreed to its final submission. All authors guarantee the integrity of the content and the study. All authors read and accepted the final version of the manuscript.

Declarations

Competing interests

The authors declare no competing interests.

Additional information

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