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Work Related Musculoskeletal Disorders among Physiotherapists in South-East Nigeria: Prevalence and Severity

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Abstract

It has been opined that the cultural values of physical therapists may make it difficult for practitioners to avoid the risks of work-related musculoskeletal disorders (WMDs) during their work. Since these cultural values are generic and unique to physiotherapy, South-East physiotherapists are expected to be part of this picture despite the difference in contextual practice settings. The study was done to examine the prevalence and severity of work-related musculoskeletal disorders among physiotherapists practicing in southeast Nigeria. This study used a cross-sectional design and conveniently sampled 32 physiotherapists in South East, Nigeria with age range 20-40 years (65.6%), 53.1% female. A self-administered questionnaire and Nordic questionnaire were the outcome measures utilized in this study. Data were analyzed using SPSS (v25). Descriptive statistics and Spearmann's correlation analyses were employed. Findings from this study revealed that the one-year prevalence of work-related musculoskeletal disorder was 78.1% with the most commonly affected part of the body being the low back (28.1%). Most of the participants had a not severe case of WMD (43.8%) with bending and twisting the most common risk factors of WMDs.

Significant association was found between number of years of clinical practice and WMDs (r = .165, p value = 0.033) with no significant association found between age and WMDs (r = 0.17, p = 0.074).The one-year prevalence of WMDs among physiotherapists practicing in South East is high, hence the need to emphasize the role of ergonomics; proper techniques of carrying, lifting, manual therapy among others during the training of new physiotherapists, so that they can work efficiently and effectively.

Keywords: Work-related musculoskeletal disorders, physiotherapists, prevalence, severity, ergonomics, Nigeria.

Introduction

Musculoskeletal disorders (MSDs) are disorders of the muscles, nerves, tendons, joints, cartilage, and spinal discs. Musculoskeletal disorders can be extremely painful and debilitating. They identify a large group of conditions that result from traumatizing the body in either a minute or major way over a period. Their incidence and resulting impact on health and well-being increase with age. Work-related musculoskeletal disorders (WMDs) refer to musculoskeletal injuries induced or aggravated by work or the environment where the work is carried out [1-2]. According to the World Confederation for Physical Therapy (WCPT) physiotherapy also known as physical therapy is concerned with identifying and maximizing quality of life and movement potential within the spheres of promotion, prevention, treatment/intervention, habilitation and rehabilitation. A physiotherapist is someone who has gone through a rigorous academic program in physiotherapy in a university or equivalent institution in Nigeria or abroad after which he is conferred with a diploma, bachelor's degree (BPT, or BMR), master of physical therapy degree (MPT) or a doctor of physical therapy (DPT). Physiotherapists are reported to be at high risk of WMSDs globally, with the lower back as the major body part affected, followed by neck and upper back region, shoulder, wrist, knee, thumb and fingers, hip, elbow and legs and toes [3]. There are multiple risk factors that can develop work-related pain and disorders. It may include numerous risk factors such as heavy physical load or psychosocial stress, smoking, a higher body mass index (BMI), the presence of co-morbidities (pain, arthritis, and rheumatism), excessive repetition, awkward postures, heavy lifting, vibration, poor lighting, or cold working environments, fast-paced work and prolonged sitting or standing in the same position [4-5].

Physiotherapists are primary health care professionals who diagnose and treat individuals of all ages, from new-borns to the very oldest, who have medical problems or other health related conditions, illness, or injuries that limit their abilities to move and perform the functional activities as well as they would like in their daily lives [6]. WMDs can occur because of performing manual therapy, lifting, and transferring dependent patients, high rate of WMDs affecting the thumbs and fingers as a result of performing manual therapy, working in awkward postures, repetitive tasks, and stooping. WMDs among physiotherapists may be age-related and associated with professional years of experience. Bork indicated that physiotherapists aged more than 50 years had the lowest prevalence of WRMDs, while Scholey and Hair (2021) reported that most physiotherapists first developed symptoms before the age of 30 years and that many of these initial episodes occurred within five years after graduation [7].

It has been opined that the cultural values of physical therapists may make it difficult for practitioners to avoid the risks of WMDS during their work [8]. Since these cultural values are generic and unique to physiotherapy, South-East physiotherapists are expected to be part of this picture despite the difference in contextual practice settings. However, little seems to be known about the occupational hazards of physiotherapy practice in South-East, despite the wealth of information on WMDs among physiotherapists around the world. It is speculated that investigating the prevalence and work factors of work-related musculoskeletal disorders among physiotherapists in an undeveloped health system like Nigeria may present a different picture from what obtains in the advanced countries of the world. Thus, this study seeks to investigate the prevalence and severity of work-related

musculoskeletal disorders in physiotherapy in the southeast of Nigeria.

Research Methodology

Research Design

The design for this study was a cross sectional research design which aimed to determine the prevalence and severity of work-related musculoskeletal disorders among physiotherapists in South East Nigeria. This study followed the reporting guideline of the STROBE statement for cross sectional studies.

Population of Study

The population of this research included all physiotherapists practising within southeast Nigeria, specifically; the investigator will target 260 physiotherapists across Enugu state and Ebonyi State.

Inclusion Criteria

The study participants were selected if they were;

- Licensed physiotherapists with at least 2 years work experience
- Practicing physiotherapists currently working in South East, Nigeria.

Exclusion Criteria

The study participants were excluded if the participants were;

- Undergraduate students
- Unlicensed physiotherapists or with less than 2 years work experience
- Licensed physiotherapists currently working outside of South East.

Sampling Technique

A purposive sampling method was used to recruit only fully licensed physiotherapists, whether full or part time, working in both the private and government sectors in southeast Nigeria.

Sample Size

Using the sample size calculation for a cross-sectional study [9].

See the sample size calculation below;

$$n = \frac{Z_{1-\&/2}^2 Pq}{d^2}$$

$Z_{1-\&/2}$ = is standard normal variate (at 5% type 1 error, 1.96 was used).

P= 0.78
q= 1-p
d= 0.05

$$\frac{1.96^2 * 0.78 * 0.22}{0.05^2}$$

= 260

Procedure for Data Collection

This study would be carried out in hospitals in Enugu and Ebonyi (UNTH, ESUTH Parklane, and EBSUTH). Participants will participate either online or physically. Physically, participants would be informed of the benefits of the study, their consents gotten and the questionnaires shared out to them. For the online participants, the questionnaires would be sent together with the benefits of the study which they will fill after going through the benefits and giving their consent.

Analysis of Data

Data will be analysed using IBM SPSS (v25). Level of significance will be set at 0.05. The Descriptive analysis will be presented as frequency/percentages (for non-continuous variables). Spearmann's correlation analysis (non-parametric variables) was used to determine the association between age and number of years of clinical practice with work related musculoskeletal disorders (WMDs).

Results

Table 1: Summary of the Demographic Characteristics of the Participants

Variable	Categories	F (%)	M (SD)	Range
Gender	Male	15(46.9)		
	Female	17(53.1)		
Age	20-40 years	21(65.6)		
	41-60 years	10(31.3)		
	Above 60 years	1(3.1)		
Height			1.67(0.08)	1.54-1.90
Weight			72.73(12.11)	50-95
Profession (Major)	Clinical physiotherapist	26(81.3)		
	Academic physiotherapist	6(18.8)		
Area of specialty	Orthopaedics and sports physiotherapy	10(31.3)		
	Paediatrics physiotherapy	2(6.3)		
	Neurophysiotherapy	12(37.5)		
	Cardiopulmonary and palliative care	1(3.1)		
	Women's health physiotherapy	5(15.6)		
	Geriatrics physiotherapy	2(6.3)		

A total of 32 participants took part in this study among which 53.1% were females. Most of the participants were of the age range 20 - 40 years (65.6%). The participants height mean (SD) score was 1.67 (0.08) ranging from 1.54 -1.90 while the participants' weight mean (SD) score was 72.73 (12.11) which ranged from 50 – 95. Most of the participants were clinical physiotherapists (81.3%) with a majority of the participants specializing as neurophysiotherapists (37.5%).

Table 2: Prevalence of work-related musculoskeletal disorders (WMDs) among physiotherapists in southeast Nigeria and body areas that suffer more

Variable	Category	Frequency	Percentage
1 year Prevalence of work related musculoskeletal disorder	Suffered	25	78.1
	Not suffered	7	21.9
Body Areas affected	Shoulder and neck	1	3.1
	Shoulder and lumbar region (lower back)	3	9.4
	Shoulder, wrist and lower back	3	9.4
	Shoulder, dorsal part and knee	1	3.1
	Neck, shoulder, lower back and hip/thigh	1	3.1
	Shoulder	4	12.5
	Lumbar region (lower back)	9	28.1
	One or both knees	1	3.1
	One or both ankles/feet	2	6.3
	None	7	21.9

Prevalence of work-related musculoskeletal disorders (WMDs) among physiotherapists in southeast Nigeria and body areas that suffer more Results showed that the 1 year prevalence of WRMD was 78.1%. One-year prevalence of WRMD was highest for the lower back (28.1%) and shoulder (12.5%).

Table 3: The relationship between work related musculoskeletal disorders and the age of physiotherapists

Variable	Category	Prevalence of WMDs in one year	
		Suffered	Not suffered
Age	20-40 years	16	5
	41-60 years	8	2
	Above 60 years	1	0

Spearmann's correlation coefficient (rho) = 0.17, p value = 0.074

The relationship between work related musculoskeletal disorder and the age of physiotherapists. The result showed that there is no significant relationship between work related musculoskeletal disorder and the age of physiotherapists with statistical values (r = .17, p value = 0.074).

Table 4: Severity of work-related musculoskeletal disorders on physiotherapists in Southeast, Nigeria

Variable	Category	Frequency	Percentage
Severity of WMDs	Not severe	14	43.8
	Moderately severe	8	25.0
	Very severe	3	9.4
	None	7	21.9

Severity of work-related musculoskeletal disorders on physiotherapists in Southeast, Nigeria. Results showed that most of the participants had a not severe case of WMD (43.8%) while another 25.0% had a moderately severe WMD and a further 9.4% presented with very severe WMDs.

Table 5: Association between work related musculoskeletal injury and number of years of clinical practice

Variable	Category	Prevalence of WMDs in one year	
		Suffered	Not suffered
Number of years of clinical practice	2	4	1
	3	5	1
	4	2	0
	6	1	0
	8	0	1
	9	0	1
	10	1	0
	12	2	2
	13	4	0
	14	2	0
	15	1	0
	16	1	0
	17	0	1
	32	1	0
	37	1	0

Spearmann's correlation coefficient (rho) = 0.165, p value = 0.033

The result showed that there is a significant association between work related musculoskeletal disorder and number of years of clinical practice with statistical values (r = .165, p value = 0.033).

A cross tabulation of the variables showed that those with 3 years of working experience had the highest number of participants that have suffered from WMDs in the last one year (5).

Table 6: Common risk factors of Works related musculoskeletal disorder (WMDs)

Variable	Category	Frequency	Percentage
Risk factors of WMDs	Using modalities	1	3.1
	Cannot remember	3	9.4
	Bending/twisting	7	21.9
	Lifting/transferring	3	9.4
	Performing manual/exercise therapy techniques on patients	5	15.6
	Maintaining one position for a long period of time	2	6.3
	Working in an uncomfortable or cramped position	2	6.3
	Performing repetitive tasks	1	3.1
	Response to sudden movement of patients	1	3.1

Results showed that the most common risk factor for WMDs is bending/twisting (21.9%) followed by Performing manual/exercise therapy techniques on patients (15.6%). The least common risk factors were using modalities, repetitive tasks and response to sudden movement of patients (1% each).

Discussion

The present study provides robust insight into the epidemiology, distribution, and determinants of work-related musculoskeletal disorders (WRMSDs) among physiotherapists in South-East Nigeria. The findings reveal a high one-year prevalence rate of 78.1%, reinforcing the occupational vulnerability of physiotherapists to musculoskeletal strain. This prevalence aligns with global reports indicating rates between 60% and 90%, thereby situating the current findings within established international trends while underscoring the persistence of the problem in low-resource settings [10].The demographic profile of participants indicates a relatively young and active workforce, with the majority (65.6%) aged between 20–40 years and predominantly engaged in clinical practice (81.3%). This is a critical observation, as early-career physiotherapists are often exposed to intensive workloads, high patient turnover, and limited ergonomic adaptation skills. Despite their younger age, the high burden of WRMSDs suggests that occupational exposure rather than age-related degeneration is the principal driver of musculoskeletal complaints in this cohort [11].

Anatomically, the lumbar region (28.1%) emerged as the most affected site, followed by the shoulder (12.5%), with multiple-site involvement also reported. This pattern is biomechanically plausible, given that physiotherapy practice frequently involves patient lifting, transfers, and sustained trunk flexion. The prominence of lower back involvement corroborates earlier studies that identify the lumbar spine as the most vulnerable region due to cumulative mechanical loading and poor postural ergonomics during manual therapy. Shoulder involvement further reflects repetitive upper limb activity and forceful exertions inherent in therapeutic interventions [12].Severity analysis demonstrated that while a substantial proportion of respondents reported non-severe symptoms (43.8%), a notable percentage experienced moderate (25.0%) to very severe (9.4%) conditions. This gradient of severity is clinically significant, as even mild symptoms may progress to chronic disability if left unaddressed. The presence of severe cases highlights the potential for WRMSDs to impair functional capacity,

reduce productivity, and increase absenteeism among physiotherapists [13].

Interestingly, the study found no statistically significant association between age and WRMSDs (rho = 0.17, p = 0.074), suggesting that musculoskeletal risk is relatively uniform across age groups within the profession. This finding diverges from some literature that associates increasing age with higher WRMSD risk, but it may reflect the overriding influence of occupational exposure in this population [14-15].Conversely, a statistically significant association was observed between WRMSDs and years of clinical practice (rho = 0.165, p = 0.033). Although the correlation is weak, it indicates that cumulative exposure to occupational stressors contributes to the development of musculoskeletal disorders over time. Notably, individuals with fewer years of experience (e.g., 3 years) reported a higher frequency of WRMSDs, suggesting that inadequate training in ergonomics and improper technique during early professional years may predispose individuals to injury [16].The analysis of risk factors further strengthens the mechanistic understanding of WRMSDs in this context. Bending and twisting (21.9%) emerged as the most prominent risk factor, followed by manual therapy techniques (15.6%) and patient handling activities such as lifting and transferring (9.4%). These findings are consistent with established ergonomic literature, which identifies awkward postures, repetitive strain, and forceful exertions as primary contributors to musculoskeletal injury. The relatively low reporting of factors such as repetitive tasks and use of modalities may reflect under-recognition or variability in clinical practice patterns [17].

Conclusion

This study demonstrates that work-related musculoskeletal disorders (WRMSDs) constitute a substantial occupational health burden among physiotherapists in South-East Nigeria, with a notably high one-year prevalence of 78.1%. The predominance of lower back and shoulder involvement reflects the biomechanical demands of physiotherapy practice, particularly patient handling, manual therapy, and sustained non-neutral postures. Although many cases were classified as non-severe, the presence of moderate to very severe symptoms in a considerable proportion of participants indicates a clinically meaningful impact on functional capacity, productivity, and overall quality of professional practice. The absence of a significant association between age and WRMSDs suggests that risk is primarily driven by occupational exposure rather than biological aging. In contrast, the significant relationship with years of clinical practice highlights the cumulative effect of repeated biomechanical stress and potential gaps in early-career ergonomic training. The identification of key modifiable risk factors—especially bending/twisting, manual therapy techniques, and patient transfer activities—provides a clear basis for targeted preventive interventions. Without systematic intervention, WRMSDs may contribute to long-term disability, reduced workforce efficiency, and increased healthcare system strain.

References

1. Greggi, C., Visconti, V. V., Albanese, M., Gasperini, B., Chiavoghilefu, A., Prezioso, C., Persechino, B., Iavicoli, S., Gasbarra, E., Iundusi, R., & Tarantino, U. (2024). Work-Related Musculoskeletal Disorders: A Systematic Review and Meta-Analysis. *Journal of clinical medicine*, *13*(13), 3964. https://doi.org/10.3390/jcm13133964
2. Malik, K. M., Beckerly, R., & Imani, F. (2018). Musculoskeletal Disorders a Universal Source of Pain and Disability Misunderstood and Mismanaged: A Critical Analysis Based on the U.S. Model of Care. *Anesthesiology and pain medicine*, *8*(6), e85532. https://doi.org/10.5812/aapm.85532
3. Corey, J. J., Shirazipour, C. H., Fricke, M., & Evans, B. (2023). Physiotherapists' role in physical activity promotion: Qualitative reflections of patients and providers. *Physiotherapy theory and practice*, *39*(4), 814–826. https://doi.org/10.1080/09593985.2022.2031361

4. da Costa, B. R., & Vieira, E. R. (2010). Risk factors for work-related musculoskeletal disorders: A systematic review of recent longitudinal studies. *American journal of industrial medicine*, *53*(3), 285–323. https://doi.org/10.1002/ajim.20750
5. van den Berge, M., van der Beek, A. J., Türkeli, R., van Kalken, M., &Hulsegge, G. (2021). Work-related physical and psychosocial risk factors cluster with obesity, smoking and physical inactivity. *International archives of occupational and environmental health*, *94*(4), 741–750. https://doi.org/10.1007/s00420-020-01627-1
6. Champoux, M., Poirier, A., &Hudon, C. (2025). Roles of physiotherapists in primary care teams: a scoping review .*BMJ open*, *15*(2), e092276. https://doi.org/10.1136/bmjopen-2024-092276
7. Alshuweihi, H. H., Zadeh, S. A. M., Al-Sharman, A., Nambi, G., Azab, A. R., Elsayed, S. H., Abdelbaset, W. K., &Abdelbasset, W. K. (2025). Prevalence and risk factors associated with work-related musculoskeletal disorders among physiotherapists in United Arab Emirates. *Scientific reports*, *15*(1), 38878. https://doi.org/10.1038/s41598-025-22619-6
8. Yoshikawa, K., Brady, B., Perry, M. A., & Devan, H. (2020). Sociocultural factors influencing physiotherapy management in culturally and linguistically diverse people with persistent pain: a scoping review. *Physiotherapy*, *107*, 292–305. https://doi.org/10.1016/j.physio.2019.08.002
9. Charan, J. and Biswas, T. (2013) 'Review Article How to Calculate Sample Size for Different Study Designs in Medical Research ?', 35(2). Available at: https://doi.org/10.4103/0253-7176.116232.
10. Abaraogu, U. O., Ezema, C. I., & Nwosu, C. K. (2017). Job stress dimension and work-related musculoskeletal disorders among southeast Nigerian physiotherapists. *International journal of occupational safety and ergonomics : JOSE*, *23*(3), 404–409. https://doi.org/10.1080/10803548.2016.1219476
11. Schofield, D. J., & Fletcher, S. L. (2007). The physiotherapy workforce is ageing, becoming more masculinised, and is working longer hours: a demographic study. *The Australian journal of physiotherapy*, *53*(2), 121–126. https://doi.org/10.1016/s0004-9514(07)70045-4
12. Lamprecht, A., &Padayachy, K. (2019). The epidemiology of work-related musculoskeletal injuries among chiropractors in the eThekwini municipality. *Chiropractic & manual therapies*, *27*, 18. https://doi.org/10.1186/s12998-019-0238-y
13. Marrett, E., Radican, L., Davies, M. J., & Zhang, Q. (2011). Assessment of severity and frequency of self-reported hypoglycemia on quality of life in patients with type 2 diabetes treated with oral antihyperglycemic agents: A survey study. *BMC research notes*, *4*, 251. https://doi.org/10.1186/1756-0500-4-251
14. Alshuweihi, H. H., Zadeh, S. A. M., Al-Sharman, A., Nambi, G., Azab, A. R., Elsayed, S. H., Abdelbaset, W. K., & Abdelbasset, W. K. (2025). Prevalence and risk factors associated with work-related musculoskeletal disorders among physiotherapists in United Arab Emirates. *Scientific reports*, *15*(1), 38878. https://doi.org/10.1038/s41598-025-22619-6
15. Krishnan, K. S., Raju, G., &Shawkataly, O. (2021). Prevalence of Work-Related Musculoskeletal Disorders: Psychological and Physical Risk Factors. *International journal of environmental research and public health*, *18*(17), 9361. https://doi.org/10.3390/ijerph18179361
16. Zheng, B., Chen, F., Wang, J., Deng, H., Li, J., Zhou, C., & Ye, M. (2023). The Prevalence and Correlated Factors of Occupational Stress, Cumulative Fatigue, and Musculoskeletal Disorders among Information Technology Workers: A Cross-Sectional Study in Chongqing, China. *Healthcare (Basel, Switzerland)*, *11*(16), 2322. https://doi.org/10.3390/healthcare11162322

17. Campo, M., Weiser, S., Koenig, K. L., &Nordin, M. (2008). Work-related musculoskeletal disorders in physical therapists: a prospective cohort study with 1-year follow-up. *Physical therapy*, *88*(5), 608–619. https://doi.org/10.2522/ptj.20070127

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