

# Musculoskeletal Disorders among Physiotherapists- Scientific Review of the Literature

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**Abstract:** ***Purpose of the article:** The purpose of the article is to present a paper about to compared research which has dealt with musculoskeletal disorders in physiotherapists and other health professionals at work and to record which injuries are in question. **Materials and methods:** In March and April 2019 were searched various biomedical databases such as PubMed, ResearchGate and Academia. edu using the keywords "Work Related Musculoskeletal Disorders", "Musculoskeletal Injuries", "Work Injuries", "Physiotherapists", "Occupational health", on the basis of which the presentation of the data obtained in the found research was done. **Results:** We have selected five studies that we have included in this scientific review of the literature based on the purpose and objectives of the paper. The studies are from Egypt, Nigeria, East Malaysia and Slovenia. **Conclusions:** Based on the reviewed studies, the conclusions are: physiotherapists are at high risk for work-related musculoskeletal disorders, the younger population is at high risk and the onset of lower back pain often occurs in the first five years of physiotherapist work, stress at work is more related to physical than psychological factors, there is a need to develop ergonomic guidelines for clinical practice in physiotherapy.*

**Keywords:** musculoskeletal disorders, physiotherapists, review

## 1. Introduction

Musculoskeletal disorders due to the work process (work) can lead to loss of working time, loss of consciousness, restriction of work or change of job, and even death. It is also defined as pain that originates from muscles, ligaments, tendons, joint capsules, bursa and bone that lasts for more than three days as a result of work. Healthcare is one of the largest industries, and healthcare workers are at the highest risk of musculoskeletal disorders. These types of disorders are very common in physiotherapists and nurses. Studies have shown a high prevalence of lower back pain, but it is also more common in other areas such as the neck, elbow, wrist / hand. Physiotherapists are more susceptible due to work-intensive tasks. Musculoskeletal disorders are also associated with the use of hands (manual control) which requires physical force to lift, push, pull or move people or objects. These disorders ultimately lead to limited work obligations, loss of working time and switching to another job (1). It is important to be aware of the work environment in order to understand the prevalence and causes of musculoskeletal disorders related to work in physiotherapists. Different work environments include a university hospital, a public hospital, pediatric rehabilitation centers, home care, private physical therapy clinics, and more. Campo et al found that the incidence rate of work-related musculoskeletal disorders was 20.7% (1). Risk-increasing physical therapy techniques include patient transfers, bending / twisting positions, manual therapy techniques, soft tissue mobilization, and physical work effort / strain. The prevalence rates of work-related musculoskeletal disorders have been reported in Australia, the United States, Britain, Europe, and some parts of the Middle East such as Kuwait, Egypt, and Saudi Arabia (1, 2). The prevalence of work-related musculoskeletal disorders is higher in women than in men and more so in physiotherapists working in a secondary work environment and full-time (3). Working with highly dependent (more mobile) patients is a factor that triggers lower back pain (4).

## 2. Objectives of the Work

The aim of this paper is to compare research that has dealt with musculoskeletal disorders in physiotherapists and other health professionals at work and to record which injuries are in question.

## 3. Materials and Methods of Work

In March and April 2019 were searched various biomedical databases such as PubMed, ResearchGate and Academia. edu using the keywords "Work Related Musculoskeletal Disorders", "Musculoskeletal Injuries", "Work Injuries", "Physiotherapists", "Occupational health", on the basis of which the presentation of the data obtained in the found research was done. The research is limited to articles published in English. The research of musculoskeletal injuries by physiotherapists at work is a non-experimental qualitative research, ie a scientific review of the literature.

## 4. Results and Discussion

We have selected five studies that we have included in this scientific review of the literature based on the purpose and objectives of the paper. The studies are from Egypt, Nigeria, East Malaysia and Slovenia. The studies are presented in Table 1.

## 5. Conclusions

- 1) Physiotherapists are at high risk for work-related musculoskeletal disorders.
- 2) The younger population is at high risk and the onset of lower back pain often occurs in the first five years of physiotherapist work and before the age of 30.
- 3) Working with highly dependent (more mobile) patients is a factor that triggers lower back pain.
- 4) Stress at work is more related to physical than psychological factors.

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- 5) There is a need to develop ergonomic guidelines for clinical practice in physiotherapy. Such guidelines can help reduce risk factors for work-related musculoskeletal disorders and reduce the incidence of this condition.
- [3] Rajan B. Prevalence of work related musculoskeletal disorders among Physiotherapists in Sabah: A cross-sectional study. *International Journal of Physical Education, Sports and Health* 2016; 3 (1): 336-343.

**References**

- [1] Al-Eisa E. Work Related Musculoskeletal Disorders: Causes, Prevalence and Response Among Egyptian and Saudi Physical Therapists. *Middle-East Journal of Scientific Research* 12 (4): 523-529, 2012.
- [2] Babatunde A. Work-related musculoskeletal disorders among Nigerian Physiotherapists. *BMC Musculoskeletal Disorders* 2008, 9: 112.
- [4] Rugej D. Low back pain and other work-related musculoskeletal problems among physiotherapists. *Applied Ergonomics* 34 (2003) 635–639.
- [5] Ukachukwu O. A. Job Stress Dimension and Work-related Musculoskeletal Disorders among Southeast Nigeria Physiotherapists. *International Journal of Occupational Safety and Ergonomics*, DOI: 10.1080/10803548.2016.1219476.

**Table number 1**

Serial number	Author (s)	Name of the study	Type of study	Research goal (s)	Research method (s)	Results	Conclusion
1.	Einas Al-Eisa, Syamala Buragadda, Afaf A. M. Shaheen, Amal Ibrahim, Ganeswara Rao Melam.	Work Related Musculoskeletal Disorders: Causes, Prevalence and Response Among Egyptian and Saudi Physical Therapists	Transverse cross-sectional study.	To determine the prevalence, causes and response to work-related musculoskeletal disorders among Egyptian and Saudi physiotherapists.	After approval by the ethics committee, a total of 200 physiotherapists were randomly selected from a list of members of the Egyptian and Saudi Physical Therapy Association. The self-administered validated questionnaire was distributed manually or by e-mail. Each member was asked to complete a questionnaire if they had more than 1 year of clinical experience. The questions included the demographic and professional history of the physiotherapist. Characteristics such as age, gender, weight, height, and educational qualifications are included in demographic data. The history of the occupation was about the specialty, years of experience, type of work environment, working hours, number of treated patients per day and details about musculoskeletal injuries. If the subject has experienced at least one musculoskeletal injury related to work, then he was asked to respond to the type of injury, the anatomical area involved, the cause and aggravating factor for the injuries and the response to it.	Of the 200, 162 responded with an overall response rate of 81% (Egyptian FT 62% and Saudi FT 100%). Regarding the affected parts of the body, the Egyptian FT reported a prevalence rate of musculoskeletal disorders related to work in the neck (25%), lower back (23.4%), shoulders (15.3%) and wrist / hand/wrist (14.5%). The part of the body least affected by the injury with less than 1% of the respondents was the hip. The Saudi FT reported a prevalence rate in the lower back (33%), neck (29%), knee (13%) and upper back (12%). In contrast to Egyptian FTs, the least affected parts of the body with less than 1% of respondents were the elbow and ankle / foot.	The main finding of this study was that Egyptian and Saudi physiotherapists are also at high risk for work-related musculoskeletal disorders, as are their counterparts elsewhere. The majority of Egyptian (66.1%) and Saudi (73%) respondents were between the ages of 20-30 and this result is consistent with studies indicating that the younger population is at high risk and that the onset of lower back pain is frequent. occurs in the first five years of work of a physiotherapist and before the age of 30 years. The strategies used by the respondents to reduce further injuries are: avoiding lifting, changing working position and reducing the use of manual techniques, encouraging patient responsibility for treatment, taking more rest during the working day.
Serial number	Author (s)	Name of the study	Type of study	Research goal (s)	Research method (s)	Results	Conclusion
2.	Babatunde OA Adegoke, Ashiyat K Akodu, Adewale L	Work-related musculoskeletal disorders among Nigerian Physiotherapists	Transverse cross-sectional study.	The aim of this study was to examine the 12-month prevalence and work	Two hundred and seventeen copies of the questionnaire were distributed, but 126 physiotherapists returned completed surveys, accounting for 58.1%. The	The higher prevalence found in this study suggests that physiotherapy practice in Nigeria is highly predisposed to work-	The practice of physiotherapy in Nigeria, as in many other developing countries, is mainly burdened by

	Oyeyemi.			factors related to the work of musculoskeletal disorders in physiotherapists in Nigeria.	12-month prevalence of work-related musculoskeletal disorders among Nigerian physiotherapists was 91.3%.	related musculoskeletal disorders. Factors of work that physiotherapists in this study usually identified as contributing to the occurrence of their work-related musculoskeletal disorders are: treating a large number of patients in one day, working in the same position for a long time, and raising or transferring dependent (more mobile) patients. manual therapy technique.	unfavorable working conditions, lack of staff and lack of appropriate equipment, including basic and standard ones. This study reveals that the 12-month prevalence of work-related musculoskeletal disorders among physiotherapists in Nigeria is higher than most values reported for their counterparts worldwide, but reflects similar work risk factors and coping strategies.
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3.	Rajan Balakrishnan , Nur Asyikin Binti Moh Naib	Prevalence of work related musculoskeletal disorders among Physiotherapists in Sabah: A cross-sectional study	Transverse cross-sectional study.	The aim of the study is to determine the prevalence of work-related musculoskeletal disorders in physiotherapists in Sabah (East Malaysia).	The research was conducted by physiotherapists aged between 22 and 55 in different parts of Sabah.100 copies of the questionnaire were distributed to various hospital or rehabilitation centers in Sabah. A standardized Nordic questionnaire consisting of 26 questions with Section A (personal data) and Section B (work environment data) was used.	Seventy physiotherapists (70%) reported having musculoskeletal disorders related to work during the 12-month prevalence of musculoskeletal disorders related to work in different parts of the body. back 13%, knees 10%, shoulders 7%, wrist / hands 5%, ankle / foot 3%, thumbs 2%, hips 1% and elbow / forearm 0%. Musculoskeletal disorders related to work were reported in 50% of women and 20% of men, while musculoskeletal disorders related to work were not reported in 19% of women and 11% of men.	This study concluded that the incidence of work-related musculoskeletal disorders among physiotherapists in Sabah is high. The prevalence of work-related musculoskeletal disorders is higher in women than in men and more so in physiotherapists working in a secondary work environment and full-time. Adequate preventive and appropriate management strategies are recommended in order to reduce musculoskeletal disorders related to work in physiotherapy practice.
Serial number	Author (s)	Name of the study	Type of study	Research goal (s)	Research method (s)	Results	Conclusion
4.	Darja Rugelj	Low back pain and other work-related musculoskeletal problems among physiotherapists	Transverse cross-sectional study.	The aim of this study is to determine the incidence of lower back pain related to work and other musculoskeletal disorders among physiotherapists, as well as to determine the common personal and professional	Participants in the annual meeting of physiotherapists received a questionnaire, which was part of the congress material. Participants were asked to return it to the registration desk during the congress. Out of 170 distributed questionnaires, 133 were returned, which is 15% of physiotherapists working in Slovenia. The questionnaire contained general information on age, gender, years of practice, work, work environment and	The question "have you ever had severe back pain" was answered positively by 73.7% of respondents, while 50.4% of respondents reported having had lower back pain several times. Of the 27.1% of respondents who did not report lower back pain, the majority (66.6%) were in the age group between 20 and 40 years. The majority of	Lifting and working with patients is considered to be the main cause of musculoskeletal disorders and lower back pain among healthcare professionals.33.8% of physiotherapists rarely worked with dependent (more mobile) patients, 39.1% often and 27.1% exclusively. Working with highly dependent (more

				<p>characteristics of physiotherapists who report musculoskeletal disorders related to work.</p>	<p>patient population. Respondents were asked about musculoskeletal problems that, in their opinion, are related to physiotherapy practice. The sample consisted of 95.5% women and 4.5% men. The mean age of the respondents was 39.5 years, and the age of the respondents ranged in age from 21 to 74 years. The majority (39.8%) of physiotherapists were in the age group 31-40. Most physiotherapists had 11-20 years of work experience (43.6%), 27% worked less than 10 years, and 27.8% worked as a physiotherapist for more than 20 years. The majority of respondents work in primary health care (29.3%) and in hospital (27%).</p>	<p>respondents who had lower back pain several times (74.6%) were in the age group between 31 and 50 years. Of all respondents, 18% visited a doctor once while 11.3% visited a doctor several times. Most of them were in the age group between 31 and 50, and 21% of the respondents were due to lower back pain: 15% once and 6% several times. 47.4% of respondents were convinced that their lower back pain was related to their work as a physiotherapist, 21.1% thought that their lower back pain was not related to physiotherapy practice, and 15.8% could not decide. 40.6% of them decided to alleviate the pain with rest or physiotherapeutic treatment, 50.4% of them. Respondents also claimed that there were problems with the musculoskeletal system in several other parts of the locomotor system, which were related to the work of physiotherapists, 19.5% reported neck pain, 15% in the shoulder and 15% in the wrists and hands.</p>	<p>mobile) patients is a factor that triggers lower back pain.</p>
Serial number	Author (s)	Name of the study	Type of study	Research goal (s)	Research method (s)	Results	Conclusion
5.	Ukachukwu Okoroafor Abaraogu, Charles Ikechukwu Ezema, Chinenye Kosisochukwu Nwosu.	Job Stress Dimension and Work-related Musculoskeletal Disorders among Southeast Nigeria Physiotherapists	Transverse cross-sectional study.	Investigate the work stress dimension and its association with work-related musculoskeletal disorders by physiotherapists currently working in southeastern Nigeria.	The study was conducted in hospitals in 5 states of southeastern Nigeria. Two questionnaires (job content questionnaire and Nordic questionnaire) were used to investigate demographics, job content and work-related musculoskeletal disorders. 126 of the 143 physiotherapists participated, resulting in a response rate of 88.1%.	A high percentage of respondents experienced some kind of symptoms of work-related musculoskeletal disorders during the last 12 months (82.1%), and 22.8% had symptoms of work-related musculoskeletal disorders during the last 7 days. The most commonly affected region was the lower back (57.8% at 12 months and 20.7% at 7-day prevalence). It can be concluded that stress at work is more	The prevalence of work-related musculoskeletal disorders among physiotherapists in southeastern Nigeria is high. Stress at work is more related to physical than psychological factors. In any case, the dimensions of stress at work are not related to musculoskeletal disorders related to work among physiotherapists. Intervention programs should be organized to prevent symptoms

						<p>related to the physical than to the psychological factors of the work of a physiotherapist in southeastern Nigeria. Mean values of work stress dimensions in physiotherapists with and without symptoms of musculoskeletal disorders related to work within 12 months and 7 days did not show a significant difference in mean scores for each of the domains of the scale of stress at work between physiotherapists with and without muscle symptoms-bone disorders related to work.</p>	<p>of musculoskeletal disorders related to work in the study population, as well as to make additional efforts to reduce psychological and physical demands at work. Importantly, there is a need for ergonomic guidelines for clinical physiotherapy practice in Nigeria. Such guidelines can help reduce risk factors for work-related musculoskeletal disorders and reduce the incidence of this condition.</p>
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