Treatment-Seeking Behavior and Clinical Outcomes of Patients with Work-Related Lower Ergonomic Disorders in Selected Health Facilities in Montserrado County, Liberia

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Abstract

Employers and health care systems continue to face a significant burden from Work-Related Lower Extremity Disorders (WLEDs), especially in the lower back, hips, knees, and lower limbs. WLEDs are serious concerns for all occupations as these types of conditions will continue to be a huge health and financial burden for individuals, employers, and the healthcare systems throughout the world. WLEDs are a result of many different workplace activities such as lifting heavy objects, prolonged standing or sitting, repetitive movement or awkward posture and poor workstation design. There are many negative impacts that WLEDs may have on a person's body other than causing pain; reduced mobility/function and the loss of productivity for both the individual and the employer as a result of absenteeism and sick time lost due to these injuries. Many individuals continue to work with WLEDs despite experiencing pain and, in many cases, cause further injury by doing so thus continuing to increase the amount of time a person may be disabled from work because of their injury.

The impact of work-related lower ergonomic disorders on Montserrado County, Liberia's population is magnified by delayed healthcare-seeking behavior, poor workplace ergonomic practices, limited access to physiotherapy services, and poorly developed rehabilitation systems that are prevalent in low-resource settings in the world. Patients with these disorders typically depend on self-medicating, using traditional forms of treatment, and/or seeking informal means of care prior to seeing professional healthcare providers, which can lead to delayed effective treatment and poor clinical outcomes. This literature review assessed treatment-seeking behavior and clinical outcomes for patients with work-related lower ergonomic disorders receiving care from various health facilities. The results of the review illustrate the need for early intervention, consistent adherence to physiotherapy, and good communication between the

therapist and patient in order to improve pain control, function, and return-to-work outcomes. However, there is a limited amount of Liberia-specific literature that identifies a need for further research in order to strengthen the occupational health policies and rehabilitation services in the country.

Keywords: Work-related musculoskeletal disorders, ergonomic disorders, treatment-seeking behavior, physiotherapy outcomes, occupational health, Liberia

Background

WMSDs (Work-related Musculo-skeletal Disorders) are one of the biggest challenges both globally in public health affecting thousands of people, which lead to long term disability and socio-economic loss [1] The term WMSDs refer to injuries that occur to the musculo-skeletal system - muscle, joint, tendon, ligament and nerve - usually as a result of or exacerbated by work-related tasks [3]. The most prevalent form of WMSDs is lower back pain that has the highest incidence of disability in the world and also makes up the majority of all rehabilitation cases [2].

Biomechanical stressors encountered while working - specifically prolonged standing, prolonged sitting, repetitive lifting, awkward postures and repetitive movements - are strongly associated with lower ergonomic disorders affecting the lower back, hips, knees and lower limbs [4]. These exposures result in cumulative trauma and structural strain to the musculo-skeletal system resulting in chronic pain and decreased physical functioning [9].

Occupational exposure continues to be one of the strongest contributors to lower ergonomic disorders in workers. Many workers in health care, construction, transportation, manufacturing and office environments have increased susceptibility to these disorders due to the workload demands associated with their jobs [5,6]. Office workers - although not as physically active as workers in other jobs - are still experiencing increased rates of WMSD from sedentarism and poor workstation ergonomics [7].

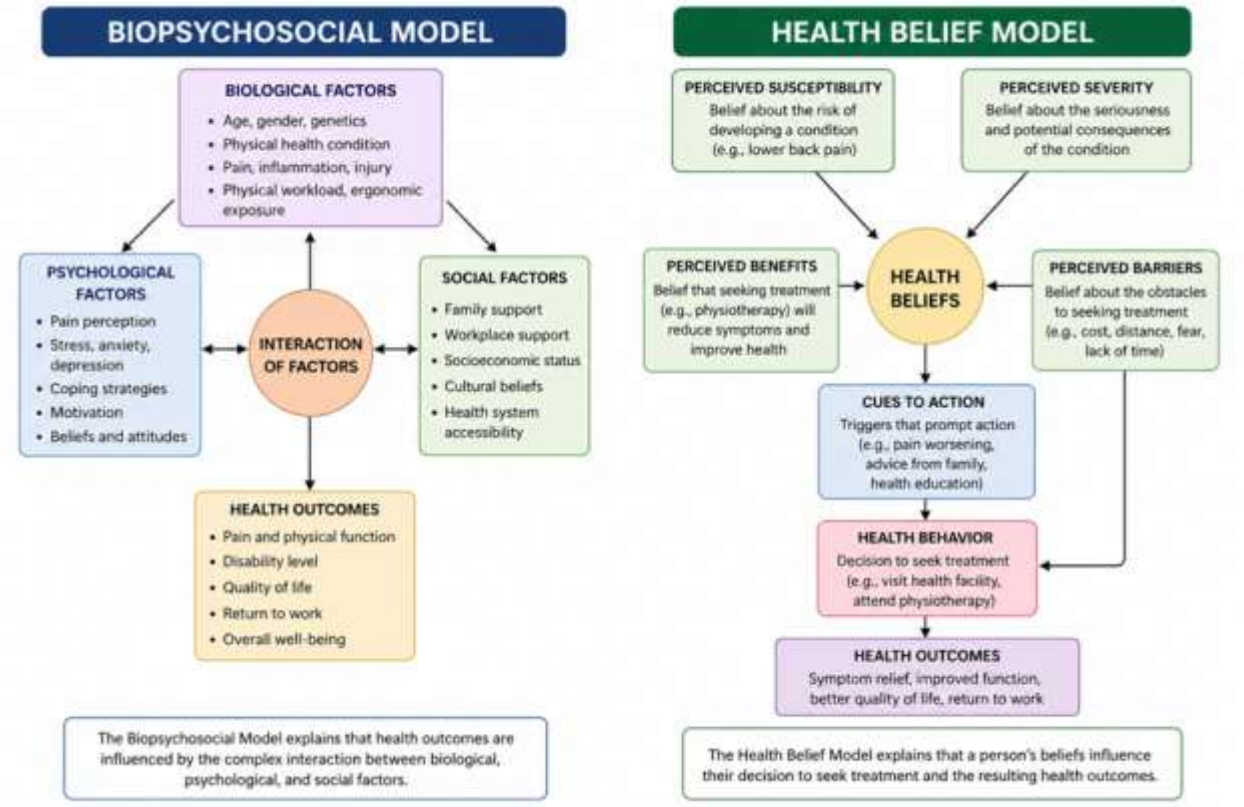
The implications of work-related musculoskeletal disorders go beyond mere physical discomfort to having severe impacts on productivity and absenteeism rates [3]. The pain that these conditions create causes difficulties with mental functioning, movement, and even social well-being [8]. Consequently, the healthcare seeking behaviors of those individuals becomes an important consideration.

The fact that these conditions have debilitating effects does not mean that patients seek out professional medical help immediately; they usually self-treat their pain [8]. It leads to delayed diagnoses and treatment of these illnesses, causing them to turn into chronic illnesses rather than acute conditions [19]. Seeking healthcare early leads to better pain relief and functional recovery [25].

In Liberia, the healthcare infrastructure for dealing with work-related musculoskeletal injuries is poor; access to physiotherapy treatments remains difficult for many Liberians [15]. In Montserrado County, for example, many individuals suffer through their condition before seeking medical attention [26].

Conceptual Framework

This review is guided by the Biopsychosocial Model and the Health Belief Model to explain the relationship between occupational ergonomic exposure, treatment-seeking behavior, and clinical outcomes.



Factors in occupational exposure, including heavy lifting, prolonged standing, prolonged sitting, awkward postures, repetitive motions, and poor ergonomic setup of workplace equipment, play an important role in the occurrence of ergonomic disorders [9-12]. Heavy lifting leads to increased spine loading and muscle strain, whereas prolonged standing and sitting cause lumbar and lower extremity load [9-11]. Repetitive motions and awkward postures are linked to increased cumulative trauma and risk of pain [12].

The tendency to seek medical treatment is considered a mediating variable affecting rehabilitation outcomes. Time before treatment seeking, hospital visits frequency, and compliance with physiotherapy treatments have a great effect on rehabilitation success [13]. Patients that delay seeking professional help tend to experience increased pain, disability, and slowed recovery processes [19].

Pain relief, functional recovery, reduced disability, return to work, and quality of life are some of the clinical measures highly associated with adherence to physiotherapy and treatment persistence [14,24].

Variables such as physiotherapy availability, costs, and other related aspects may act as moderators for healthcare utilization and treatment outcomes [15].

Methods

This review followed a narrative review approach in examining treatment-seeking behaviors and clinical outcomes among patients who suffered from lower ergonomic disorders associated with work activities [16]. The strength of narrative reviews lies in the possibility of synthesizing findings from various designs and offering a broader perspective on rehabilitative outcomes [17].

An extensive literature search was performed utilizing databases such as PubMed, Scopus, Google Scholar, and peer-reviewed physiotherapy journals. The literature search covered articles within the period from 2022 to 2026, ensuring that the review is up-to-date [18]. Relevant search terms included

work-related musculoskeletal disorders, lower back pain, ergonomic disorders, treatment-seeking behaviors, physiotherapy outcomes, occupational hazards, and adherence to physiotherapy.

In addition, the literature search entailed systematic reviews, clinical audits, physiotherapy outcome studies, and cross-sectional studies. Studies involving adult patients suffering from lower ergonomic disorders related to work activities and undergoing physiotherapy were selected for this study [18].

Results

Treatment-Seeking Behavior

Occupational lower ergonomic disorders (OLEDs), especially in relation to the lower back, hips, knees, and lower extremities, have continued to be a major issue in the field of occupational health and safety, posing significant costs for workers, employers, and the healthcare sector [1]. They are one of the most common sources of disability due to pain and have been shown to have close associations with occupational risk factors like lifting heavy loads, long periods of standing, long periods of sitting, repetitive motions, awkward posture, and poorly designed workstations [3]. This kind of ergonomic hazard places continuous physical demands on the musculoskeletal system that cause tissue injury, joint dysfunction, muscle fatigue, and tissue degeneration [4]. People working in occupations that require strenuous physical activity such as construction, health services, transportation, manufacturing industries, and agriculture are at particular risk owing to the nature of the activities performed [6]. Office workers too are increasingly becoming victims of this phenomenon because of their sedentary habits and poorly designed workstations [7].

Ergonomic disorders that cause low back pain have consequences beyond physical pain and discomfort. They may affect an individual's mobility and functionality, leading to poor work performance, high absenteeism rates, and low productivity, resulting in substantial economic losses for the worker and the employer [8]. In some instances, ergonomic disorders may lead to chronic disability, emotional problems, and job restrictions, making it difficult for the worker to function effectively [2]. Workers continue working despite experiencing pain because they need the money or do not want to lose their jobs, or they fail to recognize the seriousness of their symptoms, further exacerbating their health problem [19].

The problem of work-related ergonomic injuries in resource-poor environments like Montserrado County, Liberia, is aggravated by delays in seeking medical care, poor ergonomic standards in the workplace, lack of physiotherapy, and ineffective rehabilitation programs [15]. Lack of occupational health knowledge and failure to enforce occupational health standards add to the risk factors for ergonomic injuries [26]. The patient’s first line of action is often self-medicating, traditional medicine, or alternative treatments before resorting to medical attention, which can delay treatment and exacerbate their condition [20]. Seeking medical attention late usually results in more intense pain, prolonged disability, and delayed recovery [19].

This paper discusses treatment seeking and clinical experience of people suffering from work-related lower ergonomic disorders in selected health institutions. The results emphasize the significance of timely intervention, physiotherapy compliance, and positive interaction between therapists and their patients for better pain relief, functional improvement, decrease in disability, and positive return-to-work results [22,24]. The physiotherapy technique stands out as one of the most reliable ways of non-invasive management of this kind of disorders through exercise therapy, pain management, ergonomic training, and functional rehabilitation [25]. Unfortunately, there is a lack of data on this problem in the context of Liberia, which justifies conducting further research within this region [27].

Physiotherapy Adherence

Compliance with physiotherapy remains an important factor influencing recovery in workers suffering from ergonomic disorders of the lower part of the body since the efficiency of rehabilitation will greatly depend on how diligently the patients comply with their therapy. Compliance includes regular physiotherapy, exercising, following proper posture, and adhering to recommendations for activities and ergonomic adjustment. Those patients who regularly attend rehabilitation therapy tend to achieve quicker alleviation of pain, higher mobility, increased muscle strength, and faster functional improvement than patients who have irregular attendance and prematurely end their treatment [22].

There are various factors that determine the level of adherence to physiotherapy treatment and ultimately affect the outcome of rehabilitation. For instance, communication between the physiotherapist and the patient is important as it increases trust, leads to better comprehension of the situation, and ensures that there is proper understanding of the goals of the treatment plan, hence increased adherence [13]. It is also important to have personalized treatments based on the pain intensity experienced by the individual, occupation, and physical functions. Motivation plays an important part in ensuring continued commitment during the entire process of rehabilitation.

The biopsychosocial determinants of treatment adherence include psychological factors, social factors, emotional factors, and cooperation between patient and therapist, among others. Individuals who have good social networks, especially with regard to family support, have higher chances of adherence and improved outcomes.

Clinical Outcomes

As stated in reference [24], physiotherapy treatment options (e.g., exercise therapy, manual therapy, ergonomic education, and mobility training) have been shown to be effective at reducing pain and restoring physical function for patients suffering from ergonomically-related lower back injuries related to work. The objective of these physiotherapy treatment interventions is to address the underlying biomechanical and functional limitations that occur as a result of overuse and to facilitate the long-term recovery and prevent re-injury of patients. Exercise therapy has a critical role in the rehabilitation of patients with lower back injuries, by optimising spinal stability; increasing spinal flexibility; increasing muscular strength and adjusting movement patterns to reduce the biomechanics stresses placed on the injured area of the body [24]. Patients who satisfactorily complete a supervised exercise program can improve their posture and balance and their coordination; these improvements can significantly reduce pain and restore normal movement.

In addition to the positive effects of exercise therapy, manual therapy contributes to rehabilitation outcomes by reducing stiffness of the joints, improving mobility of the soft tissues, and decreasing muscular tension. Ergonomic education combined with manual therapy gives the patient an understanding of how to use safe body mechanics, how to correct their posture, and how to make changes to their work environment to minimise additional injuries and to support long-term musculoskeletal health. Finally, mobility training will improve physical function via improved range of motion of the joints and the patient's ability to complete their daily living and work-related activities independently [24].

Successful rehabilitation can be measured in terms of the return to work; successful return to work indicates that an individual's physical recovery and their return to the workforce have been achieved [25]. In addition, if the individual has successfully returned to work, this could further demonstrate an improved strength, endurance and functional capacity. Physiotherapy interventions can reduce an individual's disability, as well as decrease the amount of time they will be absent from work, improve their quality of life by providing increased functional independence, self-confidence in performing

movement-related tasks, and aiding in their ability to return to living a productive life with decreased pain and limitations on physical function [14].

Challenges in Low-Resource Settings

In low-resourced areas like Liberia, patients experience barriers related to infrastructure and income because of inadequacies in treatment and rehabilitation options for work-related lower ergonomic disorders. Health systems have difficulties with insufficient rehabilitation facilities, not enough trained physiotherapist professionals, and limited access to specialized musculoskeletal care outside urban centers. These issues lead to decreased timely access to physiotherapy, contributing to delayed treatment begin and possibly causing worse outcomes for musculoskeletal disorders and more extensive time required for recovery.

The lack of physiotherapy facilities is also a significant challenge. Many facilities do not have the needed physiotherapy equipment, trained therapists, or rehabilitative unit to effectively help patients manage injuries from work-related lower ergonomic conditions. This often results in patients having to be referred greater than normal distances and/or being placed on long waitlists, both creating a disruption of continuity of care. Additionally, the high costs of physiotherapy can also be a considerable challenge when patients are paying for all healthcare expenses out of pocket and very few, if any, have access to formal health insurance [15]. Because of this, many patients cannot financially afford the cost of continual physiotherapy, transportation to appointments, and time away from work to receive treatment.

Access to healthcare is also hindered by transportation difficulties in rural or underserved areas (e.g., long distances from home to the hospital with no means of public transportation) which can create barriers. In addition, insufficient occupational safety regulations and enforcement of ergonomics at work result in repeated exposure to the same work-related injury-causing hazards, despite treatment. Also, many workers lack health insurance or have inadequate employer support for rehabilitation, thereby impeding access to necessary services and having long-term implications for recovery from an injury [15]. These obstacles collectively result in lower treatment compliance, longer recovery times, greater disabilities, and increased chances of re-injury for workers with pre-existing medical conditions.

Conclusion

Patients with workplace-related lower ergonomic disorders depend on their treatment-seeking behavior to know when to seek help, what type of treatment is available and how well they are likely to recover.

Research shows that patients with recent musculoskeletal complaints who use health care services early gain better control of their pain, are likely to recover function sooner and have an increased chance of successfully returning to their prior work because they have prevented the development of chronic disabling conditions as a result of not seeking early care [25].

By getting early intervention, patients can provide timely assessments, develop effective physiotherapy programs and implement appropriate ergonomic corrections so they can recover more quickly, ultimately reducing the long-term economic impact of occupational injuries.

Delayed healthcare use remains a significant challenge for many individuals; this is especially true for labourers in physically demanding jobs, where pain is frequently viewed as the norm, and/or unaddressed. Factors that affect timely presentation at health facilities are myriad in nature but often include: financial constraints, unawareness of the benefits of physical therapy, feeling pressured at work, and difficulty in transportation. Poor adherence to physiotherapy as well as irregular attendance to rehabilitation programs can adversely impact the success of treatment and ultimately prolong an individual's recovery time,

leading to more significant levels of disabilities than originally experienced and lowered levels of work performance [19, 22]. Failure to complete rehabilitation can also increase the likelihood of experiencing a return of symptoms and/or developing chronic functional limitations.

Evidence shows that continuing to provide physiotherapy interventions is effective in improving overall pain management, increasing mobility, reducing disability, and improving occupational productivity by addressing both the physical and functional impacts of lower ergonomically related conditions [24]. While there is substantial internationally-based research on treatment-seeking behaviour and rehabilitation outcomes, there continues to be limited Liberia-specific data available pertaining to treatment-seeking behaviour, with the potential exception of Montserrado County [27]. Therefore, additional studies are required to increase research available on facility-based occupational health systems, to improve access to physical therapy services and increase development of context-based rehabilitation strategies to increase patient outcomes and improve the overall health of workplaces.

Take-Home Message

Due to the lower incidence of effective early intervention with physiotherapy care plus enhanced patient compliance to physiotherapy care, workers suffering from chronic musculoskeletal disorders typically have better recovery rates than those who are not treated early or who do not follow through with treatment. An optimal point for physiotherapy intervention has been identified when patients present to physiotherapy in the first month of experiencing their musculoskeletal disorder. Where physiotherapy is provided within this one-month period from the onset of a problem, there is significantly greater improvement in pain symptoms, functional limitations, and mobility, thus providing earlier functional recovery and returning to work in a safe and timely manner, thus reducing productivity losses and the economic burden to workers and employers associated with work-related musculoskeletal injuries.

Better treatment adherence is just as crucial as it influences the effectiveness of physiotherapy. In particular, regular attendance at physiotherapy sessions, engagement in exercises, and ergonomic instructions help to achieve better pain management results, recover fully, and avoid injuries. People who follow the instructions will be able to recover their physical ability and maintain healthy muscles.

Moreover, improving the ergonomic knowledge of workers is another step towards reducing the number of lower back disorders among employees. Teaching people how to lift weight correctly, sit properly, adjust their workplaces, etc. will help avoid many ergonomic risks that cause various injuries. Finally, making physiotherapy more accessible to employees through better services, cheaper physiotherapy sessions, etc. will allow decreasing disability, improving the quality of life and boosting work performance.

Author's Contribution

The study was designed and conducted by **Mr. Stephen S. Bonard**, who created the literature search, analysed the results, wrote the manuscript and also contributed to the interpretation of data. **Ms. Kashish Pathan** provided input on developing the conceptual framework; reviewed literature critically, edited the manuscript, and offered psychological interpretations of treatment-seeking behaviour and rehabilitation adherence. **Dr. Stephen Monday** supervised the study, developed its methodological framework, made contributions regarding occupational health and environmental health interpretations, reviewed the manuscript for intellectual content, and was the correspondence author. All authors read, approved and endorsed the final version of the article for publication.

Conflict of Interest

The authors declare that there are no financial, personal, institutional, or professional conflicts of interest related to the preparation, authorship, and publication of this manuscript. The research was conducted independently, and the findings presented are free from any commercial or external influence.

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