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PERCEPTION OF CLINICAL PHYSICAL THERAPISTS ABOUT PILATES EXERCISES TO TREAT NON-SPECIFIC LOW BACK PAIN -A CROSS-SECTIONAL SURVEY

Original Research

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ABSTRACT

Background: Non-specific low back pain (NSLBP) encompasses a variety of etiologies including muscular and ligament strains, fractures, tumors, and infections like spinal tuberculosis. Predominantly, it is characterized by painful muscular strains and poor body mechanics, with potential involvement of abdominal viscera contributing to discomfort.

Objective: The purpose of this study is to assess the perceptions of clinical physical therapists regarding the use of Pilates exercises for the treatment of NSLBP.

Methods: This descriptive cross-sectional study will engage physical therapists across diverse clinical settings to explore their use of Pilates in managing NSLBP. The research will span four months following synopsis approval, employing purposive sampling to select 169 participants. A specially designed questionnaire will be used to gather data on therapists' perceptions of Pilates as a therapeutic approach.

Results: Preliminary findings indicate that Pilates exercises are deemed effective by a majority of physical therapists for treating NSLBP, highlighting their frequent application in clinical practice.

Conclusion: Pilates exercises substantially reduce pain and enhance the range of motion in patients suffering from NSLBP, indicating a significant therapeutic benefit.

Keywords: Clinical Physical Therapists, Low back pain, Non-specific low back pain (NSLBP), Pilates.

INTRODUCTION

Low back pain, characterized by discomfort originating between the gluteal fold and the lower margins of the ribs, is a prevalent condition affecting populations globally. This type of pain, often described as dull, achy, or sore, may result from muscular tightness or spasms in the lower back (1). Non-specific low back pain, not attributed to any well-identified pathology such as infection, tumor, osteoporosis, fractures, or inflammatory diseases, poses a significant challenge in clinical settings (2). The multifaceted nature of low back pain—encompassing biophysical, psychological, and social dimensions—complicates its management and impacts its prevalence in the global burden of disease rankings, where it stands as a leading cause of disability (3).

The Pilates method, developed in the 1920s by Joseph Pilates under the concept of "Contrology," emphasizes controlled movements and body alignment through core strengthening exercises. These exercises are designed to improve posture, flexibility, balance, muscle endurance, and coordination, addressing several impairments commonly found in individuals with chronic low back pain (4). Pilates exercises incorporate core muscle strengthening, stretching, balance, flexibility, injury prevention, tension reduction, and mindfulness, adhering to principles such as concentration, control, precision, breathing, and flow (5). The application of Pilates in rehabilitation programs, facilitated by physical therapists, aids in enhancing functional movements through varied techniques, including mat work and equipment-based routines using adjustable spring resistance (6)(7).

The economic impact of non-specific low back pain is considerable, with direct and indirect costs running into billions as evidenced by data from countries like Australia and the United Kingdom (8). Despite its high prevalence and significant socio-economic burden, the effectiveness of various therapeutic interventions, including Pilates, has not been uniformly acknowledged across the clinical community.

This study aims to investigate the prevalence and perception of Pilates exercises among physical therapists for treating non-specific low back pain. By determining the extent to which Pilates is integrated into therapeutic practices, the study seeks to rationalize its utility based on clinical outcomes, contributing to optimized treatment protocols for this pervasive ailment.

METHODS

The methodology of this study involved a cross-sectional survey conducted between January and April 2023, targeting clinical physical therapists who had at least one year of professional experience. A purposive sampling technique was employed to select 71 participants, excluding academicians and therapists with less than one year of experience. The data collection was facilitated through a self-developed questionnaire designed to capture the perceptions of physical therapists regarding the use of Pilates exercises for treating non-specific low back pain (NSLBP).

Prior to participation, all therapists underwent a screening process using a preliminary questionnaire to ensure eligibility. Following this, informed consent was obtained from each participant, affirming their voluntary involvement and understanding of the study's aims and procedures. This consent process was crucial for ethical compliance and participant engagement.

Statistical analyses were conducted using SPSS version 20, focusing on descriptive statistics such as means and standard deviations to quantify the incidence and characteristics of Pilates exercise usage among the therapists. Additional data visualization, including charts and graphs, was performed with Microsoft Excel, while Microsoft Word supported the interpretation and presentation of the findings. This integrated approach ensured a robust analysis of the data collected, aiming to provide insightful conclusions about the role of Pilates exercises in the management of NSLBP among seasoned physical therapists.

RESULTS

The study's participant demographics revealed a diverse age range from 25 to 57 years, with a nearly balanced gender distribution—46.5% male and 53.5% female. Experience levels varied, with 26.8% of participants having exactly one year of experience, 31.0%

having more than one year, and 42.3% having more than two years. Educational backgrounds were also varied, with 4.2% holding a Bachelor of Science in Physical Therapy, 45.1% a Doctor of Physical Therapy, and 50.7% having a Master's or MPhil degree.

Table 1 Distribution of Treatment Modalities Used by Physical Therapists

Treatment Modalities	Frequency (Percentage)
Pilates Exercises	6 (8.5%)
Electrotherapy Modalities	10 (14.1%)
Combination of Pilates Exercises and Electrotherapy Modalities	47 (66.2%)
Other Interventions	8 (11.3%)
Total	71 (100.0%)

Table 2 Frequency of Pilates Exercises Prescribed by Physical Therapists

Range of Exercises Prescribed	Frequency (Percentage)
2-3	34 (47.9%)
4-5	26 (36.6%)
5-7	7 (9.9%)
7-10	4 (5.6%)
Total	71 (100.0%)

In terms of practice settings, the majority of physical therapists (54.9%) worked in private clinics, followed by 26.8% in government hospitals, 12.7% in urban clinics, and the smallest group, 5.6%, in private hospitals. A significant majority, 93.0% of participants, expressed an interest in treating low back pain (LBP). The frequency of seeing patients with LBP varied, with 4.2% of therapists seeing such patients once a month, 26.8% twice a month, 40.8% three to five times a month, and 28.2% five to ten times a month.

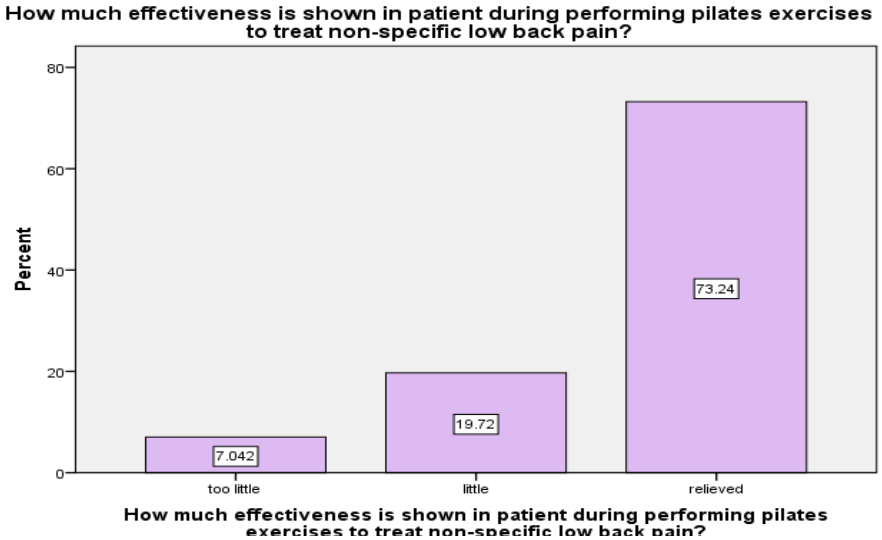

Figure 1 How much effectiveness is shown in patient during performing Pilates exercises to treat NSLBP

The treatment modalities employed by physical therapists showed a predominant use of a combination of Pilates exercises and electrotherapy modalities, which was utilized by 66.2% of respondents. Pilates alone was used by 8.5%, and electrotherapy modalities alone by 14.1%. Other interventions accounted for 11.3%.

Regarding the prescription of Pilates exercises, therapists most commonly prescribed 2-3 different exercises at one time (47.9%), followed by 4-5 exercises (36.6%). Fewer therapists prescribed a more extensive range of 5-7 exercises (9.9%) or 7-10 exercises (5.6%).

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Table 3 Outcomes Observed by Physical Therapists After Prescribing Pilates Exercises

Outcome	Frequency (Percentage)
Condition Became Stable	17 (23.9%)
Condition Worsened	7 (9.9%)
Pain Relieved	29 (40.8%)
Fully Treated	18 (25.4%)
Total	71 (100.0%)

The effectiveness of Pilates exercises was notable, with 73.24% of patients experiencing relief during the performance of Pilates exercises to treat NSLBP. Most notably, Pilates exercises showed the most effectiveness after one week of treatment. The outcomes of Pilates exercises varied: 40.8% of patients reported pain relief, 25.4% were fully treated, 23.9% experienced stabilization of their condition, and 9.9% reported worsening conditions.

This comprehensive analysis highlights the significant role of Pilates exercises in the management of NSLBP, showcasing their effectiveness and the varied outcomes observed in clinical practice. The data underscores the importance of tailored therapeutic approaches in maximizing patient outcomes.

DISCUSSION

The current research supports the efficacy of Pilates in managing chronic nonspecific low back pain (NSLBP), asserting its superiority in reducing pain and disability compared to minimal physical activities. Studies indicate that Pilates not only alleviates pain but also enhances functional abilities and postural control, which are crucial for patients with chronic conditions (10, 11). This finding is consistent with other research, which highlights Pilates-based exercises as more beneficial than other forms of exercise in treating NSLBP (12, 13). Notably, the integration of torso movements into Pilates routines appears to optimize outcomes, achieving comparable results to other exercise regimes when performed consistently over a period (13).

The short-term benefits of Pilates, including improvements in balance and sensory interaction, are observable within weeks, and continue to progress with sustained practice. This study found that adhering to a Pilates regimen for at least ten weeks markedly improves sensory connections and reduces fatigue, which is particularly advantageous for ambulatory patients seeking to manage balance and endurance issues associated with NSLBP (15).

Despite these promising outcomes, the study faces limitations that suggest caution in generalizing the findings across all demographics and settings. The research was confined to a specific urban area, potentially limiting its applicability to wider populations due to the risk of selection bias. Additionally, while a variety of Pilates exercises were included, the survey may not have encompassed the entire spectrum available, which might restrict the comprehensiveness of the findings.

In terms of exercise typology, while a straightforward four-exercise Pilates program was significantly beneficial, clinical practice usually involves a combination of customized exercises tailored to individual patient needs, underscoring the need for a personalized approach in therapeutic settings. Moreover, it is recommended that future research should explore the long-term effects of Pilates on NSLBP and expand the study to include diverse geographic and healthcare settings to validate and potentially broaden the applicability of these findings. Thus, while the benefits of Pilates for NSLBP are evident, further research is warranted to optimize its integration into clinical practice and to explore its full potential across different patient populations and conditions.

CONCLUSION

The findings of this study clearly demonstrate that Pilates exercises significantly enhance pain reduction and increase the range of motion in patients with non-specific low back pain. This therapeutic approach offers a promising option for improving patient outcomes in clinical settings, providing a valuable tool for physical therapists committed to alleviating the burden of this prevalent condition.

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