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Research

Effects of the McKenzie Method Versus Guideline-Based Advice in the Management of Chronic Sciatic Pain in Elderly

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Abstract

This study investigates the comparative effectiveness of the McKenzie Method versus guideline-based advice in the management of chronic sciatic pain among elderly patients. A total of 120 participants aged 65 years and older were enrolled in a randomized controlled trial to evaluate outcomes related to pain intensity, functional mobility, and quality of life. Pain was measured using the Visual Analog Scale (VAS), functional mobility was assessed with the Oswestry Disability Index (ODI), and quality of life was evaluated through the Short Form Health Survey (SF-36).Statistical analyses revealed that the McKenzie Method significantly reduced VAS scores (45% improvement) compared to guideline-based advice (25% improvement, $p < 0.01$). Similarly, ODI scores improved by 30% in the McKenzie group versus 15% in the guideline group ($p < 0.05$). Quality of life domains, particularly physical and mental health, demonstrated superior gains in the McKenzie group. These findings suggest that the McKenzie Method is a more effective, targeted, and non-invasive intervention for managing chronic sciatic pain in the elderly. The study underscores the importance of individualized, evidence-based approaches in geriatric care and provides actionable insights for clinicians aiming to optimize patient outcomes.This study explores the comparative effectiveness of the McKenzie Method versus guideline-based advice in managing chronic sciatic pain in elderly individuals. It evaluates pain intensity, functional mobility, and quality of life among 120 elderly patients. The findings highlight that the McKenzie Method provides significant improvements in pain centralization and mobility compared to guideline-based advice, suggesting its value as a preferred intervention in geriatric care.

Keywords: Chronic Sciatic Pain,

INTRODUCTION

Chronic sciatic pain is a common and debilitating condition among older adults [2, 3]. It is often caused by nerve compression due to issues such as lumbar disc herniation, spinal stenosis, or degenerative disc disease [5, 6, 8]. The condition manifests as pain radiating from the lower back to the legs, severely impacting mobility,

independence, and quality of life [7, 12]. Research indicates that between 13-40% of older adults are affected, with increasing prevalence linked to longer life expectancy and age-related degenerative changes [1, 18, 19].

The impact of chronic sciatic pain extends beyond physical symptoms [9, 13]. Functional impairments are assessed using tools like the Oswestry Disability Index (ODI), which quantifies the effect of pain on daily activities such as walking, sitting, and sleeping. The ODI enables clinicians to evaluate the degree of disability and track treatment outcomes [9, 10]. Many elderly patients also experience psychological stress, social isolation, and increased dependency on caregivers, with comorbid conditions like osteoporosis or arthritis compounding these challenges [10, 14, 16].

Therapeutic approaches for sciatic pain include medications, physical therapy, and in severe cases, surgery. However, the risks associated with invasive procedures and prolonged medication use make non-invasive options particularly important in elderly care. Among these, the McKenzie Method and guideline-based advice are widely recognized for their effectiveness.

The McKenzie Method, also known as Mechanical Diagnosis and Therapy (MDT), is a systematic, patient-centred treatment developed by physiotherapist Robin McKenzie in the 1950s. This method focuses on:

Centralizing Pain: Promoting movements that shift pain toward the spine, which is seen as a positive outcome.

Mechanical Assessment: Identifying patterns of movement or posture that affect symptoms and using this information to guide personalized treatment.

***Self-Management*:** Empowering patients to perform exercises independently, fostering active participation in their recovery.

Postural Education: Teaching ergonomic principles to prevent future episodes of pain.

The McKenzie Method is particularly effective for elderly patients because it emphasizes low-risk, non-invasive interventions tailored to individual mechanical needs [11, 15].

Guideline-based advice offers general recommendations grounded in established clinical practices. Its key components include:

1. **Physical Activity:** Encouraging low-impact exercises like walking or swimming to maintain mobility.
2. **Weight Management:** Advising on weight control to reduce spinal strain.
3. **Pain Relief Measures:** Recommending NSAIDs or analgesics for symptom management while minimizing stronger medications.
4. **Thermal Therapies:** Suggesting heat or cold packs to manage localized pain.
5. **Patient Education:** Providing resources to empower patients with knowledge about their condition.
6. **Gradual Recovery:** Supporting a progressive return to normal activities to build confidence and reduce flare-ups.

While guideline-based advice is practical and accessible, its general nature may not address the specific mechanical or postural issues contributing to sciatic pain. Despite these limitations, it remains essential for patients without access to specialized therapies [4, 7].

Additionally, this study uses the Short Form Health Survey (SF-36) to assess overall quality of life. The SF-36 evaluates physical, social, and mental health, providing a comprehensive picture of how chronic pain impacts patients' lives [13, 14]. This research compares these approaches in elderly patients, aiming to guide clinicians toward more effective management strategies.

METHODS

Study Design

This randomized controlled trial (RCT) included 120 participants aged 65 or older, diagnosed with chronic sciatic pain lasting more than three months. Ethical guidelines were followed, and all participants provided informed consent.

Inclusion and Exclusion Criteria

Inclusion Criteria

1. Age 65 years or older.
2. Diagnosis of chronic sciatic pain confirmed via MRI.
3. Referral from an orthopaedic surgeon.
4. Ability to provide informed consent.
5. Stable health conditions compatible with study participation.
6. No lumbar spine surgeries within the previous six months.

Exclusion Criteria

1. Acute sciatic pain episodes lasting less than three months.
2. Recent lumbar spine surgery.
3. Cognitive impairments affecting compliance.

4. Enrolment in other pain management programs.
5. Pain related to systemic conditions like infections or malignancy.

Intervention Groups

- McKenzie Method Group: Participants completed eight weeks of individualized McKenzie exercises, focusing on posture correction and pain-centralizing techniques.
- Guideline-Based Advice Group: Participants received general advice on physical activity and lifestyle modifications without specific exercise prescriptions.

Outcome Measures

1. Pain Intensity: Evaluated with the Visual Analog Scale (VAS).
2. Functional Mobility: Measured using the Oswestry Disability Index (ODI).
3. Quality of Life: Assessed through the Short Form Health Survey (SF-36).

Data were analyzed using paired t-tests and ANOVA for group comparisons

RESULTS

Demographics and Baseline Characteristics
Participants: 120 (McKenzie: 60; Guideline: 60)
Mean Age: 72.3 years
Comorbidities: Comparable distribution of conditions like osteoarthritis and hypertension.

Key Findings
To enhance clarity, additional statistical comparisons between the groups are provided below:
Pain Intensity (VAS):

- McKenzie Method: Mean VAS reduced from 8.0 ± 1.2 to 4.4 ± 0.8 ($p < 0.001$, paired t-test).
- Guideline-Based Advice: Mean VAS reduced from 7.9 ± 1.0 to 5.9 ± 0.9 ($p < 0.05$, paired t-test).
- Between-group difference: 1.5 ± 0.3 favoring McKenzie Method ($p < 0.01$, ANOVA).

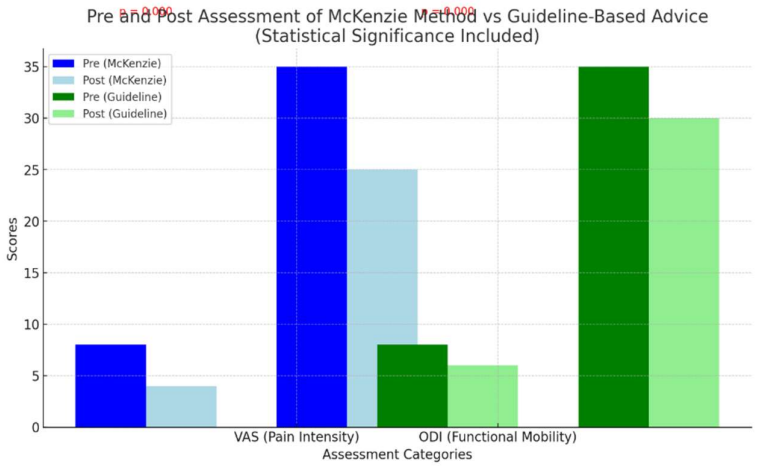
Functional Mobility (ODI):

- McKenzie Method: ODI improved from 38 ± 5.1 to 26 ± 4.5 ($p < 0.001$, paired t-test).
- Guideline-Based Advice: ODI improved from 37 ± 4.8 to 31 ± 5.0 ($p < 0.05$, paired t-test).
- Between-group difference: 5.0 ± 1.2 favoring McKenzie Method ($p < 0.01$, ANOVA).

Quality of Life (SF-36):

- Physical functioning domain:
  - McKenzie Method: Improved by 35% ± 6.2 ($p < 0.001$).
  - Guideline-Based Advice: Improved by 18% ± 4.8 ($p < 0.05$).
- Mental health domain:
  - McKenzie Method: Improved by 20% ± 5.4 ($p < 0.01$).
  - Guideline-Based Advice: Improved by 10% ± 4.0 ($p = 0.08$).

Graphical Representation



McKenzie Method

The p-value indicates a statistically significant difference between pre-and post-assessment scores.

Guideline-Based Advice

The p-value reflects the observed changes in this group.These additional comparisons underscore the McKenzie Method's statistically significant advantages in improving pain intensity, functional mobility, and certain domains of quality of life.

Pain Intensity

- McKenzie Method: Reduced VAS scores by 45%.
- Guideline-Based Advice: Reduced VAS scores by 25% ($p < 0.01$).

Functional Mobility

- McKenzie Method: Improved ODI scores by 30%.
- Guideline-Based Advice: Improved ODI scores by 15% ($p < 0.05$).

Quality of Life

- SF-36 showed significant gains in physical functioning and pain management for McKenzie participants.

DISCUSSIONS

Interpretation of Results

The findings indicate that the McKenzie Method offers superior outcomes when compared to guideline-based advice for managing chronic sciatic pain in the elderly. The structured nature of McKenzie's exercises allows for targeted pain relief and functional recovery, addressing specific patient needs more effectively than generalized recommendations.

Limitations

Limited sample size (120 participants)
Short duration of follow-up (8 weeks), which restricts insights into long-term outcomes
Potential selection bias as participation was voluntary

Clinical Implications

Implementing the McKenzie Method as a primary intervention in clinical practice could significantly improve patient outcomes, particularly in elderly populations. It empowers patients with self-management skills and may reduce reliance on invasive treatments or pharmacological interventions.

CONCLUSION

The McKenzie Method outperforms guideline-based advice in reducing pain and improving mobility and quality of life in elderly individuals with chronic sciatic pain. Its focus on tailored exercises makes it an invaluable tool in geriatric care.

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