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Effects of Mckenzie Exercise On Chronic Lower Back Pain : A Review

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Abstract

Objective: The purpose of this review was to evaluate the efficacy of McKenzie exercise inchronic lower back pain.

Method: Two electronic databases (PubMed/Google scholar) were searched to identify studies on effects of McKenzie exercise in chronic low back pain. Eligible studies were published in the English language between 2003 and 2022. Primary outcome measures wereback pain intensity and back disability. Secondary outcome measures were quality of life (QOL), range of motion of trunk and physical performance.

Results: There were eight studies considered (three randomised controlled trials, one prospective Cohort research, one Preliminary study, Cross sectional, Clinical prospective manipulatively study and one quasi experimental trial on 32 patients with lower back pain (chronic back pain, mechanical back pain, and chronic nonspecific low back pain) and McKenzie exercise). Almost all research found that patients suffering from lower back pain improved significantly. McKenzie exercise had a favourable effect on lower back pain intensity, trunk disability, QOL, trunk ROM, and physical performance, according to the findings. McKenzie physiotherapy intervention has been demonstrated to lessen the severityof back pain [$p < 0.01$ or 0.05].

Conclusion: McKenzie was discovered to have a considerable impact on the severity of back pain and enhance trunk range of motion, improve physical performance and improve quality of life. It could be an effective treatment for back pain. To reach definite conclusions, additional study is required.

Keywords: Chronic Low Back Pain, Mckenzie Technique, Low Back Pain, LumbarSpondylitis.

Introduction

One of the most frequent conditions is low back pain causing discomfort in theupper thighs as well as the lumbosacral spinal and paraspinal regions.[1]Low back pain is a serious health issue with significant socioeconomic repercussions that is linked to high costs, absenteeism from work, and disability.

Depending on the population being investigated and how a low back pain episode is defined, estimates of the prevalence of low back pain might vary greatly. low back pain prevalence ranges from 12 to 33% at a single moment in time, from 22 to 65% over the course of a year,and from 11 to 84% throughout the course of a person's lifetime .[2]

It may begin with trauma and deteriorate as a result of deconditioning, psychotic disorders, other chronic illnesses, and inheritance.[3] Only 15% of LBP has a definite aetiology, with the other 85% being non- specific LBP.[4]LBP prevalence ranges from 6.8% to 33% in affluent nations such as the United States, United Kingdom, Canada, Denmark, Sweden, and Belgium.[5]In India, the prevalence ranges between 42% and 83%.[4]Individuals suffering from mechanical spine diseases.

The objectives of physiotherapy in individuals with chronic LBP include pain relief, regainin g lost range of motion, functional improvement, and quality of life enhancement. These goals are accomplished by a variety of exercise, manipulation, massage, relaxation treatments, and counselling regimens.[6]

The McKenzie procedure is a popular treatment alternative.[7,8] These motions can be performedin a number of positions, such as standing, sitting, or reclining.[9]This approach is focused on sustained postures or repeated movements. Although McKenzie exercises could improve painintensity in acute low back pain, sub-acute low back pain and chronic low back pain. The McKenzie Method of Mechanical Diagnosis and Therapy (MDT) is a well-studied classification system. This assessment and treatment model has demonstrated good inter- examiner reliability when classifying patients with LBP. However, evidence of its treatment effectiveness continues to be challenged. The MDT was designed to classify patients into 3 mechanical subgroups (derangement, dysfunction, or postural syndrome) or an- other subgroup, by which to direct treatment.[10,11].

Need of the Study

The current investigation on the impact of McKenzie exercise on chronic lower back pain takes into account recent publications through 2022. Our review study is unique in that it is entirely based on recent studies till 2022 that demonstrate McKenzie's medium- and long-term efficacy on chronic lower back pain, together with regular physical therapy whereas other reviews incorporated studies up to 2016.

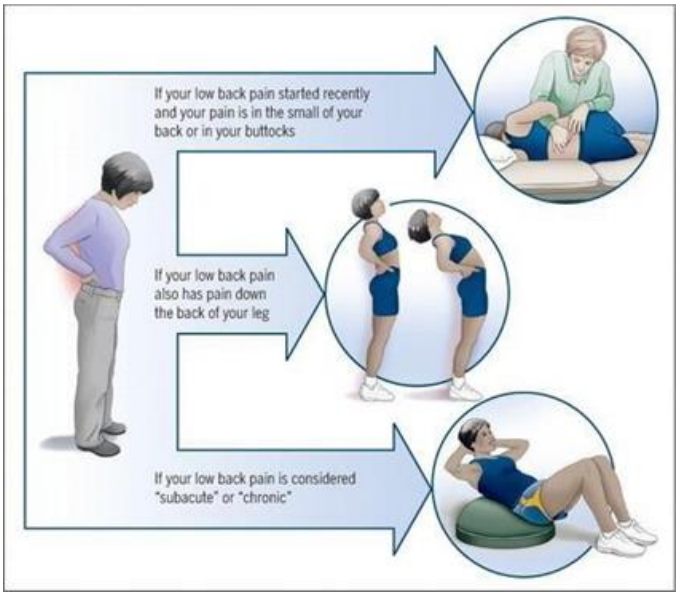

Fig: 1: Low Back Pain (Ref: Physiopaedia)

Method

Two electronic databases (PubMed/Google scholar) were searched to identify studies on effects of McKenzie exercise in chronic low back pain. Eight studies were included in the review. Eligible studies were published in

the English language between 2003 and2022. Primary outcome measures were back pain intensity and back disability. Secondary outcome measures were quality of life (QOL), range of motion of trunk and physical performance. Fullarticles were reviewed to determine whether they met the selection criteria. Search terms were 'low back pain 'chronic low back pain' mechanical low back pain' 'McKenzie exercise or McKenzie technique. Figure 1 depicts the literature retrieval method and major features of eligible research.

Eligible studies included randomized controlled trials (RCTs), quasi-experimental trials,Prospective cohort study, Clinical prospective manipulatively study, Cross sectional and Preliminary study on any form or type of McKenzie intervention for lower back pain.

Inclusion criteria

Patients between the ages of 40 and 65 who had experienced low back pain for more thanthree months and did not have a specific disease or previous surgery made up the study's population.

Exclusion criteria

The following conditions were excluded from the study low back arch, or "army back," serious spinal pathology such as tumors, fractures, and inflammatory diseases prior spinal surgery, compromise of the nerve roots in the lumbar region, spondylosis or spondylolisthesis, spinal stenosis, neurological disorders, systemic illnesses and cardiovascular diseases.

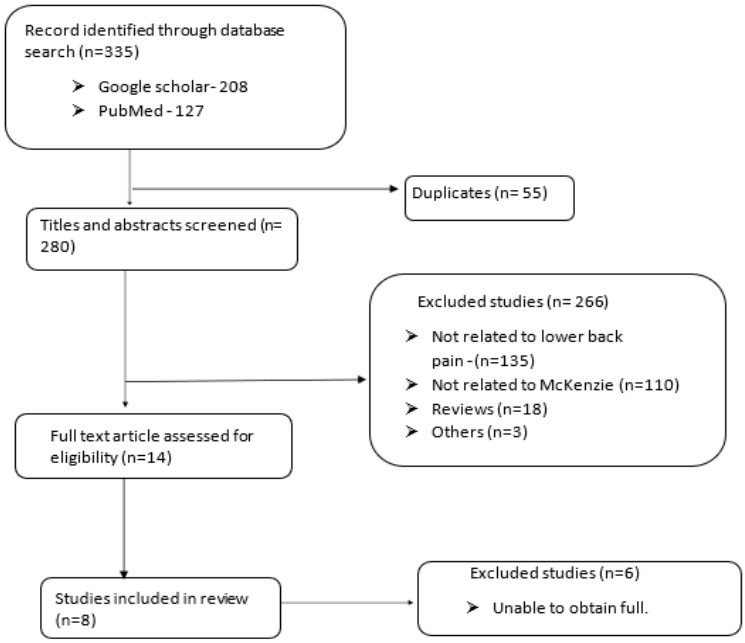

Figure 2: Flow diagram of eligible studies

Results

Three hundred three five studies were found in relation to the search terms: 127 in PubMed and 208 in Google scholar. Out of the 335 studies, 55 were deleted because they were duplicates, and 280 titles and abstracts were reviewed. Following title retrieval, 266 research were removed because they were either unrelated to McKenzie low back pain or

were review articles. This evaluation covered the remaining 8 qualified trials, totaling 436 patients. Table 1 depicts key criteria of qualifying research. all of these trials target people that have chronic nonspecific low back pain.

McKenzie exercise had a median length of four weeks with a median frequency of four days in a week. The outcome measures in all of the studies used for this review are the same (pain intensity and functional impairment, physical performance). However, the result measurementinstruments varies for example Visual Analogue Scale (VAS) and (NRS). Almost all studies found that McKenzie exercise improved lower back pain intensity, trunk impairment, trunk ROM, anxiety, and quality of life. The findings of this study are consistent with earlier reviews and meta-analyses on the efficacy of McKenzie exercise on lower back pain.

Table 1: Characteristics of Eligible studies:

Author ,year	Region	Design	Sample size mean age in year)	Type of lower back pain	Comparison	Programlength	Outcome measure	Result/conclusion
Garcia[12] 2013 et al.	Unitedstates	2 arm randomized controlled trail	148	Chronic lower back pain	Back school + McKenzie technique	4 days once week (Upto1 month)	-VAS - Oswetry back disabilityquestionnaire -Goniometry	Chronic lower back discomfort was significantly reduced with the McKenzie technique. p<0.05)
Saud M.AL obaidi[13] 2011 et al.	New York	Prospective cohort study	62	Chronic lower back pain	McKenzie exercise +posture correction +lumbar mobilizati on	4 weeks	- Numerical rating scale - Oswetry back disabilityquestionnaire	McKenzie intervention was found to be effective in managing pain as well as influencing the related fear and disability belief with chronic lower back pain. P< 0.01
Malgorz ata waszak[1] [4], 2015 et al.	Poland	Randomized study	60(44)	ChronicLBP	McKenzie exercise + muscle energy techniques	10 days	electro goniometric determination of the movement in all spinal segment and angular values of physiological contracture	The combined method can be effectively used in the treatment of chronic lower back pain. P < 0.01

Conclusion

According to the findings of this study, the McKenzie method improves pain and range of motion in chronic low back pain. This strategy outperforms functional abilities and physical performance. Clinically, it is critical to restore adequate functional capacities following chronic low back pain. The McKenzie approach aids in enhancing the patient's quality of life.the study concludes that there is a substantial difference in McKenzie method patients with chronic low back pain. After going through the McKenzie exercises, the patients got relieved from their back pain within 3 weeks.

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