Original Article

Positional Release Therapy And Its Application In Various Musculoskeletal Conditions: A Review Of Literature

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DOI: 10.47750/pnr.2022.13.S08.450

Abstract

Introduction: Positional release is a type of manual therapy that can be used effectively in treating pain and disability that is associated with musculoskeletal conditions. This review's goal is to provide an overview of positional release therapy (PRT) and how it can be used to treat various musculoskeletal conditions.

Materials and Methods: The data source of this literature review was done by a comprehensive search of already published relevant articles from various medical databases. All studies where the positional release method of treatment was used as an intervention in treating musculoskeletal conditions were included. 21 articles in all were obtained from the electronic databases, of which 6 articles were selected to be included in this review.

Conclusion: PRT is demonstrated to be an effective intervention in treating various musculoskeletal conditions like neck pain, low back pain, hamstring tightness, and ankle sprain.

Keywords: Manual therapy, Strain Counterstrain, Musculoskeletal Pain, Positional release.

INTRODUCTION

In all socio-demographic tiers of society, men and women of all ages frequently suffer from musculoskeletal conditions.[1] They have an impact on countless millions of individuals globally and these are the most common causes of severe, ongoing pain and physical impairment.[1] They have an impact on every element of life through discomfort and by restricting daily tasks, usually by impairing dexterity, movement, and general level of functioning.[1] Age significantly increases the prevalence of many of these disorders, and many of them are influenced by lifestyle choices like obesity and inactivity.[1] Therefore, it is anticipated that these disorders would become more prevalent, especially in emerging nations.[1] Physical therapy is a common non-pharmacological treatment option recommended by doctors for people with musculoskeletal conditions.[2] It's worth noting that physiotherapists deliver a variety of non -pharmacological therapies, like exercises and manual therapy are recommended in guidelines for treating musculoskeletal conditions.[2]

Manual therapy has been employed to improve the range of motion, minimize local ischemia, dissolve fibrous adhesions, stimulate proprioception, increase synovial fluid production, and relieve pain.[3] Numerous manipulative methods exist, including massage, soft tissue mobilization, craniosacral techniques, visceral mobilization, joint mobilization, joint manipulation, neural tissue mobilization, myofascial release, and strain-counterstrain technique (SCS).[4] PRT is one such underappreciated approach that physiotherapists can utilize to address musculoskeletal conditions. During therapy, the muscles are positioned in the most comfortable position, resulting in tissue relaxation, improved vascular flow, and the elimination of inflammatory chemical mediators.[5]

PRT, also referred to by its antecedent, SCS, is an indirect, passive technique of total body evaluation and treatment using tender points (TP) and a position of comfort (POC) to relieve pain or discomfort and the associated visceral and musculoskeletal dysfunction.[5-8] The body is put up in a comfortable position while the tender point serves as guidance.[9] The muscle is typically at its shortest length in this minimally uncomfortable position. After holding the posture for 90 sec, the joint is slowly and passively brought back to its neutral position. Both the intrafusal and extrafusal fibers are shortened as a result of the sustained shortening of the muscle. These modifications bring about a marked improvement in function range of motion and a reduction in pain.[6] Through this comfortable stance, the tissue subsequently relaxes, which improves vascular circulation and gets rid of the chemical mediators of inflammation. PRT could thereby reverse

the central and peripheral sensitization. This method may also directly lessen central sensitization by dampening the effect on the spinal cord's facilitated segment.[10] This technique is utilized as an alternative to other techniques for treating somatic dysfunction that is either too acute or too delicate to treat.[11] In comparison to other manual therapy procedures like therapeutic massage, treatment utilizing PRT significantly decreases deep muscular tissue sensitivity, and maintains the changes in pain and muscle sensitivity.[12-13] PRT is also an excellent therapy for immediate and lasting reduction of the tonic tissue constraints often found in such neurologically based conditions as brachial plexus neuritis. By lowering the persistent stretch reflex through muscle spindle manipulation, which may lessen the spindle's sensitivity and reduce muscle contraction and general neurologic upregulation, may be the ideal treatment for neuroinflammatory diseases.[14] This way the neurological system can also be controlled to stop the pain spasm cycle and progressively restore tissue resting length to a "normal" range, promoting increases in strength, performance, and function through spontaneous pain resolution, hypertonicity, and restriction.[7,15] The therapy is painless and suitable for people of all ages and the majority of painful conditions.[5,15,16]

PRT's primary goal is to create a healing environment that is conducive to addressing musculoskeletal abnormalities, allowing the body to self-correct by facilitating tissue regeneration, growth, and repair.[15]
This literature review's main objective is to provide a general overview of positional release therapy and how it can be used to treat a variety of musculoskeletal conditions.

MATERIALS AND METHODS

From the year 2007 to April 2022, several literature searches were performed. PubMed, Cumulated Index Nursing and Allied Health Literature (CINAHL), Science Direct, Google Scholar, and the Cochrane library were employed to conduct an electronic search of articles. The following keywords were used such as Positional Release, Strain-Counterstrain, Manual Therapy, Musculoskeletal Conditions, Soft Tissue, Tender Point, and Trigger Point. There were 21 articles found due to the search, of which six were deemed pertinent by the selection criteria. The PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) flowchart was used for the identification of studies via databases in the initial phase as shown in Figure 1.

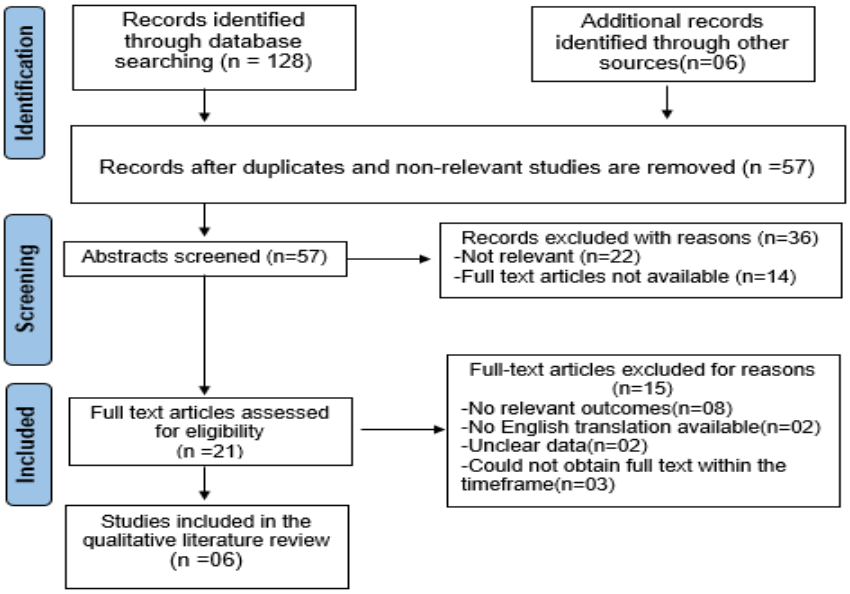

Figure 1: PRISMA flow diagram: study selection for review.

Inclusion criteria

Studies where randomized controlled trials (RCT) were conducted.[17-21]
Only full-text versions of English articles are accessible.
Studies with human subjects.
In studies where positional release therapy was used as an intervention.
Studies with participants who had musculoskeletal disorders.

Exclusion criteria

Research on populations that do not have any musculoskeletal disorders.

DISCUSSION

The present study was steered to investigate whether PRT displays a positive result by relieving the addressed musculoskeletal conditions.
PRT has been linked to decreased pain or palpation tenderness, according to several studies.[17] Pathan *et al*.'s randomized controlled experiment had subjects with upper trapezius myofascial trigger points received PRT and manual trigger point

release (MTpR).[17] During four therapy sessions, both groups displayed significant pain relief and improvement in the cervical range of motion, however, MTpR was comparatively more effective in those participants.[17]
The findings of this research indicated that PRT treatments may be a game changer in the treatment of patients with neck discomfort, upper trapezitis, and persistent neck pain.[17] To test the interventional effects, neck strengthening exercises and muscle energy procedures can be utilized in association with PRT.[17]

Several studies suggest PRT is quite effective in reducing low back pain (LBP).[18] Subjects with acute cases of LBP were randomly assigned to muscle energy technique (MET) or SCS groups in the study by Patel *et al*. and had treatment sessions of 2 days.[18] After the initial therapy session itself, it had an immediate impact on pain intensity and both groups showed improvement in ROM and disability after the second session.[18] But when both study groups were compared, in patients with acute LBP, the SCS approach did not further reduce pain and disability or increase lumbar range of motion.[18]

Collins *et al*. conducted an RCT study on the effect of SCS in treating chronic ankle instability (CAI) with 36 participants who had a history of lateral ankle sprain and CAI.[19] The tentative conclusions of the study support the theories that the treatment may improve the dynamic balance and stability in CAI patients but fails to support the hypotheses that SCS improves subjective ankle function in people with CAI.[19]

But in another study on the effect of integrated neuromuscular inhibition technique (INIT) and PRT in treating piriformis syndrome by Danazumi *et al*., participants found INIT more effective than PRT.[20] And we must also focus that employing stretching exercises as adjunct therapy might have contributed to the remarkable improvement in both groups.[20]
Kothawale *et al*. carried out research to determine the efficacy of active release and positional release on hamstring tightness; where they concluded that the active release technique is quicker than positional release therapy in relieving hamstring tightness.[21]

In order to measure changes inside trigger points, Bethers *et al.* conducted a study with the goal to determine how well a 5-min treatment of PRT or therapeutic massage (TM) reduced pain, trigger point tenderness, and muscle stiffness in the upper trapezius muscle.[12] In their review, they found that both treatments dramatically reduced pain, improved muscle thickness, and lowered muscular stiffness.[12] Despite the absence of statistical group differences, PRT treatment reduced pressure sensitivity and pain levels both immediately after the procedure and 48 hours later.[12]
However, PRT was able to maintain pain and pain pressure threshold (PPT) alterations better than TM.[12] Male muscle stiffness can only be reduced by TM and PRT in short-term situations, and results shouldn't be anticipated to persist longer than two days.[12]

By reviewing and studying these studies, we are aware of the fact we have enough evidence to support the fact that the positional release technique is effective in treating various musculoskeletal conditions. But treatment techniques like myofascial trigger point release, MET, INIT, and active release techniques tend to be more effective than PRT. Strengthening exercises, myofascial induction therapy, ischemic compression, and other physiotherapy interventions can be incorporated along with PRT to get a better and faster result.
The PEDro (Physiotherapy Evidence Data Base) scale was then applied to the chosen articles to assert the quality of the articles, which ranges from 0 to 11 overall. The summary of the utilized articles along with the PEDro scores is given in Table 1.

Table 1: Summary of literature review.

Study	Level of evidence	Participants	Methodology	Conclusion	PEDro Scale
Pathan *et al*. (2021)[17]	Level 2a	65 office workers with upper trapezius myofascial trigger points, aged 18 to 35, were of both sexes.	Thirty participants from a total of 60 were split into two groups at random: Group B received MTpR for the upper trapezius muscle, whereas Group A received PRT. For four days, they had four treatment sessions each.	After four sessions of therapy, both groups (PRT and MTpR) showed improvements in range of motion on the CROM and pain intensity on the NPRS, although MTpR proved to be more effective in these patients.	10-excellent
Danazumi *et al*. (2021)[20]	Level 2a	With 24 participants in each group, 48 PS patients with ages ranging from 25 to 45 were randomly allocated to one of two groups: INIT or PRT.	For eight weeks, each group attended two therapy sessions each week. At each clinical appointment, the INIT or PRT treatment was administered three times over 10 min to both groups. After the INIT or	When it came to managing people with PS, INIT outperformed PRT. It should be mentioned that the stretching exercises that were utilized by both groups as adjunct therapies may have	9-excellent

			PRT therapy session, stretching exercises were given to each group as well.	also contributed to the remarkable improvement seen in both groups.	
Patel *et al.* (2018)[18]	Level 2a	50 patients, ranging in age from 18 to 65.	In this study, 50 patients were divided into the MET or MET-SCS groups at random, and they had the prescribed two therapy sessions for two days.	In both groups, improvements in pain, range of motion, and impairment were noticed following the second treatment session, however, only the intensity of the pain was immediately affected.	9-excellent
Collins *et al.* (2014)[19]	Level 2a	With a background in lateral ankle sprain (LAS) and a self-reported chronic ankle instability (CAI), 36 participants participated.	After the baseline assessment, participants were randomized to either the sham SCS group (SG) (n=14) or the SCS experimental group (EG) (n=13). Each participant followed a prescribed workout program for four weeks and once a week, the prescribed therapy was received.	As a result, the preliminary study results are consistent with the predictions that SCS treatment may enhance the subjective sense of stability (GROC) and dynamic balance (SEBT) in CAI patients. The claims that SCS can enhance the subjective ankle function in CAI sufferers were not proven correct by this investigation.	9-excellent
Kothawale *et al.* (2018)[21]	Level 2a	With a total of 60 persons, four groups of people with tight hamstrings who met the inclusion and exclusion criteria were created at random, with 28 people in the ART group and 39 people in the PRT group.	Groups A and B were designated as PRT and ART, respectively. A universal goniometer and measuring scale were used to gauge the success of the technique using the pre-and post-intervention Active Knee Extension (AKE) and Sit and Reach tests.	Hamstring tension can be rapidly reduced with the Active Release Technique, an efficient physiotherapeutic intervention.	8-good
Bethers *et al.* (2021)[12]	Level 2a	Sixty healthy volunteers, 24 men, and 36 women, (age = 27.1 ± 8.8 years, weight = 75.2 ± 17.9 kg, height = 172.8 ± 9.7 cm) who had upper trapezius pain and a trigger point were randomly assigned to the TM or PRT group.	Upper trapezius trigger sites were identified via palpation after being enrolled and randomly assigned to either the TM or PRT group. VAS and pressure gauges were used to measure the intensity of the pain and the pain pressure threshold, respectively. B-mode ultrasonography was used to evaluate the thickness of the muscles, and shear-wave elastography (SWE) was used to assess the stiffness of the muscles. Participants were evaluated at baseline, after therapy, and once more 48 hours later.	Pain and muscular stiffness were markedly and instantly decreased with both treatments. Despite not being statistically different, PRT is more clinically effective at reducing pain and pressure sensitivity. Both forms of treatment failed to reduce male patients' muscle stiffness over the long term.	10-excellent

CONCLUSION

Due to the prominence of other popular manual therapy techniques among practitioners, PRT, in a way, is masked. We are mindful of the fact that PRT can produce dramatic and profound outcomes even though it appears to be simple on the surface. PRT can be utilized as a stand-alone method or as an adjunct by the therapist. It is extremely beneficial and relevant in cases of stiff or spasmodic muscles that are still defending against a previous trauma. It is a great addition to manual therapy because it enables the therapist to unwind tissue before manipulating it, which reduces pain and increases treatment effectiveness while lengthening the duration of the therapeutic effects. It's been reported in numerous studies that PRT is effective in reducing pain and muscle tension in various musculoskeletal conditions. Better mobility, flexibility, and range of motion will also inevitably result in better posture. Increased circulation may be the outcome, which aids in the repair of damaged tissue. More research can be done so that practitioners are aware of its efficacy. By adding other physiotherapy strategies into PRT, the outcome can be more favorable and sooner.

ACKNOWLEDGEMENT

The authors want to thank the NITTE (deemed to be) University for giving encouragement to do the research.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

LIST OF ABREVIATIONS

PRT	Positional release therapy
SCS	Strain- counterstrain
TP	Tender point
POC	Position of comfort
CINAHL	Cumulated Index Nursing and Allied Health Literature
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses
MTpR	Manual trigger point release
LBP	Low back pain
MET	Muscle energy technique
CAI	Chronic ankle instability
INIT	Integrated neuromuscular inhibition technique
TM	Therapeutic massage
PPT	Pain pressure threshold
PEDro	Physiotherapy evidence database
PS	Piriformis syndrome
LAS	Lateral ankle sprain
GROC	Global rating of change
SEBT	Star excursion balance test
ART	Active release technique
AKT	Active knee extension
VAS	Visual analog scale
SWE	Shear-wave elastography

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