ORIGINAL RESEARCH PAPER
Volume - 9 | Issue - 10 | October - 2020 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

# A COMPARATIVE STUDY BETWEEN CYRIAX MOBILIZATION AND MYOFASCIAL RELEASE TECHNIQUE ALONG WITH CRYOTHERAPY IN THE TREATMENT OF DE QUERVAIN'S DISEASE IN THE DENTAL POPULATION.

Physiotherapy

**Harshada Kapadia*** Intern, Dr, A.P.J Abdul Kalam College Of Physiotherapy, Pims-Du, Loni, India.*Corresponding Author

**Dr. Mahendra Shende** Asst. Prof Dr, A.P.J Abdul Kalam College Of Physiotherapy, Pims-Du, Loni, India.

## ABSTRACT

**BACKGROUND:** De Quervain's Disease is mainly named after the Swiss surgeon Fritz de Quervain who first identified this disease in 1895. It is an inflammation or a tendinosis of the sheath or tunnel that surrounds two tendons that control movement of the thumb. This disease is mainly characterized by pain on the inside of the wrist and forearm just above the thumb. The prevalence of this disease in the dental population is often due to the forceful, sustained, repetitive movements. Symptoms of this diseases is pain, swelling on the side of the thumb and tenderness. **AIM:** The present study was taken for comparison between the effect of Cyriax Mobilization and Myofascial Release Technique along with Cryotherapy in the treatment of De Quervain's Disease in the Dental Population **METHOD:** The study was a comparative study where effect of Cyriax Mobilization along with Cryotherapy was given to the Group A and the Myofascial Release Technique along with Cryotherapy was given to the Group B. The patients were taken in the age range of 18-26 years. The patients were randomly allocated to either of the two groups, based on the inclusion. Pre-intervention scores were taken and intervention was given for 10 minutes, over a span of 4 days per week for four weeks and then post-intervention assessment was done and their scores noted. There was a 3 day gap between the two treatment sessions. In total there were 36 samples were taken and the pre and post outcome measures were taken ie. Pain Scale (NPRS) and Finkelstein test was done, and the results were analysed using paired t-test and unpaired t-test. **RESULT:** There was statistically significant improvement in the Finkelstein test and pain in the patients treated with Cyriax Mobilization and Myofascial Release technique along with Cryotherapy. The pre and post interventional scores of Group A and Group B was taken and the results were extremely significant (p=0.0001).**CONCLUSION:** The study concluded that Cyriax Mobilization and Myofascial Release Technique along with cryotherapy are equally effective in patients of De Quervain's Disease in the dental population.

## KEYWORDS

Cyriax Mobilization, Myofascial Release Technique, De Quervain's Disease, Cryotherapy.

## INTRODUCTION: De Quervain's Disease

De Quervain's Disease is named after the Swiss surgeon Fritz de Quervain's who first identified this disease in 1895. It is an inflammation or a tendinosis of the sheath or tunnel that surrounds two tendons that control movement of the thumb. This disease is mainly characterized by pain on the inside of the wrist and forearm just above the thumb. This disease is also known as "radial styloid tenosynovitis", "de quervain's tenosynovitis", "de quervain's stenosing tenosynovitis", "stenosing tenovaginitis", and "mother's wrist". This condition is commonly associated with the repetitive use or overuse of the thumb or hand but occasionally acute trauma is the precipitant. Exact cause is still unknown but it is believed to be due to overuse. Overuse in the form of activities like pinching, typing, washing clothes, wringing clothes, carrying heavy objects, gardening. The tendons of abductor pollicis brevis and extensor pollicis brevis move in the same synovial sheath that passes in the bony groove over the styloid process and the pathological changes taking place because of the friction is thickening of the tendons, tendon sheath, and increased vascularity of the sheath, inflammatory reaction and hair like adhesions. It can occur at any age but most commonly takes place during 30-50 years. It is most commonly found in the female population. Localized swelling along the tunnel near the edge of the wrist. Localized tenderness over the first dorsal compartment is present.

### Cyriax Mobilization

Mobilization is a manual technique that through repeated passive motion at low speed replicates normal joint glides at varying amplitudes. James Cyriax (1904-1985) was born in London, England, the son of Edgar and Annyuta Kellgren, who were both physicians. Cyriax qualified to practice medicine in 1928 after attending University College School in Gonville, Caius College in Cambridge, and St. Thomas Medical College in London. He commenced his practice at St. Thomas Hospital in 1929. sCyriax concluded that the discipline of orthopaedic medicine lacked a well-developed system for diagnosis of such disorders as tendinosis, ligamentous sprains, and capsulitis.

### Cryotherapy

The use of cold or cryotherapy for medicinal purposes in the form of ice has been used since the time of Hippocrates. In osteopathic the application of ice were used in the patients who were presenting the musculoskeletal injury. It decreases tissue blood flow by causing vasoconstriction, reduces tissue metabolism, oxygen utilization, inflammation and muscle spasm. Common methods of cold application are ice pack, vapo-coolant spray, ice massage.[ By application of cold pack reduces temperature to a depth of 2 to 4 cm, which reduces activation of nociceptors and painful is that of the "release" phenomenon. This concept is shared with other forms of manual medicine; particularly the cranio sacral technique and the ease bind principle of nerve conduction velocity. It is commonly used as a procedure to relieve pain symptoms, particularly in the inflammatory diseases, injuries, and overuse symptoms.

### Myofascial Release Technique

Myofascial Release Therapy can be defined as "the facilitation of mechanical, neural and psycho physiological adaptive potential as interfaced by the myofascial system". Myofascial release is a collection of techniques used for the purpose of relieving soft tissue from an abnormal hold of a tight fascia. Myofascial release (MFR) refers to the manual massage technique for stretching the fascia and releasing bonds between fascia and, muscles, with the goal of eliminating pain, increasing range of motion and balancing the body. The fascia is manipulated, directly or indirectly, allowing the connective tissue fibers to reorganize themselves in to a more flexible, functional fashion. The purpose of the Myofascial release is to release restrictions (barriers) within the deeper layers of fascia. There are three types MFR is Direct Myofascial Release, Indirect Myofascial Release, Self Myofascial Release Techniques.

### Procedure:

An approval of the study was obtained from the Institutional Ethical Committee (IEC). The study was conducted in OPD setting of Dr. APJ Abdul Kalam College of Physiotherapy. All the undergraduate interns and post graduates were screened for 'De Quervain's Disease and 36 participants were selected from the dental population with the age of 18-26 years, both males and females with de quervain,s disease willing to participate were included in the study. Participants with the history of trauma, peripheral nerve disorders and pain less than 50% were excluded from the study. Participants with more than 50% pain on pain scale, positive finkelstein test and who are willing to participate in the study were all included in the study. The 36 participants were then

assessed for outcome measures finkelstein test and on pain scale (NPRS). These 36 participants were divided into Group A and Group B. The Group A were given Cyriax Mobilization and Cryotherapy and the Group B were given Myofascial Release Technique and Cryotherapy. Both of these treatment were conducted for 20 minutes each. And this whole of the treatment protocol consists of 4 weeks and after 4 weeks the pain scale (NPRS) and finkelstein test was again. And then all the post scores were written.

**Group A : Cyriax Mobilization**

**Group B : Myofascial Release Technique**

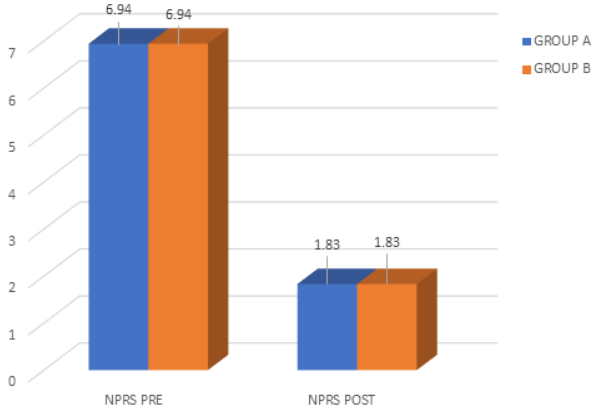
**1. DATAANALYSIS and RESULTS:**

**2.Table 1 : Mean and Standard deviation of NPRS for Cyriax Mobilization and Myofascial Release Technique before and after the treatment**

| GROUPS | NPRS PRE Mean ± SD | NPRS POST Mean ± SD | Students Paired 't' test | p value significant |
|---|---|---|---|---|
| GROUP A | 6.94±1.00 | 1.83±0.79 | 17.03 | p= 0.001 significant |
| GROUP B | 6.94±1.00 | 1.83±0.79 | 17.03 | p= 0.001 significant |

By applying the students paired t- test there was a significant decrease in the mean value of NPRS from pre and post treatment (p = 0.001) extremely significant.

**PRE and POST Mean and Standard deviation of NPRS for Cyriax Mobilization and Myofascial Release Technique before and after the treatment**




3. Pre-intervention NPRS scores (Group A) (Cyriax Mobilization and Cryotherapy) showed average (±SD) of 6.94±1.00. Group B (Myofascial Release and Cryotherapy) pre-intervention showed an average (±SD) of 6.94±1.00.
4. While post intervention data collected NPRS scores showed the average (±SD) of 1.83±0.79 for Group A (Cyriax Mobilization and Cryotherapy) and for 1.83±0.79 Group B (Myofascial Release and Cryotherapy).

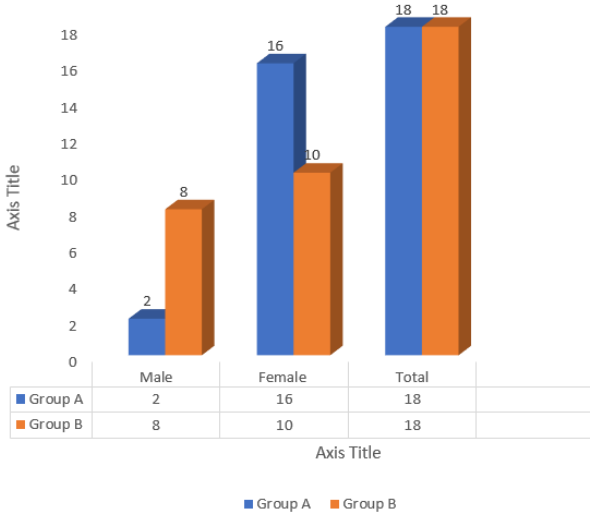
**5.Group A: Age wise distribution of participants in the treatment group of Cyriax Mobilization along with the Cryotherapy.**

| Age in years | GROUP A MALE | (CYRIAX) FEMALE | TOTAL |
|---|---|---|---|
| 18-20 | 0 | 0 | 0 |
| 20-22 | 3 | 9 | 12 |
| 22-24 | 4 | | 4 |
| 24-26 | 1 | 1 | 2 |
| TOTAL | 8 | 10 | 18 |

**6. Group B: Age wise distribution of participants in the treatment group of Myofascial Release Technique along with the Cryotherapy.**

| Age in years | GROUP B MALE | (MFR) FEMALE | TOTAL |
|---|---|---|---|
| 18-20 | 0 | 0 | 0 |
| 20-22 | 2 | 10 | 12 |
| 22-24 | | 4 | 4 |
| 24-26 | | 2 | 2 |
| TOTAL | 2 | 16 | 18 |

***Age wise distribution of participants in the treatment group of Cyriax Mobilization and Myofascial Release Technique along with the Cryotherapy***




**7. RESULT:**

The comparison of post intervention scores of all outcome measures show that both of the treatment protocols ie. Group A Cyriax Mobilization along with Cryotherapy and Group B Myofascial Release Technique along with Cryotherapy are equally effective in treating the De Quervain's Disease in the dental population.

**8. DISCUSSION:**

This study aims to determine the effects of Cyriax Mobilization along with and Myofascial Release Technique along with cryotherapy on symptoms of pain in dental population. In this study 36 patients were taken and were assessed using Finkelstein Test and Visual Analogue Scale. Either of the interventions given and their effect on pain was noted.

De Quervain's disease is mainly named after the Swiss Surgeon Fritz de quervain who has firstly indentified the disease in 1895. De Quervain's Disease is mainly defined as the inflammation or tendenosis of the sheath or tunnel that surrounds two tendons to control the movement of the thumb. [1] This disease is mainly characterized by pain on the inside of the wrist and forearm just above the thumb. Myofascial Release Technique was defined as the facilitation of mechanical, neural, and psycho, physiological adaptive potential as interfaced by the mayofascial system.[2] Cryotherapy is the common

treatment given after the Myofascial Release Technique and Cyriax Mobilization. Cryotherapy is invented since the time of Hippocrates. Cyriax Mobilization and Myofascial Release Technique along with Cryotherapy was effective in reducing the pain and increasing the range of motion. [3]

Initially during the starting of the project the topic was presented to the ethical committee and was approved by the ethical committee. Firstly the 36 samples were selected and the outcome measures were taken on the subjects ie. Pain Scale (NPRS) which rates from 0-10 in which 0 is no pain and 10 is considered as the unbearable pain and 5 is considered as the moderate amount of pain that the participant is feeling. The participant whose pain was more than 5 they were included in my project, and even finkelstein test was taken. Then these all the samples were then divided into 2 groups the one group was given Cyriax Mobilization along with the Cryotherapy. In this treatment Group A 18 subjects were taken and they were firstly the Cyriax Mobilization was given for 5-7 minutes 3 sets were given and in each set 10 glides were given and after each set is completed 3 to 5 seconds rest period was given. After the mobilization was done cryotherapy was applied to the subject and it was applied for 20 minutes. Cryotherapy is applied for 20 minutes because after the 10 minutes are over the mechanism of the body starts working and the subjects feels the cold. The other Group B was given Myofascial Release Techique along with the Cryotherapy. In this treatment protocol firstly the Myofascial Release Technique was given. In this the distraction of the thumb is done in opposite direction and the fascia is released and when the fascia is getting released it is hold for 90 seconds like this 3 sets of myofascial release is given to the subject and between each set 10 seconds release time is given. After the myofascial release is given cryotherapy is applied to the subjects because the redness must be created after releasing the fascia. Here also the cryotherapy is also applied for 20 minutes same as above. This treatment protocol was given to the subject 4 days in a week with the 3 days break in between the treatment. The treatment protocol was given for 10 minutes in day, followed by the cryotherapy applied for 20 minutes. This treatment was given on the same days to the subjects in every week.

At the beginning of the protocol the pre scores were taken of the participants present in the Group A the participants were of the age group of 18 to 26 years and their scores are Group 1 (Cyriax Mobilization and Cryotherapy) pre-intervention showed average(±SD) of 6.94±1.00. Group 2 (Myofascial Release and Cryotherapy) pre-intervention showed an average(±SD) of 6.94±1.00. While post intervention data collected showed the average (±SD) of 1.83±0.7 for Group 1 (Cyriax Mobilization and Cryotherapy) and for 1.83±0.7 Group 2 (Myofascial Release and Cryotherapy). Analysis done between Pre and Post interventional data collected in Cyriax Mobilization and Cryotherapy (group 1) ($t=17.03$, $p<0.001$) and between the Pre and Post interventional data collected in Myofascial Release and Cryotherapy ($t=17,03$, $p<0.001$) showed that there was significant difference in score. However, there was greater improvement in both the groups scores of the earlier groups. Both the groups were equally benefited by the treatment protocol given to them.

The other studies included in the ROL the myofascial release technique given in the patients with the lumbar radiculopathy were benifitted in decreasing the pain and improvement in the functional abilities. [4]

The study done by the Brian J Fama, David R Bueti conducted the study on the acute effect self-myofascial release using (foam roller) on lower extremity plyometric performance and it concluded that there were a significant decrease in pain using self-myofascial technique. [5]

## 9. CONCLUSION:

The study concluded that Cyriax Mobilization and Myofascial Release Technique along with Cryotherapy are equally effective in patients of De Quervain's Disease in the dental population.

## REFERENCES:

1. Basics of Orthopaedic Physiotherapy, Dr. Subhash Khatri, First Edition (2013).
2. Shah S, Bhalara A. Myofascial release. Inter J HealthSciRes.2012May;2 (2):69-77.
3. Chaudhary ES, Shah N, Vyas N, Khuman R, Chavda D, NambiG. Comparative study of myofascial release and cold pack in upper trapezius spasm. International Journal of Health Sciences and Research (IJHSR).2013Dec;3(12):20-7.
4. Nitsure P, Welling A. Effect of gross myofascial release of upper limb and neck on pain and function in subjects with mechanical neck pain with upper limb radiculopathy: A clinical trial. Int J Dental Med Res. 2014;1(3):8-16.
5. Fama BJ, Bueti DR. The acute effect of self-myofascial release on lower extremity plyometric performance 2011.