



ANALYZING THE EFFECTIVENESS OF DYNAMIC TAPING USING CONVENTIONAL MANAGEMENT IN TENNIS ELBOW

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ABSTRACT

Tennis elbow is one of the most widely recognized reasons for elbow and forearm pain experienced in clinical practice usually connected with safe wrist or finger augmentation and holding exercises. It is a degenerative or failed healing tendon reaction described by pain at the lateral epicondyle disturbed by opposed muscle constriction of the extensor carpi radialis brevis (ECRB), expanded nearness of fibroblasts, vascular hyperplasia and disarranged collagen in the beginning of the ECRB which is the most generally influenced structure. It is commonly a business related or sport related pain issue more often than not brought about by inordinate speedy, tedious, dreary erratic constrictions and holding exercises of the wrist. The predominant arm is ordinarily influenced, with a prevalence of 1–3% in the overall public.

Keywords:

Dynamic Taping,
Tennis Elbow



Introduction

Tennis elbow is one of the most widely recognized reasons for elbow and forearm pain experienced in clinical practice usually connected with safe wrist or finger augmentation and holding exercises. It is a degenerative or failed healing tendon reaction described by pain at the lateral epicondyle disturbed by opposed muscle constriction of the extensor carpi radialis brevis (ECRB), expanded nearness of fibroblasts, vascular hyperplasia and disarranged collagen in the beginning of the ECRB which is the most generally influenced structure. It is commonly a business related or sport related pain issue more often than not brought about by inordinate speedy, tedious, dreary erratic constrictions and holding exercises of the wrist. The predominant arm is ordinarily influenced, with a prevalence of 1–3% in the overall public.

Lateral epicondylitis is viewed as one of the painful conditions that consequences for the tendons tissue at the wrist extensor muscles beginning, which prompts capacity losing of the influenced appendage. Tennis elbow begins as a microscale tear of the wrist extensor muscles birthplace which influenced on the granulation tissue arrangement. The

influenced tendons would not have the option to do the movement also works which include wrist expansion, continued holding, forearm pronation and supination. The subsequent of this mechanical failure are comprised of tendinitis and tennis elbow side effects, for example, lateral epicondyle pain of diverting. The complexity of the tennis elbow begins following 24-72 hours which happens after not used to action, for example, rehashing wrist extension.

Tennis Elbow

'Tennis elbow' generally called 'Lateral epicondylitis' or 'Lateral epicondylalgia' are terms used to portray a myriad of symptoms about the lateral piece of the elbow joint.

Tennis elbow is a painful and incapacitating musculoskeletal condition that affects generously on society and difficulties the healthcare business. It is described by pain on direct palpation over the lateral epicondylar region of the elbow joint and pain and shortcoming with gripping exercises. Exercises that utilization the muscles that broaden the wrist (for example pouring a pitcher or gallon of milk, lifting with the palm down) are distinctively painful and Morning



firmness normally present

Tennis elbow has numerous undifferentiated from terms, including lateral elbow pain, lateral epicondylitis, paddling elbow, tendonitis of the common extensor origin (CEO), and peritendonitis of the elbow. Tennis elbow is described by pain and delicacy over the lateral epicondyle (LE) of the humerus and pain on opposed dorsi-flexion of the wrist, center finger, or both. For the motivations behind this survey, tennis elbow was confined to lateral elbow pain or lateral epicondylitis. Tennis elbow is a painful condition influencing the tendinous tissue of origins of wrist extensor muscles at the LE of the humerus, prompting loss of capacity of the influenced appendage. It can majorly affect patient's social and professional life.

Investigation into the etiology of tennis elbow has uncovered that it is principally an abuse damage that outcomes in small scale tears of the hyaline region of the extensor muscles that connect on the lateral side of the forearm. Be that as it may, pain limited on the average side of the elbow is additionally conceivable. The real analysis of tennis elbow is regularly erroneous in light of the fact that it is named tendonitis. This articulation has been contested by elbow damage specialists, who note that

tendonitis suggests aggravation of the influenced region. The most common type of tennis elbow (LE tendinosis) is a painful condition that once in a while gives any irritation. This wording echoes the conviction that this damage is degenerative instead of intense.

One of the common issues with tennis elbow is off base diagnosis. This happens in light of the fact that at any rate 43 distinct pathologies of the elbow joint have been archived. Since the pathology of the damage is seen fundamentally at the infinitesimal level, it is moderately simple to misclassify tennis elbow in the flawless human arm as bursitis, arthritis, or one of numerous different ailments.

Causes Of Tennis Elbow

Any movement that includes redundant curving of the wrist can trigger tennis elbow. This incorporates tennis and other racquet sports, swimming, golfing, turning the key, or utilizing a screwdriver, hammer, or PC. The tendon is the piece of a muscle that appends deep down. Forearm muscles join to the external bone of the elbow. Specialists are finding that tennis elbow regularly happens when a particular muscle in the forearm - the extensor carpi radialis brevis (ECRB) muscle -



is damaged. The ECRB balances out the wrist when the elbow is straight. Dreary pressure debilitates the ECRB muscle, causing infinitesimal tears in the muscle's tendon at the point where it appends to the outside of the elbow. These tears produce inflammation and pain. In light of clinical examinations, different elements recommended as adding to the event of tennis elbow are playing experience, capacity and racket type. Inexperienced players all the more frequently utilize ill-advised stroke procedures and are progressively inclined to mishit the ball that outcomes in more noteworthy mechanical weight on the elbow joint. Heavier, stiffer or all the more firmly string rackets increment the muscle pressure required during swing and effect. Colt announced that metal rackets were a reason for tennis elbow since they permit stun waves to pass unimpeded.

Epidemiology of Tennis Elbow

As indicated by the observational examination, the prevalence of lateral epicondylitis is 1.3%, and average epicondylitis is 0.4%. The frequency may approach 1-3% in the all inclusive community while the occurrence by and large practice is roughly 0.4-0.7%. Lateral epicondylitis is similarly common among people, happens all the more often among

whites and in overwhelming arm and increments with age, topping between ages 30 and 50 with a mean age 42. It appears to happen similarly among blue-collar and white-collar workers and between socioeconomic classes. The regular course of the condition is by all accounts positive with spontaneous recovery inside 1-2 years in 80-90% of the patients.

Anatomy of Tennis Elbow

The human elbow is the summation of three articulations. The initial 2 are the ones customarily thought of as establishing the elbow: The humeroulnar articulation (the synovial hinge joint with articulation between the trochlea of the humeral condyle and the trochlear indent of the ulna) and the humeroradial articulation (the articulation between the capitulum of the humeral condyle and the concavity on the prevalent part of the leader of the radius). The third is a pivot-type synovial joint with articulation between the leader of the radius and the spiral indent of the ulna. These 3 articulations, shaping two unique angles, permit flexion and extension of the elbow, just as supination and pronation of the forearm and wrist at the elbow. At the point when the elbow is in anatomic position, the long hub of the forearm regularly has a



counterbalanced (lateral tendency or valgus at the elbow) of about 19° from the long pivot of the humerus. This point demonstrates no contrast between genders yet increases marginally with age into adulthood.

Taping

It is the utilization of adhesive tape or non flexible so as to give the help and secure the delicate tissue and joints and to limit pain after injury. The object of taping is to help a debilitated piece of the body without constraining its capacity, by anticipating developments that would pressure the debilitated zone. Basic role is to give semi unbending or inflexible support around a joint or encompassing tissue. Taping has balancing out impacts for the most part on structures and joints where there is minimal delicate tissue or where the skin can't move too uninhibitedly around the joint.

Taping is helpful for some reasons:

- Prevents injury.
- Prevents reinjury.
- Limits boundaries of ROM.
- Limits ROM and empowers patients to practices in the solid piece of ROM.

- Applies pressure to diminish pain, swelling and fits
- Immobilizes or opposes the included zone with the goal that healing can happen, particularly during fibroblastic phase of healing.
- Provides proprioception and biofeedback.
- Provides settling to territory.
- Applies obstruction.
- Supplies help.

Biomechanical backing of tape is constrained however clinically it seems to have an impact. Taping is most valuable in rehabilitation after an injury has been dealt with precisely or has recuperated suddenly.

Taping is likewise connected at the wrist to help the elbow joint which is under load.

The diverse treatment modalities and strategies used to treat lateral epicondylitis are helpful ultrasound, deep friction rub, elbow control, extending works out, propping, fore arm band, however no past examination has done on joining wrist control and elbow taping.



Dynamic Taping

Dynamic Tape isn't a kinesiology or athletic tape. It is a Biomechanical Tape, a totally new classification of sports and therapeutic taping. These inventive, 4-way extending tapes with solid versatile opposition and backlash of fluctuating grades retain and infuse power to decrease the remaining burden on the body. The taping methodology intends to straightforwardly oversee load, development

examples and capacity. Dynamic Tape does this with a delicate, breathable tape that is of such high caliber and quality that professional competitors around the globe trust our item consistently. From rehabilitation to the World Cup, Dynamic Tape is changing the manner in which we take a gander at sports and therapeutic taping.



Figure 1: Dynamic Tape

- It utilizes the patella as a pulley and appends will away from the joint to expand influence.
- Provides a mechanical impact by opposing the knee collapsing into flexion in this manner reducing load on the quadriceps system.



Explicit properties are required to acquire a mechanical impact and this may shift contingent upon the point of the strategy, the size of the customer and the powers to be

Dynamic Tape Original

- **Beige with Beige Tattoo** -has solid versatile opposition and recoil reasonable for biomechanical taping. Obviously, it can likewise be covered into a Power Band to make solid obstruction and force when required.



Figure 2: Beige with Beige Tattoo

- **Beige with Black Tattoo** - by and large shows more grounded opposition and recoil properties. It has excellent vitality stockpiling and discharge limit which is improved as a Power Band. This makes it perfect for musculotendinous applications like muscle tears and tendinopathies and furthermore for enormous multi-joint applications.



Figure 3: Beige with Black Tattoo

- **Dynamic Tape Eco Black with Grey Tattoo** -has a higher flexible modulus so hits and a lot higher obstruction much sooner in its range (for example with less stretch). This makes it perfect for applications where there is little development yet high obstruction is alluring for example joint skins and tendons. It likewise has somewhat less backlash to take into



consideration balancing out applications which upgrade power conclusion however with less danger of trading off flow and neural capacity.



Figure 4: Dynamic Tape Eco Black with Grey Tattoo

Effectiveness Of Dynamic Tapping

As an unconventional development arrives at its end and a returning concentric development begins, the elastic potential put away in the tape contributes to an easing of strong burden required to make the development. The elastic potential vitality being changed over into active energy

Demonstrating that there is work created in extending a light utilization of DT on the flexor surface of the finger hand and forearm with the wrist held in flexion Kendrick reports an up 'til now unpublished EMG pilot study by Thomas Nikolaus that demonstrated that wrist extensor EMG movement expanded about 40% when the subjects wrist was stretched out against the power of the tape. How much EMG action may differ will be affected by the situation in which the tape is connected, the level of stretch, the piece of the body the tape

is connected to and the width of the tape. Another fundamental investigation by Nikolaus on EMG action of the upper trapezius pre and 48 h after the utilization of a cervical offload Power Band strategy in a gathering of office workers with neck pain demonstrated an attractive noteworthy abatement in EMG action with the tape

The impact of a use of DT is that it doesn't impede extend or the movement design yet that it decreases the load a muscle (gathering) needs to influence. In scapular adjustment the trapezius muscle and serratus anterior work together to upwardly turn the glenoid suitably Physical specialists train customers engine control practices which help enroll failing to meet expectations musculature. Dynamic scapula situation under low load – arm by the side activities; can be graduated to expanded load practices by abducting or flexing the shoulder. An advisor can include or subtract



load to adjust an activity to the abilities of the customer before them by bowing or fixing the elbow to abbreviate or extend the lever. Elbow flexion decreases the heaviness of the arm making suitable enlistment simpler to accomplish. DT can be utilized comparably in engine control work with the tape connected in such a manner along these lines, that the taping takes a portion of the load of the upper limb, while likewise situating the shoulder to improve the capacity of under selected musculature (lower trapezius, serratus anterior) to fire, while normally over enrolled muscles (levator scapulae, rhomboids) are positionally restrained.

1.1 REVIEW OF LITERATURE

Hassan Shakeri (2018) -Introduction: KinesioTape (KT) is actually a noninvasive strategy to deal with muscular dysfunction as well as pain. Purpose: To investigate the outcome of KT with and without tension on pain intensity, pain pressure threshold, disability in individuals with lateral epicondylitis and grip strength, and myofascial trigger points in forearm muscles. Methods: 30 females with lateral epicondylitis as well as myofascial trigger point in forearm muscles had been randomly assigned to KT with placebo and tension (KT with no tension). The

therapy was supplied three times in a single week, and outcome measures have been assessing pre post therapy. Results: The hostile score of visual analogue scale (VAS) during exercise decreased considerably from 6.4 as well as six pretests to 2.53 as well as 4.66 posttest, respectively, for the KT with as well as with no tension organizations. The hostile score of Disabilities of the Arm, Hand and Shoulder decreased considerably from 16.82 as well as 22.79 pretest to 8.65 & 8.29 posttest, respectively, for the KT with as well as with no tension organizations. A paired t test discovered a significant decrease in VAS during Disabilities and exercise of the Arm, Hand and Shoulder before as well as after treatment in both groups ($P < .05$). Pain strain threshold, grip strength, as well as VAS making use of an algometer revealed no substantial differences. The study showed no considerable variation in variables right after intervention. Discussion: Improvements in purposeful disability were better when KT was used with tension, compared to receive with a placebo no tension program. Conclusion: The application of KT creates an enhancement in top extremity and pain intensity disability of topics with MTP and LE inside forearm muscles, and KT with tension was better compared to placebo group. Degree of



Evidence: NA. Trial Registration Number: 100-216.

Khaled Z, et, al. (2017) - Lateral epicondylitis (LE), is one of the most common reasons for elbow and forearm pain experienced in clinical practice. Diverse treatment modalities have been depicted in the literary works, including distinctive taping procedures. Past examinations have been explored just the transient impacts of various taping strategies on pain and grip strength in patients with LE with no corresponding exercise based recuperation program. So the motivation behind this examination was to explore the long haul impact of kinesio taping (KT) and precious stone taping on pain and grip strength in patients with LE. Forty patients having LE of their predominant arm were haphazardly doled out into two equivalent groups. Group A got the regulated exercise program in addition to "Y design method" KT while group B got the supervised exercise program in addition to "precious stone taping strategy. Pain power level at the lateral part of the elbow was assessed by Visual Analog Scale while the hand grip strength was assessed by JAMAR dynamometer. All measurements were recorded at pattern and following a month intercession. Understudy t-test uncovered that,

the two groups essentially improved post treatment as $P = 0.001$, while there was no noteworthy distinction ($P > 0.05$) between the two groups following a month of treatment in with respect to the measured results. Athletic tape was similarly powerful to the KT in increasing long haul benefits in LE. Both taping methods utilized in the present investigation were similarly viable in pain decrease and improving hand grip strength in patients with LE.

Rashi Goel (2015) - Lateral epicondylalgia is a degenerative musculoskeletal pain state described by pain over the lateral humeral epicondyle bringing about non-appearance from work and day by day living exercises. It is most common in jobs requiring repetitive manual activities of the upper furthest point. Literature portrays diverse treatment alternatives for lateral Epicondylalgia however there is no accord about the most adequate mediation technique. Taping (athletic/kinesio) has been utilized effectively in different musculoskeletal conditions with victories. Until this point in time, no examination has explored the impact of kinesio taping in lateral epicondylalgia. The motivation behind the examination was to explore and look at the impacts of kinesio taping and athletic taping



on pain and muscle execution in patients with lateral epicondylalgia. 16 patients (9 males, 7 females) inside age group of 18 – 50 years took an interest in the examination. It was a traverse structure. VAS, digital algometer and Jamar Dynamometer were utilized to measure pain, weight pain edge and pain free grip strength. These were assessed pre taping, following taping and following 30 minutes of each taping application chose arbitrarily for two continuous days. Rehashed measures ANOVA and rate change were utilized to look at contrasts in result measures. Bonferroni revision was connected to address for repeating testing. The outcomes demonstrated critical pain decrease and increment in grip strength after both the taping systems yet no factually huge contrasts for any result measure between the two taping methods ($p>0.05$). Additionally, the prompt pain decrease was increasingly after athletic taping (21%) than kinesio taping (10%) that compared to the quick increment in pain free grip strength progressively after athletic taping (14.5%) than kinesio taping (9.7%). after 30 minutes both the result measures gave comparable rate changes. The present investigation finishes up with the proposal of both athletic taping just as kinesio taping for increasing momentary upgrades in pain and muscle execution in

patients with lateral epicondylalgia.

Shaji John Kachanathu (2013) - Reason: There are a few medications accessible for the administration of lateral epicondylitis, however there is a shortage of clinical preliminaries contrasted with the viability of a forearm band over supportive elbow taping procedure as an adjunct measure in the administration of lateral epicondylitis. **Materials and Methods:** Totally 45 subjects with the mean period of 30 ± 5 years determined to have lateral epicondylitis taken an interest in the examination dependent on incorporation and avoidance criteria. Subjects were arbitrarily allotted to three groups ($n = 15$ in each); Group-A (forearm band), Group-B (elbow taping) and Group-C (control), furnished with a forearm band, supportive elbow taping strategy and as a control group, separately, albeit all groups got the conventional physiotherapy notwithstanding these adjunct measures. The result measurements included pain-free grip strength and useful improvement, surveyed by utilizing hand-held dynamometer and patient-rated forearm evaluation questionnaire (PRFEQ), separately. Complete term of study was a month. **Results:** Although every one of the groups indicated improvement as for



increment in the pain-free grip strength and upgrade of useful autonomy, be that as it may, Group-A has demonstrated the greatest improvement pursued by Group-B which thus demonstrated to be more successful than regular physiotherapy alone. Conclusion: The utilization of the forearm band delivered a huge increment in the grip strength and capacity when contrasted with the elbow taping and control groups. The investigation suggests the potential utilization of a forearm band later on notwithstanding the traditional treatment in the administration of patients with lateral epicondylitis.

Melikyan EY, Shahin E, Miles J (2003), Viability of additional corporal stun wave treatment for tennis elbow was examined utilizing partial dose that were surveyed by incapacity of arm shoulder and hand questionnaire, measurement of grip strength level of pain, analgesic use and pace of movement to medical procedure Information acquired before patients either the treatment of fake treatment grip in conclusive evaluation. Demonstrated none of the result measure indicated measurably huge distinctive between lateral epicondylitis and control gathering Study demonstrated no proof that additional corporal stun waver, for tennis elbow is

superior to plabebo.

Fairbank SR, Corelett RJ (2003), A common finding in tennis elbow is pain in the region of the lateral epicondyle during opposed expansion of middle finger, pain is because of illness in the extensor digitorum communis muscle, instead of pressure of the radial nerve, malady with in extensor carpi radialis brevis, results indicates high prevalence of a positive test in lateral epicondylitis.

Peter AA Struijjs, Pieter-Jan Damen (2003), Control of the wrist likewise has been depicted already, anyway its effectiveness for the executives of lateral epicondylitis has not been exhibited think about the effectiveness of control of wrist with effectiveness of an intercession comprising of friction back rub, ultrasound and muscle extending and strengthening practices for the administration of lateral epicondylitis with either "much improved" or "totally recouped".

1.2 STATEMENT OF THE PROBLEM

The goal of the analysis is actually finding out the usefulness of taping with conventional physiotherapy compare to only conventional physiotherapy for tennis elbow. The primary



goal of this particular study is actually comparing pain intensity at rest, at forceful wrist extension, throughout forceful grip, during cozen test, at resisted center finger extension, throughout palpation at affected website prior to as well as after conventional physiotherapy with taping and conventional physiotherapy alone in individuals with tennis elbow.

1.3 RATIONAL OF STUDY

Lateral epicondylitis or perhaps tennis elbow is actually a painful debilitating problem of elbow, which generates disturbance in purposeful pursuits. Literature suggests that pain as well as dysfunction is really typical in lateral epicondylitis which can hinder the person's power to run at leisure and work and imposes a monetary price on the town. Thus it's really important to handle the cases with tennis elbow. In Bangladesh, tennis elbow belongs to a challenge to the clinician, simply because thinking about the context of our country individuals typically struggle to go along with the evidenced based therapy recommended for tennis elbow.

Prevalence of tennis elbow is actually higher among the employees of extremely repetitive tasks. From the country of ours, people's low

socio demographic condition as well as occupational pressure accentuates the repeated micro stress of lateral epicondylitis, that leads the problem to a chronic inflammatory state. There are lots of physical therapy methods can be found for the treatment as well as rehabilitation of tennis elbow and some researches suggests that taping is actually among the key interventions for this problem which brings down the stress of lateral epicondyle and forearm extensor during exercise and shields against further injury.

1.4. SCOPE OF THE STUDY

The goal of this particular study is analyzing the effectiveness of dynamic taping using conventional management in tennis elbow. There were some research articles published about physiotherapy intervention for patient with tennis elbow, but taping for tennis elbow isn't so focused among them and just an extremely few research articles published concerning taping for tennis elbow. Consequently, in this particular study "the comparison between the usefulness of taping with conventional physiotherapy as well as conventional physiotherapy alone in individuals with tennis elbow" will make the proof for effectiveness of taping in patient with tennis elbow. Nevertheless, research will



help to boost the expertise of health professionals, and also builds up the career. The outcomes of the study might make it possible to guide physiotherapists to provide best therapy in patient with tennis elbow, which could be advantageous for both the individual with tennis elbow and for improving the area of physiotherapy career.

1.5. SIGNIFICANCE OF THE STUDY

The aim of this study is to compare the effectiveness of combined therapy including taping in combination with conventional physiotherapy versus conventional physiotherapy alone in patient with lateral epicondylitis.

1.6.OBJECTIVES OF THE STUDY

- i) To study the pain intensity at rest before as well as after typical physiotherapy with taping and traditional physiotherapy alone in individuals with tennis elbow.
- j) To understand the usefulness of taping solely
- k) To contrast the usefulness of elbow taping and with no wrist management is used as an adjunct therapy.

- l) To consider pain intensity during a good grip before as well as after typical physiotherapy with taping and traditional physiotherapy alone in individuals with tennis elbow.
- m) To evaluate pain intensity during palpation of affected side before as well as after typical physiotherapy with taping and traditional tennis elbow.

1.7.HYPOTHESIS

H1: Treatment of patient with tennis elbow using conventional physiotherapy alone is less effective than the Taping with conventional physiotherapy

H0: Treatment of patient with tennis elbow using conventional physiotherapy alone is not less effective than the Taping with conventional physiotherapy.

1.8 RESEARCH METHODOLOGY

This examination will be a quantitative assessment of the correlation between the activity projects joined with taping and exercise along for pain management of the patients with tennis elbow. To distinguish the viability of this treatment approach Visual Analog Scale (VAS) will be utilized as



estimation apparatuses for estimating the pain intensity in a few utilitarian positions.

Study Design

The investigation will be directed by utilizing a quantitative true experimental design with two distinctive subject groups. Genuine experimental design is a technique for testing theory by which cause and effect will be built up.

The investigation will be a genuine experimental between various subject designs.

The two gatherings got a typical treatment routine with the exception of one intervention. Just the experimental gathering got the tapping while in control bunch just conventional physiotherapy treatment program will be given.

A pre test (before intercession) and post test (after mediation) will be regulated with each subject of the two gatherings to think about the pain impacts when the treatment. The design could be appeared by-

r o x o (experimental group)

r o o (control group)

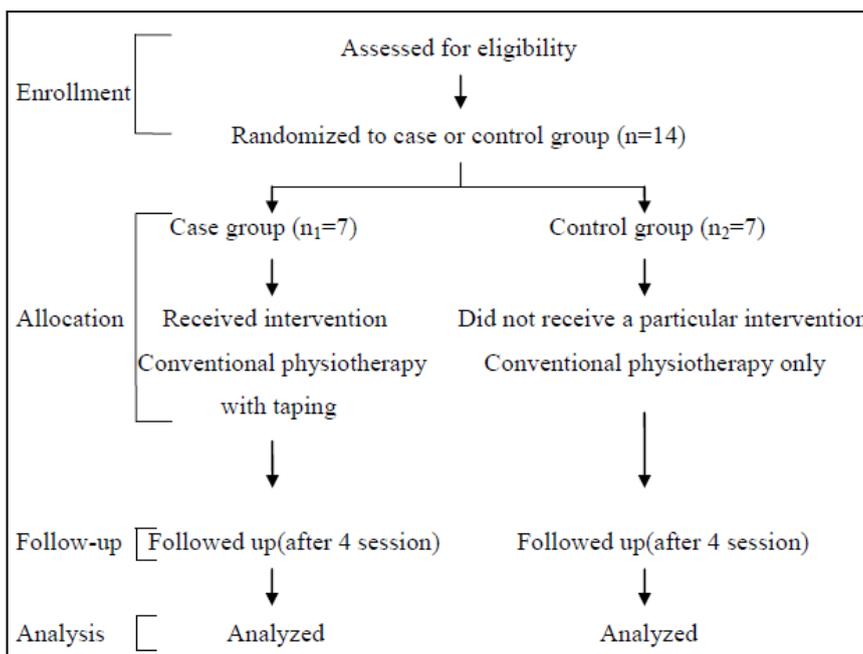


Figure 5: Flowchart of the phases of randomized controlled trial



Study Population

A populace alludes to the whole gathering of individuals or things that meet the criteria set by the analyst. The populaces of this investigation will be the tennis elbow patients.

Sample Selection

Subjects, who met the consideration criteria, will be taken as sample in this investigation. Fourteen patients with tennis elbow will be chosen from outside musculoskeletal physiotherapy branch of CRP (Punjab). At the point when the samples will be gathered, the analyst arbitrarily relegated the members into

experimental and control group, since it will improve interior legitimacy of experimental research. The samples will be given numerical number, for example, 1, 2, 3, 4 and so forth then the specialist haphazardly chose the odd number samples and significantly number samples for the control and experimental group. Absolute 14 samples will be incorporated into this investigation, among them 7 patients will be chosen for the experimental group (got tapping with conventional physiotherapy) and rest 7 patients will be chosen for control group (conventional physiotherapy as it were).

Inclusion Criteria

- a. The members will be those people who proceeded with physiotherapy treatment and finished in any event four sessions.
- b. Subject who will have no history of taking physiotherapy mediation, oral NSAID or corticosteroid infusion beforehand.
- c. The members who will have no any deformation of the influenced elbow and wrist.
- d. Voluntary members.
- e. Age group: 20-60 years of age of both genders.



Exclusion Criteria

- a. Subjects who won't have finished four session of physiotherapy treatment.
- b. Patients with clinical issue which may move toward becoming exacerbated with tapping, for example, skin illness, dermatitis, dermatitis.
- c. Subjects who will have any distortion in the influenced sided elbow and wrist.
- d. Subjects who will reluctance to take an interest.

Pilot Study

Pilot study is a primer kept running of the fundamental study to feature any issues which would then be able to be adjusted and it is significant consistently to run some pilot study before starting the test. Along these lines, the specialist played out a pilot study before starting the primary study and the point of this pilot study will be to characterize the rundown of conventional physiotherapy treatment will be given by musculoskeletal division of CRP for dealing with the instance of tennis elbow. Analyst took multi week for pilot study and visited the CRP musculoskeletal division of physiotherapy and counseled with important qualified physiotherapist to recognize the conventional physiotherapy utilized for tennis elbow. The scientist figured a rundown of proof based physiotherapy interventions of tennis elbow and gave those to the

physiotherapist to stamp the interventions usually utilized as conventional physiotherapy for tennis elbow. Subsequent to completing the pilot study, specialist wound up ready to discover the conventional physiotherapy interventions utilized for tennis elbow and their recurrence of utilization, with the assent of eight clinical physiotherapists. Cryotherapy, extending and strengthening activity of wrist extensor group muscle, profound transverse contact rub, ultrasound will be the most regularly utilized interventions, the recurrence of utilization will be 100%, eccentric exercise, control, myofascial release, oral NSAID will be the second most normally utilized interventions and the frequency was 75-99%, development with activation, effleurage and kneading massage, corticosteroid infusion will be the incompletely utilized interventions and the recurrence of utilization will be 25-49%.



Method Of Data Collection

Data collection tools

A composed survey, pen, paper and cement therapeutic tapes will be utilized as information collection tools in this study.

Questionnaire

The poll will be created under the advice and permission of the manager following certain rules. There will six close ended questions with visual simple scale (VAS) and each question will figure to distinguish the difference in pain with every action and all inquiries will be identified with pain and disability.

Measurement Tool

Visual Analogue Scale (VAS) - In this study analyst will utilize visual analog scale for estimating the intensity of pain. The VAS is a straightforward and exact method for emotionally surveying pain along a constant visual spectrum. VAS comprises of a straight line on which the individual being surveyed marks the degree of pain. The parts of the bargains line are the outrageous furthest reaches of pain with 0 speaking to no pain and 10 speaking to the most noticeably terrible

pain at any point experienced. As indicated by Myles (1999: 1517), the visual analog scale (VAS) is an instrument generally used to gauge pain and an adjustment in the visual analog scale score speaks to a relative change in the size of pain sensation.

Data Collection Procedure

The study strategy will be directed through evaluating the patient, initial recording, treatment and last recording. In the wake of screening the patient at division, the patients will be evaluated by qualified physiotherapist. Four sessions of treatment will be accommodated each subject.

Fourteen subjects will be picked for data collection as indicated by the consideration criteria. The specialist isolate all members into two groups and coded C1 (7) for control group and E1 (7) for experimental group. Experimental group got conventional physiotherapy with taping and control group got just conventional physiotherapy.

Data will be assembled through a pre-test, intervention and post-test and the data will be gathered by utilizing a composed questionnaire structure which will be organized by the analyst. Pre test will be



performed before starting the treatment and the intensity of pain will be noted with VAS score on questionnaire structure. A similar strategy will be performed to take post-test toward the part of the arrangement of treatment. Scientist gave the appraisal structure to each subject before beginning treatment and after four session of treatment and educated to put mark on hold of VAS as indicated by their intensity of pain. The analysts will gather the data both in experimental and control group before the certified physiotherapist so as to decrease the biasness.

Toward the part of the bargain, explicit test will be performed for statistical examination.

Data Analysis

So as to guarantee that the examination have a few qualities, the significance of gathered data must be exhibited in manners that other research laborers can get it. As it were the analyst needs to understand the outcomes. As the outcome originated from an examination in this exploration, data investigation will be finished with statistical examination.

All members will be code as indicated by group to keep up participant's confidentiality. All subjects of both experimental and control group score their pain intensity on visual analog scale before beginning treatment and subsequent to finishing treatment. Decrease of pain intensity for the two groups is the distinction between pre-test and post-test score.

Experimental examinations with the distinctive subject design where two groups will be utilized and each tried in two unique conditions and the data is interval or ratio ought to be investigated with unrelated t-test. As it will be experimental and have unrivaled groups of various subjects, who will arbitrarily relegate to conventional physiotherapy with tapping and just conventional physiotherapy group and the estimation of the result originated from gathering VAS score, with thinking about interim or proportion data, so the parametric disconnected t-test will be utilized in this study to compute the degree of hugeness. Irrelevant t-test and mean distinction will be determined to test the theory based on following presumptions-



- Data were proportion
- Two distinctive arrangement of subjects in two conditions

The t- formula-

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{(\sum X_1^2 - \frac{(\sum X_1)^2}{n_1}) + (\sum X_2^2 - \frac{(\sum X_2)^2}{n_2})}{(n_1 - 1) + (n_2 - 1)} \times \sqrt{(\frac{1}{n_1} + \frac{1}{n_2})}}$$

Where

x_1 = mean of scores from treatment group

x_2 = mean of scores from control group

$\sum X_1^2$ = the square of the each individual score from treatment group totaled

$\sum X_2^2$ = the square of the each individual score from control group totaled

$(\sum X_1)^2$ = the total of the individual score from treatment group squared

$(\sum X_2)^2$ = the total of the individual score from control group squared n_1 = number of subjects from treatment group n_2 = number of subjects from control group

Significant Level

So as to discover the centrality of the study, the scientist determined the „p-value. The p values elude the probability of the outcomes for experimental study. The word probability alludes to the exactness of the discoveries. A

p value is called level of importance for an analysis and a p value of <0.05 will be acknowledged as huge outcome for wellbeing administration look into. In the event that the p value is equivalent or littler than the critical levels, the outcomes will said to be noteworthy.



Figuring the degree of freedom from the formula:

$$\text{Degrees of freedom (df)} = (n_1 - 1) + (n_2 - 1) = (7 - 1) + (7 - 1) = 12$$

Df	.1	.05	.025	.01	.005	.0005
12	1.356	1.782	2.179	2.681	3.055	4.318

1.9. LIMITATIONS OF THE STUDY

- i. The fundamental confinement of this study will be in its brief term.
- ii. The study will be directed with 14 patients of tennis elbow, which will be an extremely modest number of samples in the two groups and won't be adequate enough for the study to sum up the more extensive populace of this condition.
- iii. It is constrained by the reality day by day exercises of the subject won't observe which will have impacted. Analyst will just investigate the impact of taping after 4 sessions, so the long haul impact of taping won't be investigated in this study.
- iv. The research will be completed in CRP Punjab such a little domain, so it will

be hard to keep private the points of the study for blinding strategy. Along these lines, blinding won't utilize in this study.

- v. There was no accessible research done around there in India. Thus, applicable data about tennis elbow understanding with explicit intervention for India will very constrain in this study.

1.10. EXPECTED OUTCOME

Taping system is utilized alongside conventional physiotherapy that means to lessen pain on sidelong epicondyle, to encourage restoration program. It is a financially savvy treatment elective for some regular wounds and abuse disorder which is compelling for reestablishing the joint play and for building up legitimate basic arrangement. So it might end up accommodating for patients with tennis elbow



to decide taping with conventional physiotherapy as intervention for diminishing the highlights of tennis elbow. From this exploration the scientist wishes to investigate the adequacy of taping alongside conventional physiotherapy to lessen the highlights of patient with tennis elbow, which will be useful to encourage their restoration and to upgrade practical exercises.

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