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EFFECT OF MANUAL TRACTION ALONG WITH CONVENTIONAL PHYSIOTHERAPY ON MECHANICAL LOW BACK PAIN

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EFFECT OF MANUAL TRACTION ALONG WITH CONVENTIONAL PHYSIOTHERAPY ON MECHANICAL LOW BACK PAIN

Submitted by **Sohel Arman** and **Md. Ariful Islam** for partial fulfillment of the requirements for the BSc in Physiotherapy

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I declare that the work presented here is my own. All sources used have been cited appropriately. Any mistakes or inaccuracies are my own. I also declare that for any publication, presentation or dissemination of information of the study. I would be bound to take written consent of my Supervisor.

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ABBREVIATIONS

SAIC	: Student admission information center
SCMST	: Saic College of medical science and technology
LBP	: Low back pain
MSP	: Musculoskeletal pain
ODI	: Oswestry disability index
FMS	: Functional mobility scale
SLR	: Straight leg Rising
ASLR	: Assisted Straight leg Rising
ROM	: Rang of motion
NPRS	: Numeric Pain Rating Scale
DTF	: Deep Transverse Friction
SD	: Standard deviation
QoL	: Quality of Life
SWD	: Short Wave Diathermy
MWD	: Short Wave Diathermy
UST	: Ultrasound Therapy
IFT	: Interferential Therapy
TENS	: Transcutaneous Electrical Nerve Stimulation
IRR	: Infra-Red Radiation
NSAIDs	: Non-Steroidal Anti-inflammatory Drugs
MS	: Musculoskeletal
ADL	: Activity of Daily Living
PT	: Physiotherapy
RCT	: Randomized Control trail
AS	: Randomized Control trail
BMI	: Body mass index

Abstract

Purpose: The purpose of the study was to explore the efficacy of Manual traction with conventional physiotherapy compare to only conventional physiotherapy for the treatment of Mechanical Low Back Pain.

Objectives: To determine the socio- demography of Low Back Pain and to analyze the efficacy of Manual Traction in reducing pain and improving function by reducing disability.

Methodology: This study is an experimental design. Ten patients with Mechanical Low Back Pain were conveniently selected from Saic Physiotherapy and Rehabilitation Unit, And Modern physiotherapy and Rehabilitation center, mirpur, 5 patients were randomly assigned to Mechanical Traction with conventional physiotherapy group and 5 patients to the only conventional physiotherapy group. Numeric Pain Rating Scale (NPRS) was used to measure pain and Oswestry Disability Index (ODI) was used to measure disability. Statistical analysis was done by using T-test**.**

Results: This study's results of Mean±SD Experimental group age 45±13.172 Control group age 39.80±10.756 and participants were 10. Among them 20% were age below 30 years, 30% were between age 30-40 of age, 20% were between 41 to 50 years of age and rest of them 30% were age more than 50. T test pre and post of lumber flexion experimental group significant $p<.002$, extension $p<.009$, severity of pain $p<.034$, t test between control group pre and post ODI Index $p<.009$ lumber Extension $p<.004$ severity of pain $p<.034$ ODI index $p<.001$

Conclusion: This experimental study shows that Manual Traction with conventional physiotherapy is more effective than conventional physiotherapy alone for patients with Mechanical Low Back Pain.

Keywords: Manual Traction, Conventional Physiotherapy, Mechanical Low Back Pain

CHAPTER: I INTRODUCTION

1.1 Background

Low back pain is one of the most common and costly musculoskeletal problem in modern society. It is suffer by seventy to eighty percent of adult at some time in their lives (Furlan et al., 2015). It is a widespread and costly problem in many countries (Mainiadakis and Gray., 2000). It is a common musculoskeletal disorder causing pain in the lumbosacral area. It could be acute, sub-acute and chronic in its clinical presentation. It affects 80% of people at some point in their lives. In Bangladesh, the number of people complaining low back pain is increasing and is a matter of concern (Srivastava et al., 2013).

This study found that thirty point one percent had never experienced low back pain, forty six point three percent had or were having moderate low back pain and twenty three point six percent had or were having severe low back pain. Patients with severe low back pain more complain in the lower limbs, more medical care and treatment for low back pain, and had lost more time from work for this reason. Risk factor associated with severe low back pain included jobs requiring repetitive heavy lifting (Frymoyer et al., 1983).

This thesis found low income and middle income countries, disability and costs from low back pain risk in the future. Where health system are delicate and cannot cope with this increasing burden. Globally, in 2016 fifty seven million of total years lived with disability (University of Otago, 2018).

Most individuals will develop low back pain at some point in their life, as the lifetime prevalence is between forty nine and ninety percent. It is currently accepted that the management of low back pain should begin in the primary care setting, and over half of visits for low back pain are to primary care physicians. Nevertheless, a recent systematic review on the prevalence of low back pain in emergency settings suggests that low back pain is a common presenting complaint to this setting (pooled prevalence estimate 4.3%) (Edwards et al., 2018).

Pain in the low back area is a common phenomenon. Mechanical problems are the most common cause (around 90%) and a majority (70% to 85%) does not have a specific cause identified. Any injury to one of the inter vertebral discs (disc tear, disc herniation), ligament and joint also causes pain (Manusov et al., 2012)

The diagnosis and therapeutic management of patients with low back pain has been characterized by considerable variation within and between countries among practitioners, medical specialists and another healthcare professionals. Clinical guidelines have become available. The outlook for evidence based management of low back pain has greatly improved (Koes et al., 2006).

1.2 Justification

Low-back pain (LBP) is a major health problem among populations in developing countries and a major cause of medical expenses, absenteeism and disablement. Various types of traction are used to treatment low-back pain patients, often in combination with conservative medical management procedure such as Short Wave Diathermy (SWD), Micro Wave Diathermy (MWD), Ultrasound Therapy (UST), Interferential Therapy (IFT), Transcutaneous Electrical Nerve Stimulation (TENS), manual therapy, ergonomics, postural education, neural mobilization anti-inflammatory medication such as NSAIDs etc.

Physiotherapy is one of the responsible health professions for aiding and managing low back pain (LBP). Research on this area can show the need to establish the skills of physiotherapist particularly in this area and be a base for expanding the scope of the profession in the country.

This research find out the efficacy manual traction along with conventional physiotherapy comparing with only conventional physiotherapy.

The study will help other physiotherapist to know the effect of manual traction on mechanical low back pain.

1.3 Statement of hypothesis

Alternative Hypothesis

Manual traction along with conventional physiotherapy is more effective than only conventional physiotherapy for the management of patient with mechanical Low Back Pain.

Null Hypothesis

Manual traction along with conventional physiotherapy is not effective than only conventional physiotherapy for the management of patient with mechanical Low Back Pain.

1.5 Objectives of the study

1.5.1 General Objectives

- To identify the effect of manual traction on mechanical low back pain

1.5.2 Specific Objectives

- To determine the socio-demography information of participants
- To identify the effect of manual traction in reducing disability and improving functional ability of the low back pain patient

1.6 Operational definitions

Musculoskeletal disorder

Musculoskeletal (MS) disorders include a group of conditions that invoice the nerves, tendon, muscles and supporting structures such as intervertebral disc. They represent a wide range of disorder, which can differ in severity from mild periodic symptoms to sever Chronic and debilitating condition. Example carpal tunnel syndrome, tenosynovitis, tension neck syndrome and low back pain.

Pain

An unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage.

Low back pain

Pain around the back is called back pain. Pain at the lower back due to long hours seated in an unchanged position, often with a poor posture, is tight an painful lower.

Intermittent Pain

Stopping or ceasing for a time; alternately ceasing and beginning again is called intermittent pain.

Radiating pain

Radiating means spreading outward, radiating pain is pain that start in one area and spreads until a larger area hurts. Sometimes this is due to the nerves for example, if a nerve gets pinched of pulled; it may hurt all along the nerve instead of just at the one spot that got hurt. Sometimes it is due to the body's attempt to compensate for the injury – for example .if you hurt your ankle, you may feel pain in the opposite leg as you try to avoid putting weight on that ankle.

Visual analog scale (VAS)

The NRS is a segmented numeric version of the visual analog scale (VAS) in which a respondent selects a whole number (0–10 integers) that (0-3) mild pain, (4-7) moderate pain and(8-10) severe pain.

Lumbar traction

Lumber traction is the process applying stretching force to the lumber through body weight, and pulleys to districts individual joints of the lumber spine. The word traction is derivative of the Latin word " traction" means a system of drawing of pulling, and various from of spine traction have been described, since the time of Hippocrates, for the relive of pain.

Manual Traction

Manual traction is applied as the clinician's hands and belt are used to pull on the patient's legs. It is usually applied for a few seconds duration, applied as a sudden and quick thrust.

Body mass index

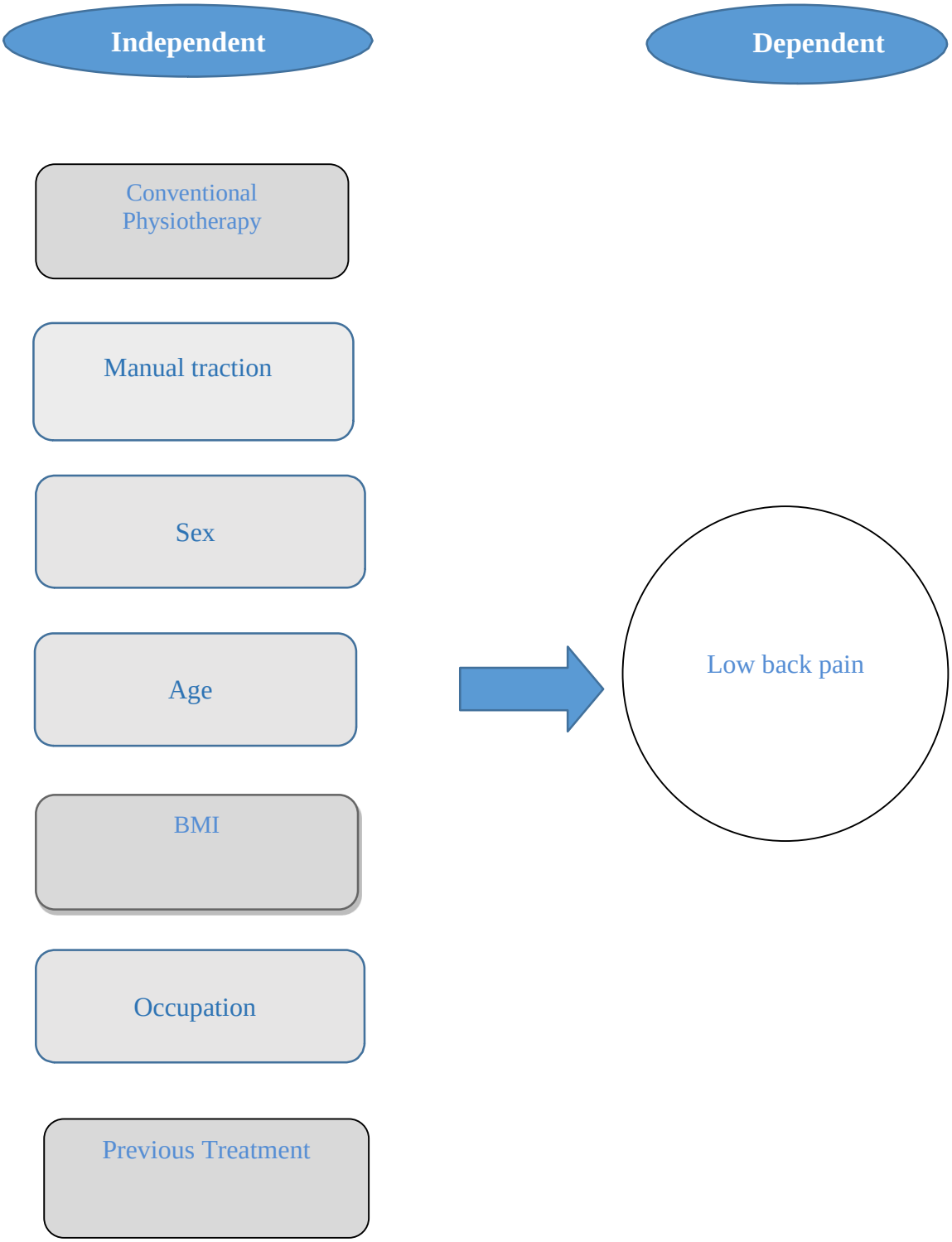
BMI is a value derived from the mass (weight) and height of a person. The BMI is defined as the body mass divided by the square of the body height, and is universally expressed in units of kg/m^2,resulting from mass in kilograms and height in metres.

Oswestry Disability Index (ODI Scoring): Interpretation:

point total /50 *100 = % disability

01. **0% to 20% (minimal disability):** Patients can cope with most activities of daily living. No treatment may be indicated except for suggestion on lifting, posture, physical fitness and diet.
02. **21% to 40% (moderate disability):** patients may experience more pain and problem with sitting, lifting, lifting, and standing. Travel and social life are more difficulty. Patient may be off work. Personal care, sleeping and sexual activity may not be grossly affected. Conservative treatment may be sufficient.
03. **41% to 60% (severe disability):** pain is primary problem for this patients, but they may also be experiencing significant problem in travel personal care, social life, sexual activity and sleep. A detailed evaluation is appropriate.
04. **61% to 80% (crippled):** Back pain an impact on all aspects of daily living and work. Active treatment is required.
05. **81% to 100% (bed bound):** these patients may be bed bound or exaggerating their symptoms. Careful evaluation is recommended.

1.7 Conceptual framework



CHAPTER II: LITERATURE REVIEW

The goal of this study was to evaluate the reliability and predictive validity of the manual unloading test for response to mechanical traction in patients with LBP. The manual unloading test demonstrated acceptable levels of both intra and inter-examiner reliability. The manual unloading test is designed to discriminate between patients who will and will not benefit from traction as an intervention. Significant statistical and clinical differences were observed for response to mechanical traction between those with a positive manual unloading test response and those with a negative manual unloading test response, supporting the discriminative ability of the manual unloading test and criterion referenced validity. A moderate-to-strong correlation was demonstrated between response to manual unloading and response to mechanical traction, demonstrating predictive validity (Brian et al., 2016).

These methods use lumbar and cervical extension traction for correcting hypo-lordosis as opposed to traditional 'distraction' traction that may yield temporary symptomatic relief, but will not restore lordosis. The patient performed traction in a seated position receiving both a lumbar spine and cervical spine extension traction in the Universal Traction System. Traction was performed for 15 minutes each treatment session. The patient also received spinal manipulative therapy as well as spine extension exercises. Exercises were performed standing facing away from a wall with a block between the wall and pelvis, the patient was instructed to extend the cervical spine as well as the lumbar spine and hold for a few seconds. Fifty repetitions were repeated each session. Treatment protocol was planned to be three times per week for six months. The patient consented to the publication of these results including pictures and radiographs (Weiner et al., 2018).

Thirty-eight participants provided available biomechanical data. We could not measure directly what happened in the body, but we confirmed that the distraction force lineally correlated with the movement of traction unit at the pelvic girdle. After applying vibration force to preloading, the strain gauge showed proportional vibration of the shifting distance without a phase lag qualitatively. FEM simulation provided at least 3.0-mm shifting distance at the lumbar spine under 100 mm of body traction. Ninety-five participants provided a treatment diary and were classified as no pain, improved,

Unchanged, and worsened. Approximately 83.2% of participants reported a positive response. Lumbar traction can provide a distractive force at the lumbar spine, and patients who experience the application of such force show an immediate response after traction (Tadano et al., 2019).

A total of 152 patients were recruited. The two treatment groups had similar demographic and clinical baseline characteristics this study shows a progressive fall in Oswestry Disability Index and pain visual analog scale scores in patients with low back pain treated with either interferential therapy or motorized lumbar traction and massage. There was no difference in the improvement between the two groups at the end of treatment. Although there is evidence from several trials that traction alone is ineffective in the management of low back pain, this study could not exclude some effect from the concomitant massage (Werners et al., 1999).

Chronic low-back pain, there is strong evidence that exercise is at least as effective as other conservative treatments. Individually designed strengthening or stabilizing programs appear to be effective in healthcare settings. Meta-analysis found functional outcomes significantly improved, however, the effects were very small, with less than a three-point (out of 100) difference between the exercise and comparison groups at earliest follow-up. Pain outcomes were also significantly improved in groups receiving exercises relative to other comparisons, with a mean of approximately seven points. Effects were similar over longer follow-up though confidence intervals increased. Mean improvements in pain and functioning may be clinically meaningful in studies from healthcare populations in which improvements were significantly greater than those observed in studies from general or mixed populations (Hayden et al., 2005).

This theses find out the patients in the control group had better recovery than those prescribed either bed rest or exercises. There were statistically significant differences favoring the control group in the duration of pain, pain intensity, lumbar flexion, ability to work as measured subjectively, Oswestry back-disability index, and number of days absent from work. Recovery was slowest among the patients assigned to bed rest. The overall costs of care did not differ significantly among the three groups (Antti et al., 1995).

The number of randomized controlled trials identified varied widely with regard to the

interventions involved. The scores ranged from 20 to 79 points for acute low back pain and from 19 to 79 points for chronic low back pain on a 100-point scale, indicating the overall poor quality of the trials. Overall, only 28 (35%) randomized controlled trials on acute low back pain and 20 (25%) on Chronic low back pain had a methodologic score of 50 or more points, and were considered to be of high quality. Various methodologic flaws were identified. Strong evidence was found for the effectiveness of muscle relaxants and no steroidal anti-inflammatory drugs and the ineffectiveness of exercise therapy for acute low back pain; strong evidence also was found for the effectiveness of manipulation, back schools, and exercise therapy for chronic low back pain, especially for short- term effects (Tulder et al., 1997).

A prospective randomized study was conducted comparing vertical ambulatory traction in 41 patients (group 1) to 35 patients treated by the same traction device combined with daily walking for 12 days and then 8 more sessions on alternating days (group 2). The pain score, lumbar spine range of motion and satisfaction with treatment were examined 1, 6 and 12 months following completion of treatment. The results demonstrated improvement in pain score and range of motion at each follow up examination. The pain improvement in group 2 was significantly better than in group 1. One year after completion of treatment, 63% of the patients from group 1 and 78% of the patients from group 2 were satisfied with the results (Yigal et al., 2006).

In this controlled prospective study of the Auto-traction method for the treatment of lumbago- sciatica, 82 patients were randomly allocated to either treatment with Auto-traction for up to three 1-hour sessions in 1 week, or they were given a corset and advised to rest. The orthopaedic surgeons participating in the study worked at six different hospitals and all had limited experience of the Auto-traction method obtained during a 1- week course. All patients were clinically evaluated by an independent observer who also performed the follow-up examinations 1 and 3 weeks after the treatment sessions. In addition a 3-month follow-up was performed by letter. The Auto-traction Method gave prompt relief of pain and a normalizing of the SLR test more often than treatment with only a corset and rest. The difference between the two treatment groups was statistically significant. The immediate difference noted between the treatments groups had decreased slightly at 3 weeks but was still statistically significant at this time (Larsson et al., 2008).

Almost 1200 physicians responded. More than 80% of these physicians believed physical therapy is effective, but this consensus was lacking for other treatments. Fewer than half of the physicians believed that spinal manipulation is effective for acute or chronic back pain or that epidural steroid injections, traction, and corsets are effective for acute back pain. Bed rest and narcotic analgesics were recommended by substantial minorities of physicians for patients with chronic pain. The Quebec Task Force found little scientific support for the effectiveness of most of the treatments found to be in common use (Cherkin et al., 1995).

Many forms of treatment are used in everyday practice for chronic low back pain. Reports of clinical trials using physical modalities such as manipulation and exercise, however, often fail to provide necessary details allowing either reproduction in a clinical setting or comparison of trials to judge the preponderance of evidence for policy making. Heterogeneity of therapeutic procedures, for example, choices among exercise routines or massage therapies, has hampered attempts at formal meta-analyses. This may, in part, explain conflicting results among meta-analyses for various treatment strategies. Our clinical trial compared the use of a flexion–distraction intervention with a specific active trunk exercise routine (ATEP). Details regarding these treatments are provided for future consideration of these data relative to additional studies (Gudavalli et al., 2006).

The results show that traction beds are highly effective for disc movement and lower back pain relief. Also, an optimal angle for traction can be obtained in a 3D model analysis using CT or magnetic resonance imaging images. The optimal angle would be different for different patients and thus should be determined based on the decreased height of the intervertebral disc, weight and height of patients (Farajpour et al., 2017).

There is wide variability in the type of traction, traction parameters and patient characteristics found among the RCTs of lumbar traction. Included several types of traction: mechanical (57%), auto- traction (16%), manual (10.8%), gravitational (8.1%) and aquatic (5.4%). The variability may call into question the conclusion that lumbar traction has little no or value on clinical outcomes. Also, this variability emphasizes the need for targeted delivery methods of traction that match appropriate dosages with specific subgroups of patients with low back pain (Alrwaily et al., 2018).

Severity of low-back pain (LBP) symptoms did not show any correlation with the degree of the maximal displacement but correlated significantly with the amount of instability both in the case of spondyl- and retro-olisthesis. Traction-compression radiography proved a simple and practical method to diagnose and measure translatory segmental instability even when conventional flexion- extension load failed to provoke any abnormal movement (Friberg., 1987).

A period of non-surgical management is recommended for most patients, but there is little evidence to guide non-surgical decision-making. We conducted a preliminary study examining the effectiveness of a treatment protocol of mechanical traction with extension-oriented activities for patients with low back pain and signs of nerve root irritation. The results suggested this approach may be effective, particularly in a more specific sub-group of patients. The aim of this study will be to examine the effectiveness of treatment that includes traction for patients with low back pain and signs of nerve root irritation, and within the pre-defined sub-group (Dagenais et al., 2010)

CHAPTER III: METHODOLOGY

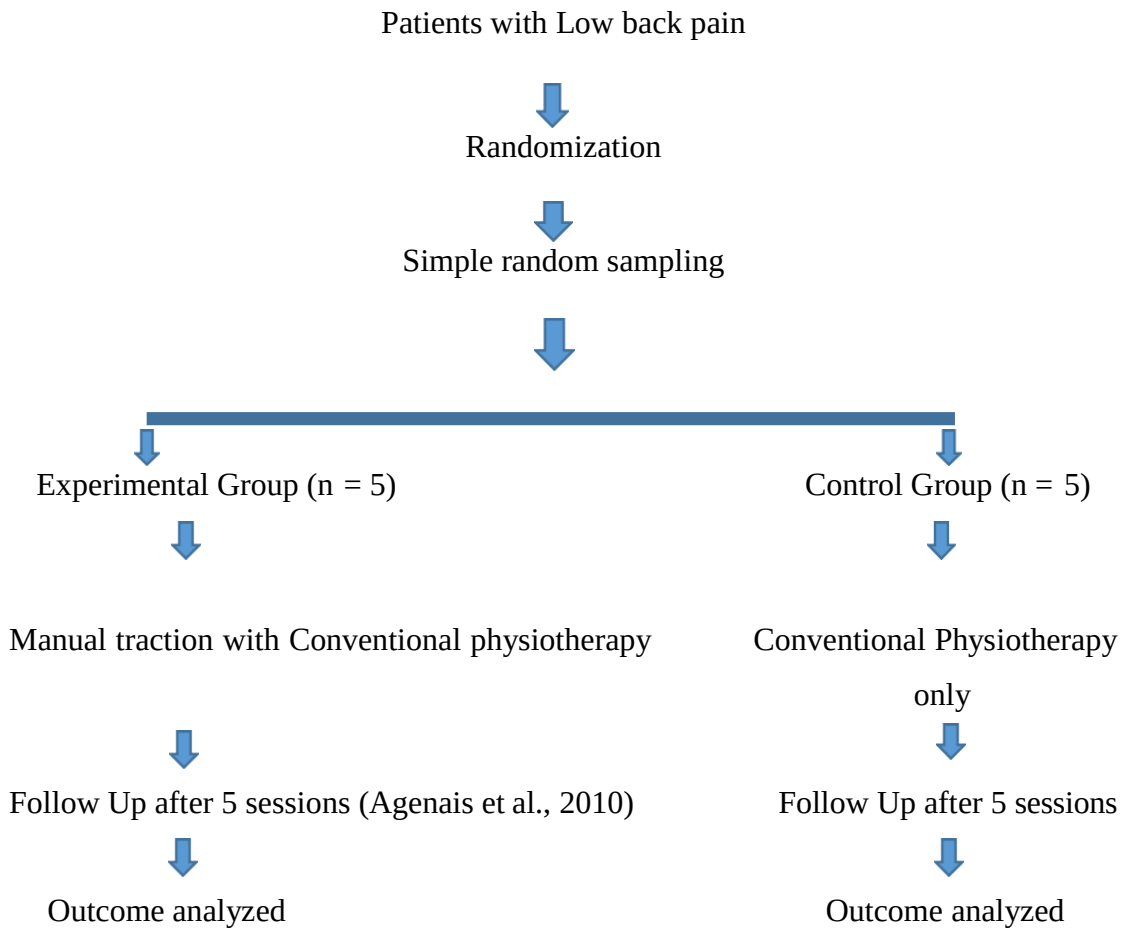
3.1 Study designed

This study was Randomized Controlled Trial (RCT)

The study was an experimental between two subject designs. Manuel traction and other Physiotherapy treatment were applied to the experimental group and only other Physiotherapy treatment was applied to the control group.

A pre-test (before intervention) and post-test (after intervention) was administered with each subject of both groups to compare the pain and functional ability of the subject before and after the treatment.

Flow-chart of the phases of Randomized Controlled Trial (RCT)



3.2 Study Area

Saic Physiotherapy and Rehabilitation Services (Dhaka), Modern Physiotherapy and Rehabilitation Center (Dhaka) and Estern Care Hospital Physiotherapy unit (Dhaka)

3.3 Study population

The study population was the patients diagnosed with Low Back Pain attended in the Outdoor of Saic Collage of Medical Science and Technology Modern Physiotherapy and Rehabilitation Center (Dhaka) and Estern Care Hospital Physiotherapy unit (Dhaka)

3.4 Sample size

Sample size is calculated by following equation,

$$n = \frac{z^2 pq}{d^2}$$

Here,

z= 1.96

p= prevalence = 0.5

q = 1-p

d = confidential interval = 0.05

The actual sample size for this study was calculated as 384, but as the study was performed as a part of academic research project and there were some limitations. So that 10 samples was selected conveniently according to inclusion and exclusion criteria for this study. 5 participants were in experimental group and 5 participants in control group.

3.5 Sample techniques

Simple random sampling technique was used for this study.

3.6 Inclusion criteria

- Mechanical Low Back pain patient
- Age group:18-60 year (McKenzie, 1990)
- Both sex

3.7 Exclusion criteria

- Acute disc prolapse patient
- Diagnosis of secondary complications such as tumor, TB spine, fracture, dislocation and severe osteoporosis, Paget's disease
- Rheumatoid Arthritis, Ankylosing Spondylitis
- Cord signs and Syndrome, Transverse myelitis
- Surgery to the lumber spine
- Pregnant women
- Mentally retarded patient

3.8 Data Collection Tools

- Record or Data collection form
- Consent Form
- Structured questionnaire. (Both open ended and close ended questionnaire)
- Visual analog Scale – for measuring pain
- Oswestry Disability Index (ODI)
- Pencil, Papers

3.9 Measurement Tools

Visual analog Scale (VAS)

Oswestry disability index (ODI)

3.10 Data management and analysis

After collection of data of the respondents were organized. Data was entered into the computer into a data base in the software package. Statistical package for the social science (SPSS) version 25, Microsoft Office 2013 and scientific calculator. This study use T test.

3.11 Treatment Protocol

Manual traction was applied by a graduate qualified physiotherapist who is expertized in manual traction to the patients of experimental group.

Table: Experimental Group Treatment Protocol

Treatment option	Duration/Repetition
McKenzie Approach (Directional Preference)	10 repetition in each session
Lumber Mobilization (Maitland mobilization)	5 minutes in each session
IRR	10 minutes in each session
Soft tissue technique	3 minutes
Manual traction	10 repetition (6 sec hold) each session

Table: Control Group Treatment Protocol

Treatment option	Duration/Repetition
McKenzie Approach (Directional Preference)	10 repetition in each session
Lumber Mobilization (Maitland mobilization)	5 minutes in each session
IRR	10 minutes in each session
Soft tissue technique	3 minutes

McKenzie Approach (Directional Preference)

According to McKenzie (1995) the treatment options are:

Lying prone

Lying prone with forearm support

Extension in lying

Repeated extension in lying

Extension in lying with self-overpressure

Extension in lying with therapist-overpressure

Sustained extension

Extension in standing

Extension mobilization

Extension manipulation

Rotation mobilization in extension

Rotation manipulation in extension

Sustained rotation

Flexion in lying

Flexion in standing

According to the directional preference these approaches were given to the patients. The patients who were given positive feedback in extension were given extension principle and the patient given positive feedback in flexion was given flexion principle. Spinal Mobilization was given according to the Maitland Mobilization Grade in between Grade I-IV. Soft tissue technique was given by Deep Transverse Friction Massage (DTFM), Stroking and Effleurage techniques.

Manual traction technique

3.12 Ethical consideration

A research proposal was submitted to the ethical review board of SCMST to get approval. Verbal consent was taken from the regarding SAIC Physiotherapy and Rehabilitation services and Modern physiotherapy and rehabilitation center authority. After approving, this study was conducted. The participant was ensuring that their comments would not

Affected their personal life. When researcher had received an approval letter from the ethical committee than data collection was started. The Bangladesh Medical Research

Council (BMRC) and World Health Organization (WHO) guideline were followed.

3.12 Limitation of study

The study should be considered in light of the following limitations. As a student this study conducted by my own fund, so there might have some limitation of finical aspect in this study.

The findings of the study were not generalized to the wider population. The most easily accessible participants were collected from different area of Bangladesh and not it is not cover the all population. This small number of samples is not enough to generalize the result.

This were less time to carry out this study and this calculated sample could not take.

In the study data was collected from eight district of country. If investigator got more time, a larger data could be collected from different parts of Bangladesh. If it could possible, it may make the result more valid and reliable.

This study does not respondent whole population with in country.

Few researchers had done before on this topic area. So, there was little evidence to support the result of the study.

This research is a part of my academic study purpose and I am not to expert on statistics analysis.

As it was a new topic area so it was difficult to collect appropriate information about the topic area especially on the perspective of Bangladesh.

The interview scheduled survey and interviewing skills were not adequate to get deeper information from the participants, as it was the first attempt for the researcher.

CHAPTER IV: RESULT

5.1: Socio-demographic information:-

5.1.1: Age of the participants:

Mean±SD Experimental group age 45±13.172 Control group age 39.80±10.756

In this study total participants were 10. Among them 20% (n=2) were age below 30 years, 30% (n=3) were between age 30-40 of age, 20% (n=2) were between 41 to 50 years of age and rest of them 30% (n=3) were age more than 50.

Tab-3: Age of participant

Age of participant		
Age	Frequency	Percent
<30 years	2	20.0
30-40 years	3	30.0
41-50 years	2	20.0
>50 years	3	30.0

5.1.2: Sex of the Participants:

10 Patients with Low back pain were included as sample of the study, among them 50% (n=5) were Male and 50% (n=5) were Female.

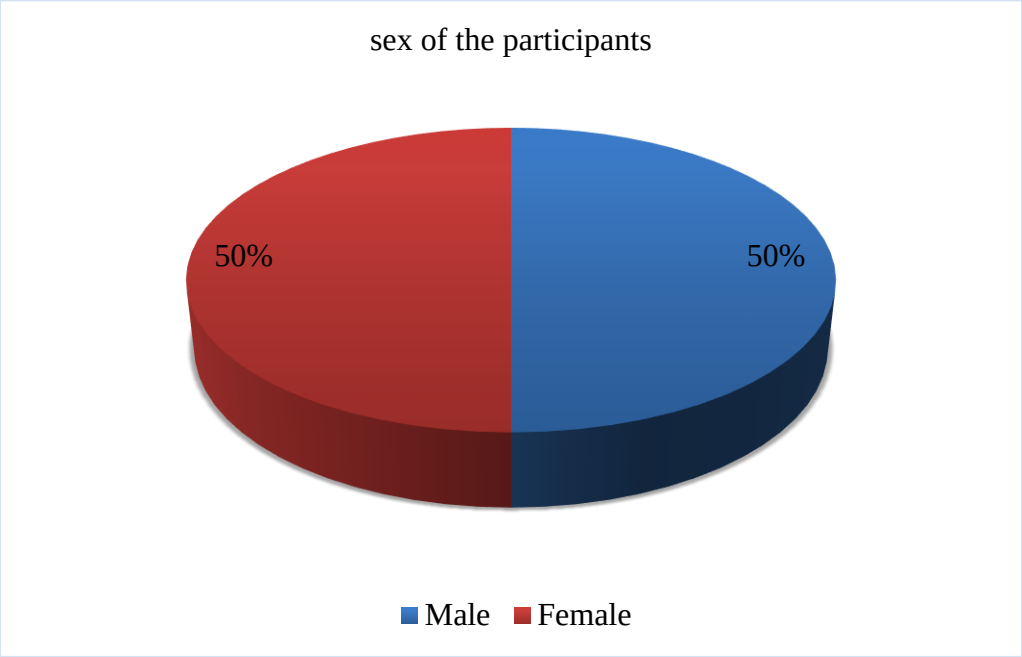


Figure-1: Sex of the participant

5.1.3 BMI of the participants:

In this study total participants were 10. Among them 10% were age below 18.5, 30% were between age 18.5-24.9, 40% were between 25.0 to 29.9 and rest of them 20% were more than 30.

Tab-4: BMI of the participant

BMI	Frequency	Percent
<18.5 (Under wait)	1	10.0
18.5-24.9 (Normal)	3	30.0
25.0-29.9 (Over wait)	4	40.0
>30 (Obese)	2	20.0

5.1.4 Marital status of the participants:

In this study total participants were n=10; 60% participant were married (n=6); 40% participants were unmarried (n=4)

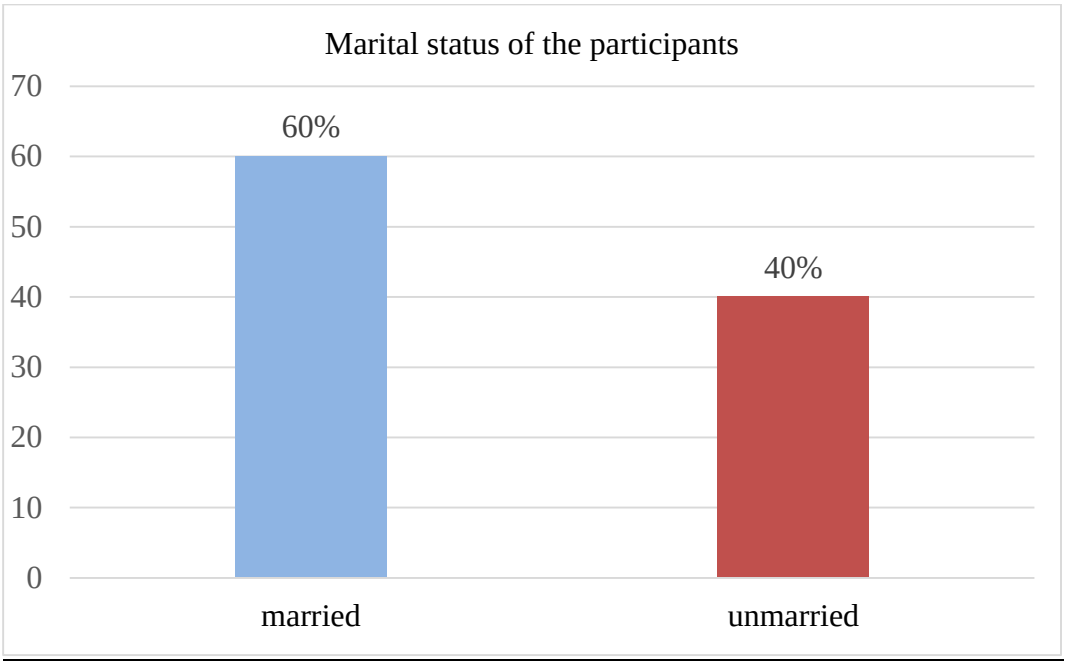


Figure-2: Marital status of the participants

5.1.5 Occupation of the participants:

This study (n=10) find out total 40% of participants housewife (n=4); 30% of participants student (n=3); 10% of participants service holder (n=1), 20% of participants others (n=2).

Table-5: Occupation of the participants

Occupation	Frequency	Percent
Housewife	4	40.0
Student	3	30.0
Service holder	1	10.0
Others	2	20.0

5.1.6 Monthly income of family:

This study find out monthly income Mean±SD: 32700.00±15107.393 The majority of the participants 50% (n=5) were in less than 20000 BDT followed by 30% (n=3) were in 20000-40000 BDT, 20% (n=2) were in more than 40000;

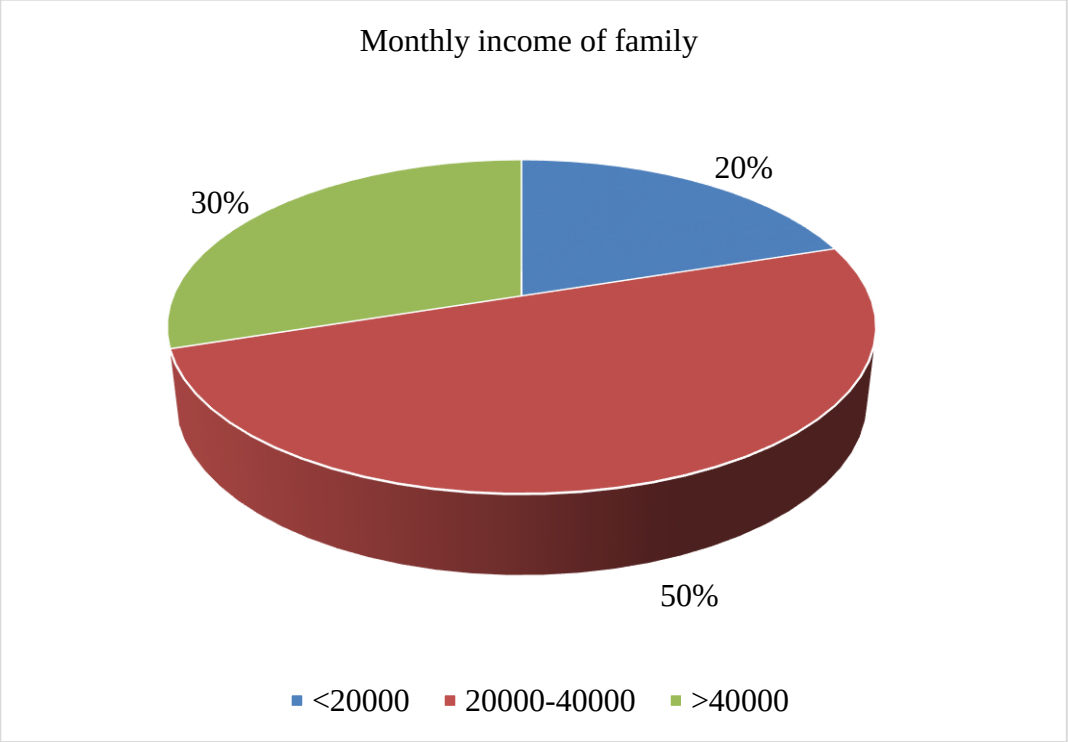


Figure-3: Monthly income of family Mean and standard deviation of monthly income of family

5.1.7 Educational level participants:

10 participants of this study there 20% participant were higher secondary (n=2), 50% of participants graduate (n=5), 20% of participants were post graduate (n=2).

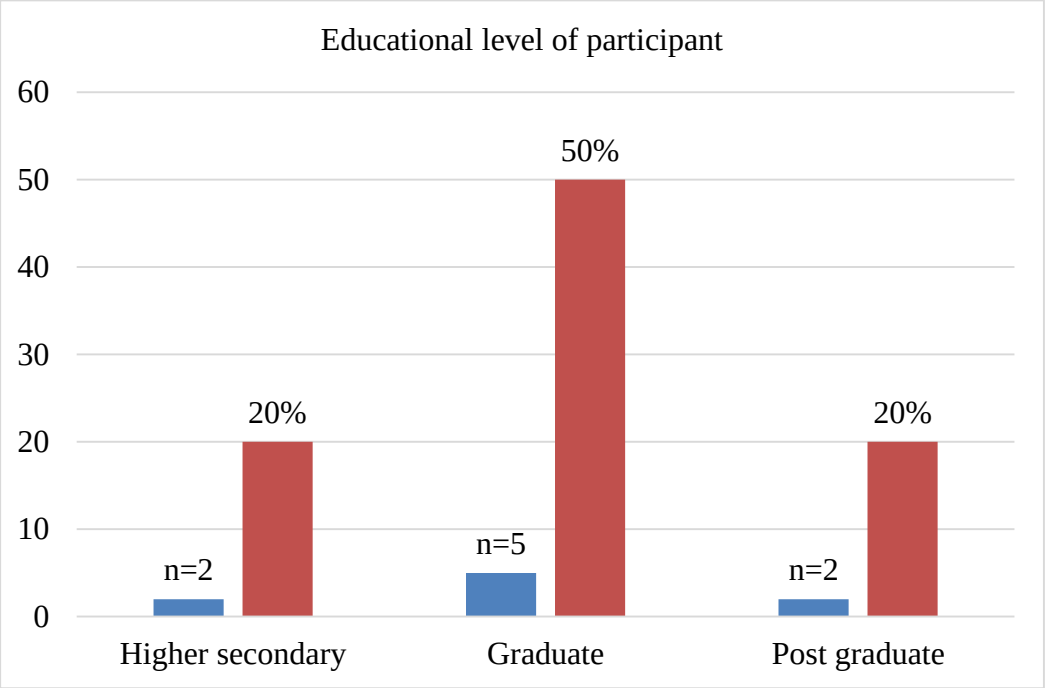


Figure-4: Educational level of participant

5.1.8 Living area of the participants:

They were the minority of the participants 10% (n=1) were in semi urban followed by 90% (n=9) were in urban.

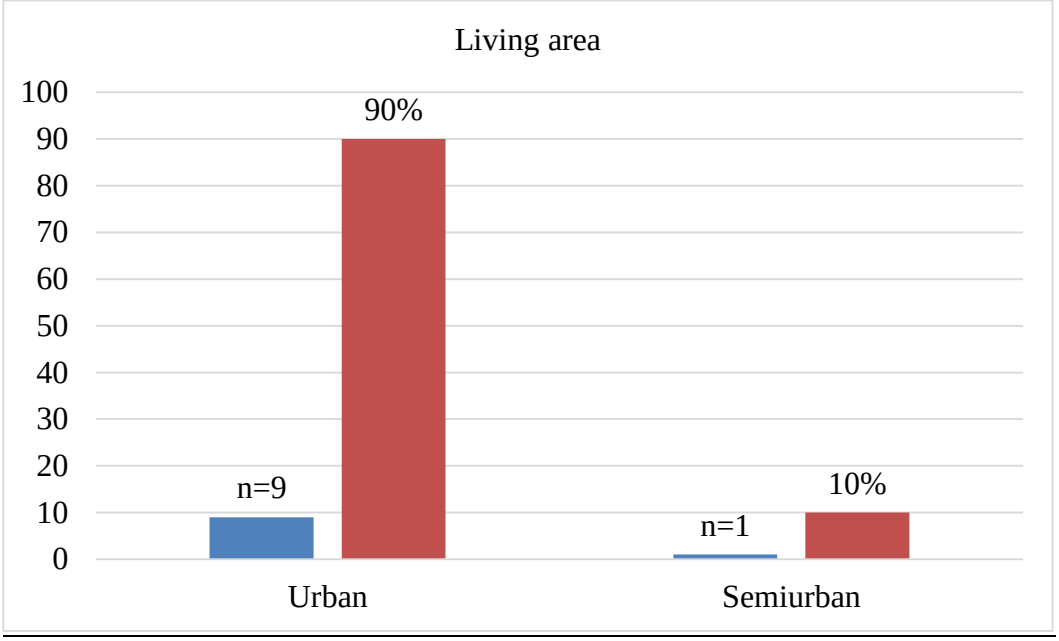


Figure-5: Living area

5.2 Disease related variables:-

5.2.1 Duration of the pain of the participants:

In this study there are the two type duration of the pain between of them the acute and chronic condition, the acute pain were below of 03 months were 60% and the chronic condition were 40% here.

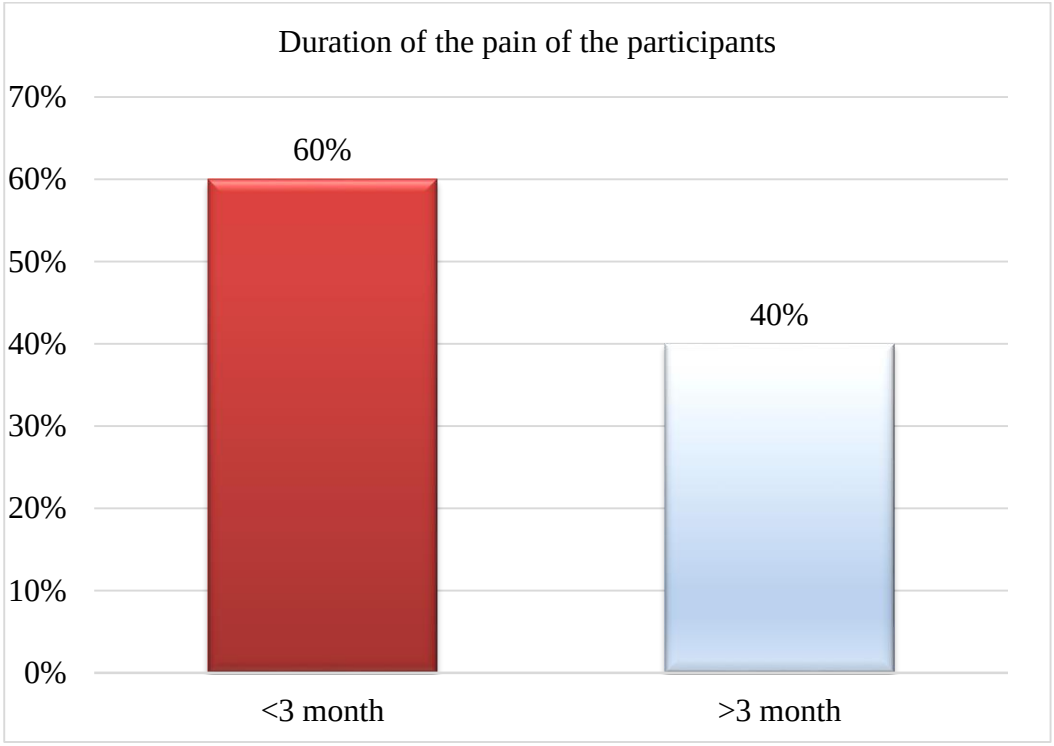


Figure-6: Duration of the pain of the participants

5.2.2 Affected limb of the participants:

There were the pain affected limb of right lower leg were 30%, the left lower leg were 40% and these were the both 30% here.

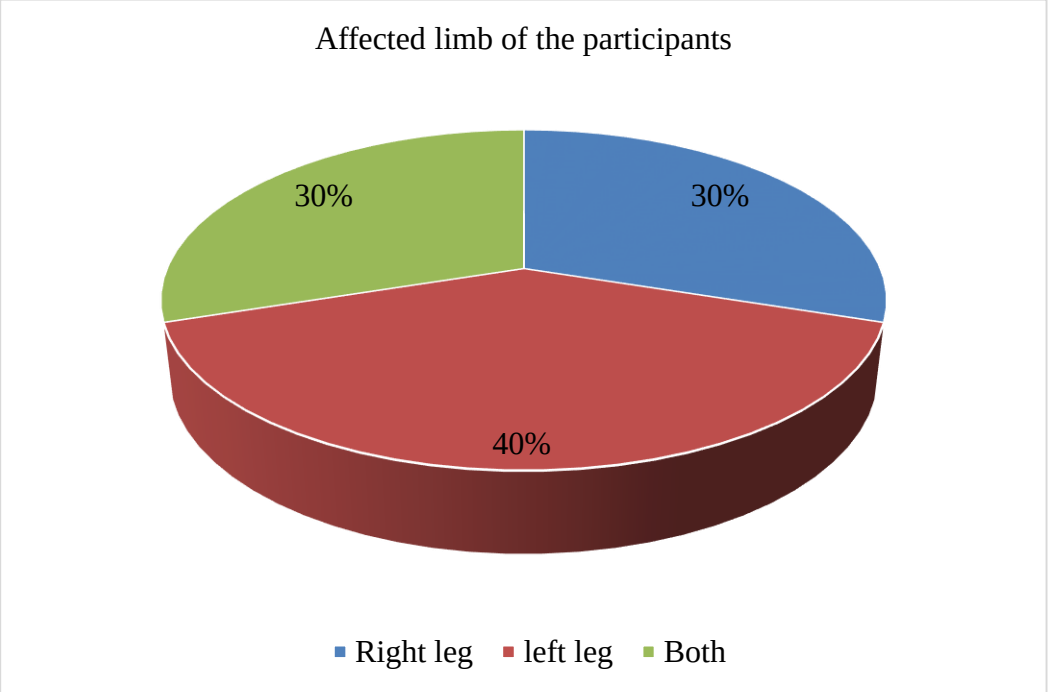


Figure-7: Affected limb of the participants

5.2.3 Behavior of pain of the participants:

That chart shows that among the participants the behavior of the pain was found that occasional 40% (n=4) than the intermittent is 10% (n=1) and the constant of 50% (n=5) was present here.

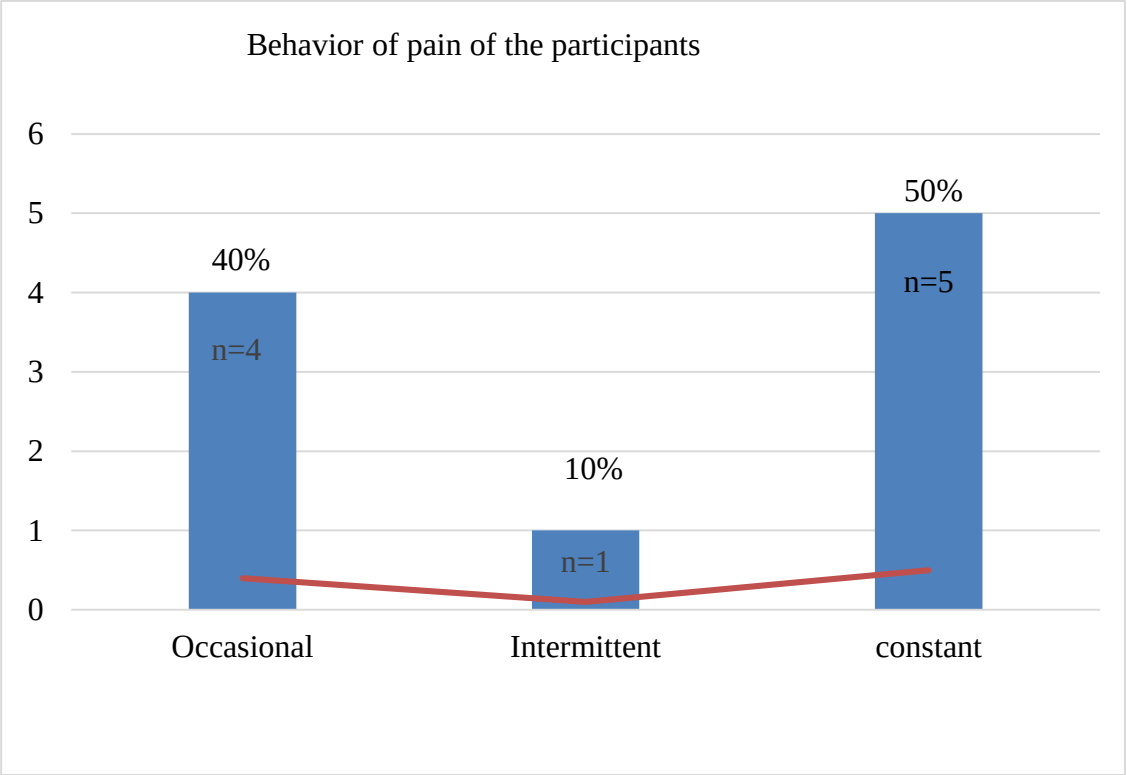


Figure-8: Behavior of pain of the participants

5.2.4 Feel numbness, pass history of pain and use any pain medication of the participants: In this study there were the participants were feeling any numbness among them 30% (n=3) of the participants. They were from total sample the pass history of pain among them 50% (n=5) were the pass history, And the participants were use of any pain medication among them 70% (n=7) present were the use medication from all participants.

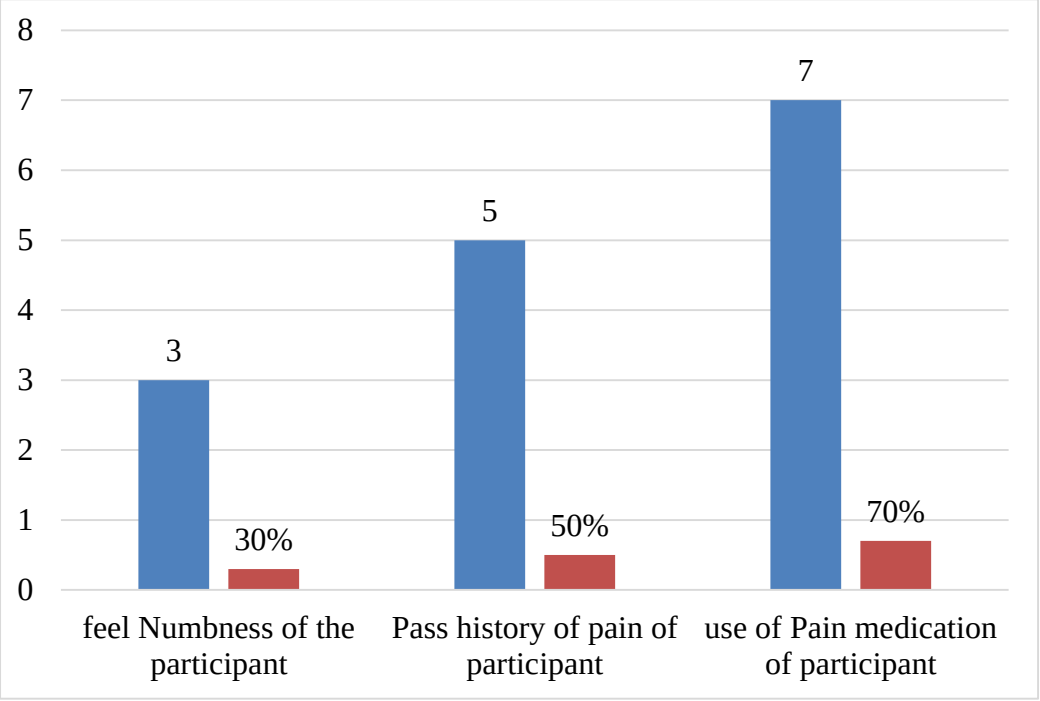


Figure-9 : Feel numbness, pass history of pain and use of any pain medication

5.2.5 Radiation of pain of the participants:

There were from all sample among them the 30% were not radiation, There were among them 40% were radiated buttock region and another 30% were pain radiated thigh region.

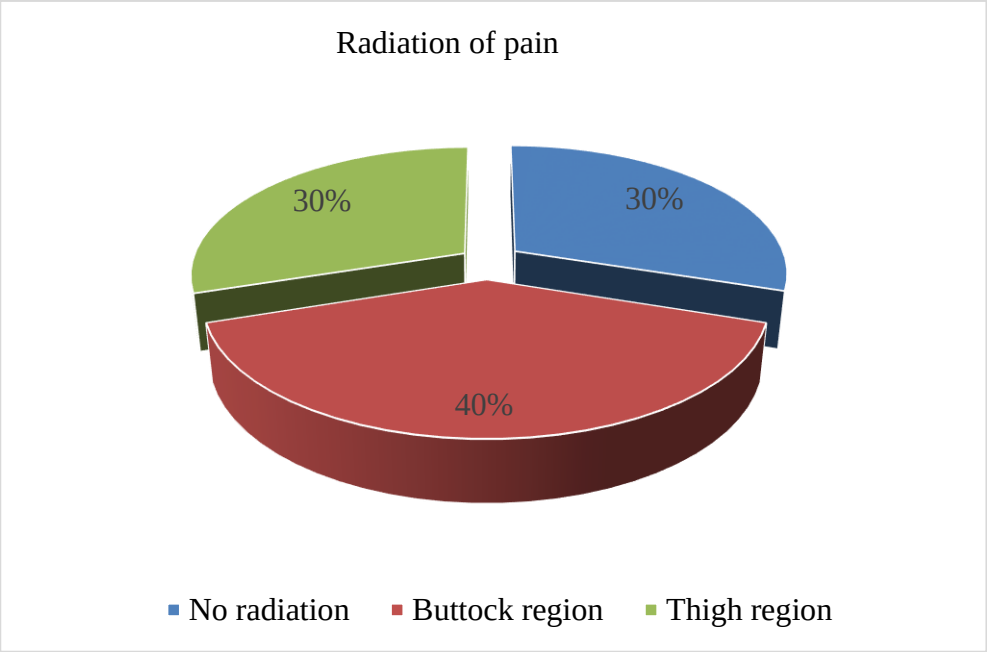


Figure-10:Radiation of pain

5.2.6 Nature of pain of the participant:

There is 10 sample form the nature of pain of the participants among 20% (n=2) were the sharp pain, 40% (n=4) were Dull pain, 30% (n=3) were stabbing and 10% (n=1) were the other condition of pain.

Table-6: Nature of pain

Nature	Frequency	Percent
Sharp	2	20.0
Dul	4	40.0
Stabbing	3	30.0
Other	1	10.0

5.3 Treatment related information:-

5.3.1 Experimental pre and post muscle grading of the participants:

There were the experiment group of pre and post-test of muscle grading among them the pre-test were 10% (n=1) were grade-2, 30% (n=3) were grade-3 and 10% (n=1) were grade-4 Post treatment among them 20% (n=2) were grade-4, 30% (n=3) were grade-5 and there were improving the muscle grade updated to normal.

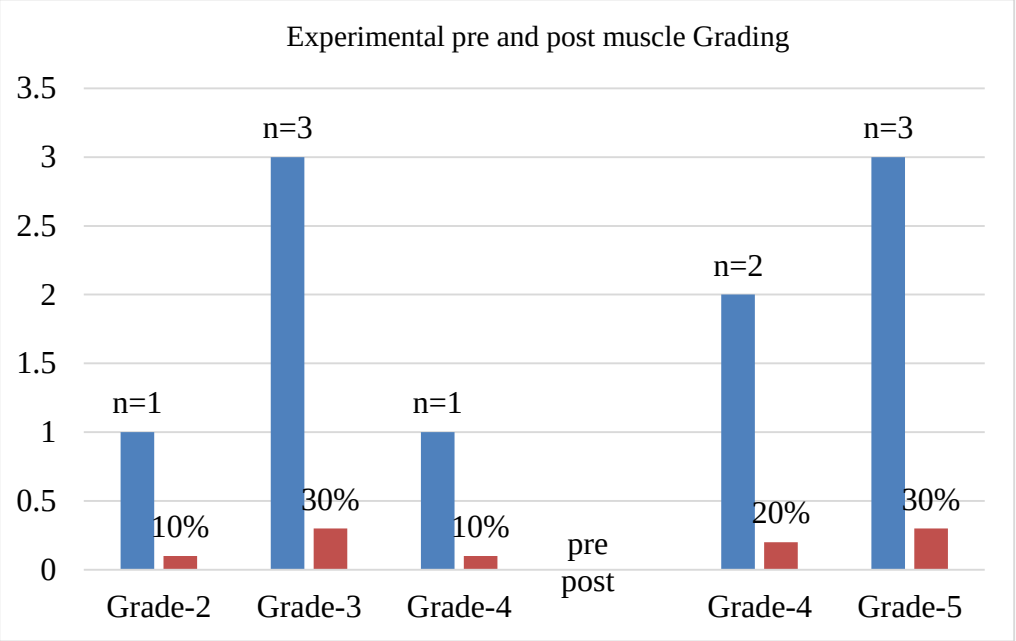


Figure-11: Experimental pre and post muscle Grading

5.3.2 Experimental pre and post-lumber flexion of the participants:

From this sample experimental pre-treatment were 50% (n=5) patients were <40° flexion And post treatment 30% (n=3) were 40° flexion 10% (n=1) patients 45° flexion and 10% (n=1) patients 50° flexion.

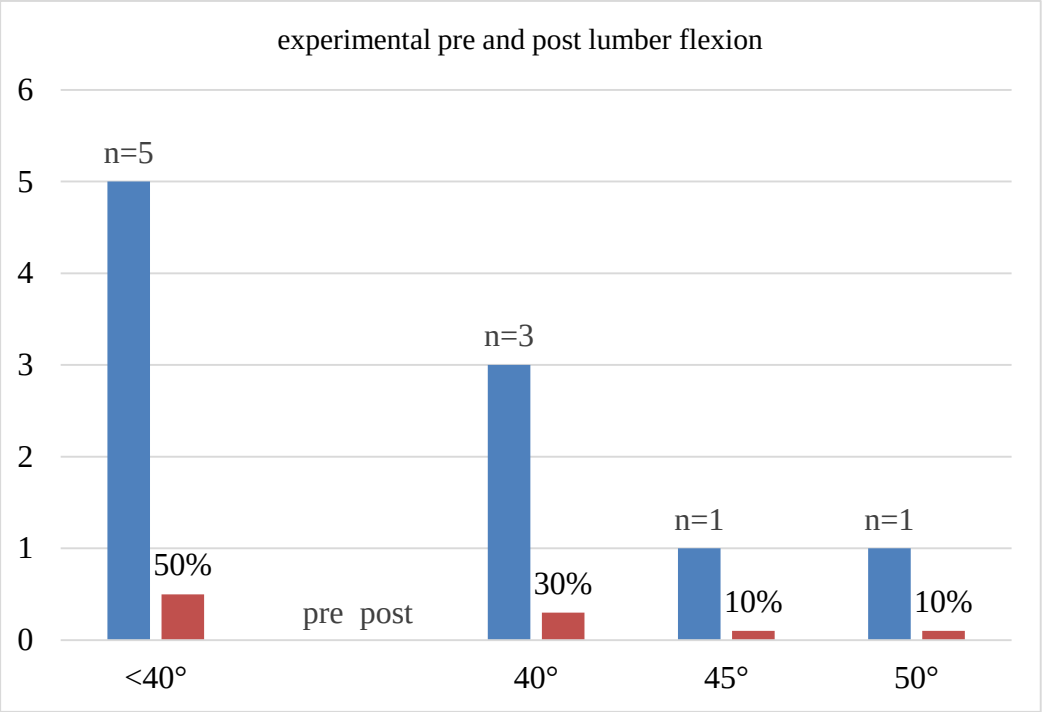


Figure-12:.Experimental pre and post lumber flexion

5.3.3 Experimental pre and post-lumber extension of the participants:

After taking previous pre-treatment were 20% (n=2) patients were 10° extension 30% (n=3) were 15° extension and post were 40% (n=4) patients 20° extension and 10% (n=1) patients extension were 30° here and patients told their extension improving

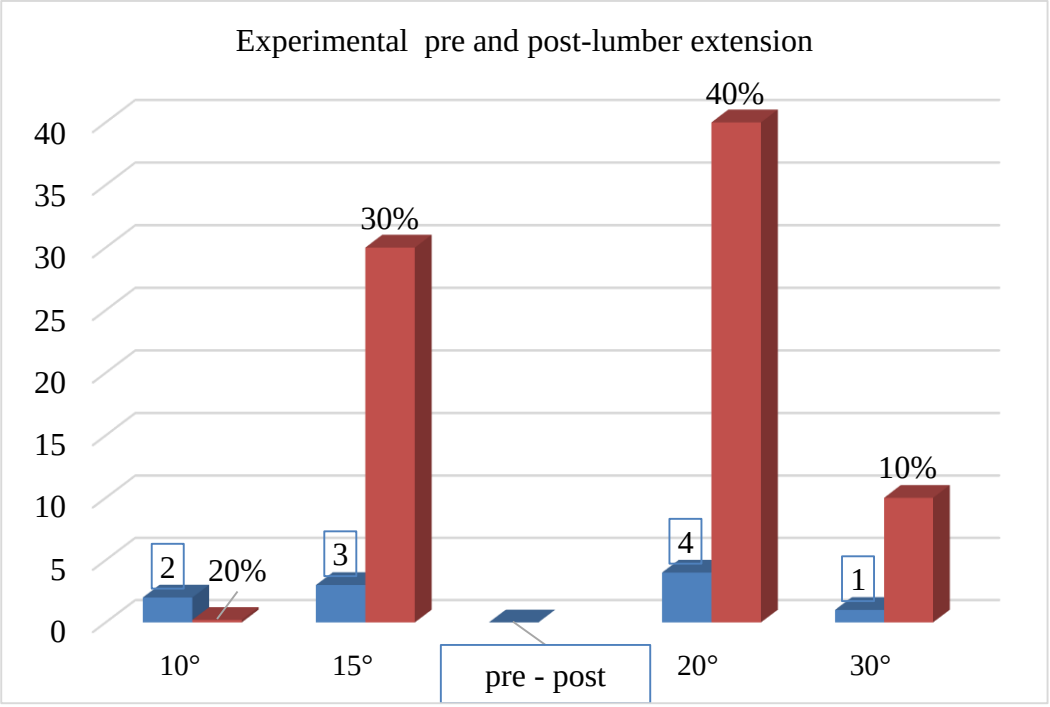


Figure-13: Experimental pre and post-lumber extension

5.3.4 Experimental pre and post severity pain of the participants:

In this study there were the control group pre and post severity of the pain among them pre-test were 30% (n=3) pain were moderate pain, 20% (n=2) pain were severe pain And then post-treatment of pain severity among them 30% (n=3) is mild and 20% (n=2) were moderate and they improving from pain progressively.

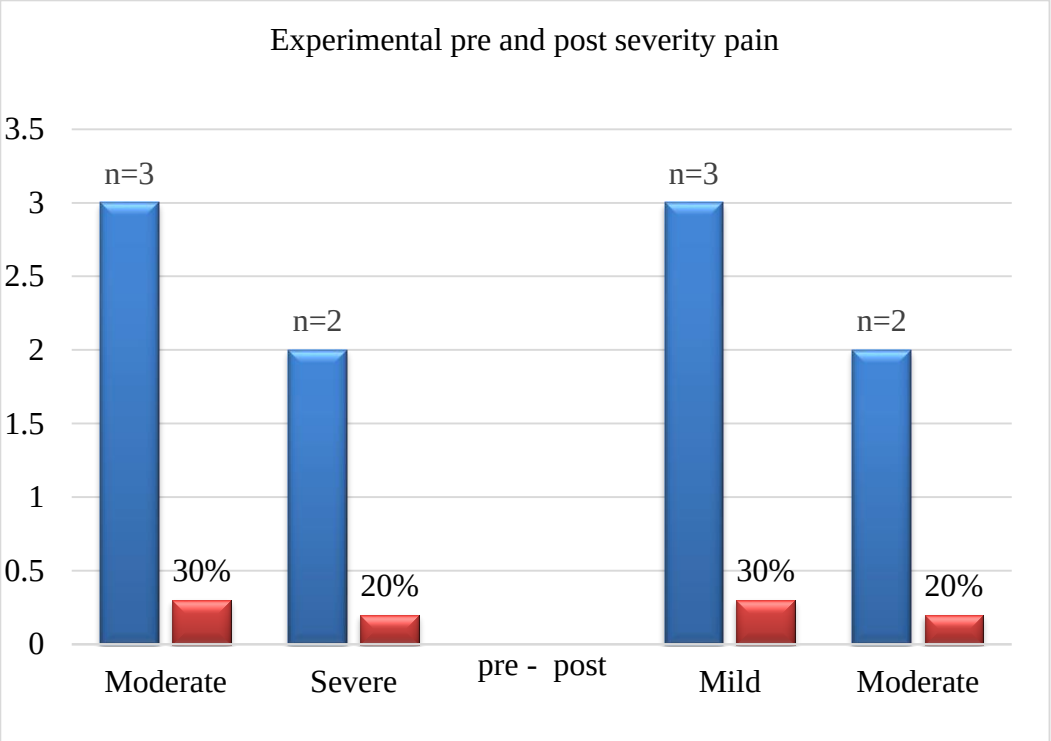


Figure-14: Experimental pre and post severity pain

5.3.5 Control pre and post severity pain of the participants:

In this study there were the control group pre and post severity of the pain among them pre-test were 10% (n=1) pain were mild, 30% (n=3) pain were moderate and 10% (n=1). And then post-treatment of pain severity among them 50% (n=5) is mild and they improving from pain progressively.

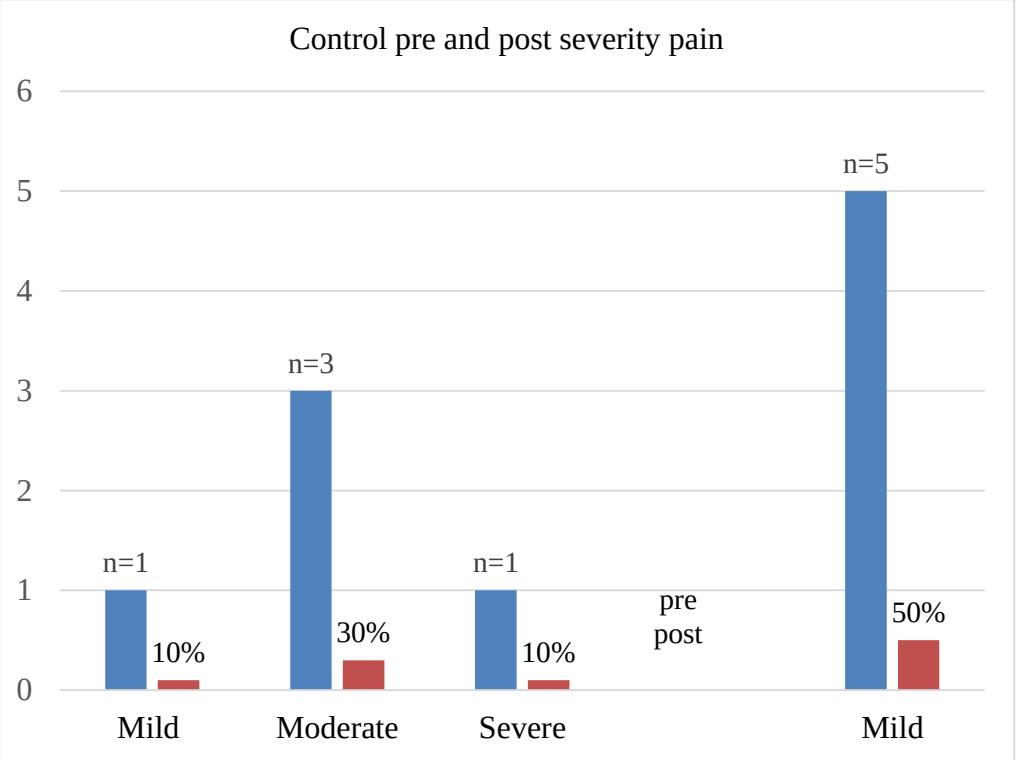


Figure-15: Control pre and post severity pain

5.3.6 Experimental pre and post ODI index of the participants:

In this study there are ODI in Experimental group pre-test were 10% (n=1) 21%-40% (Moderate) 20% (n=2) 41%-60% (severe disability) and 20% (n=2) 61%-80% (crippled) Experimental post ODI index were among them 40% (n=4)0%-20% (minimal disability) and 10% (n=1) 21%-40% (moderate).

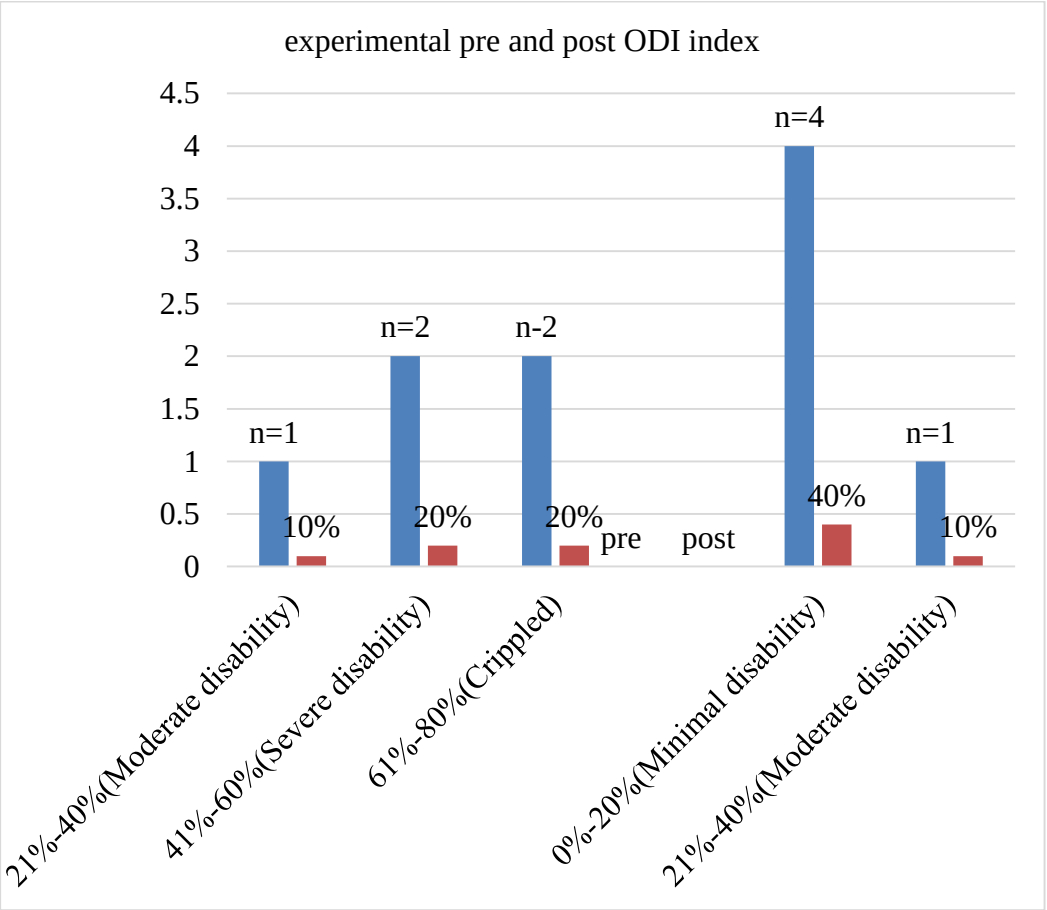


Figure-16: Experimental pre and post ODI index

5.3.7 Control pre and post muscle Grading of the participants:

There were the control group of pre and post-test of muscle grading among them the pre- test were 20% (n=2) were grade-3 and 20% (n=2) were grade-4 Post treatment among them 50% (n=5) were grade-5 and there were improving the muscle grade updated to normal.

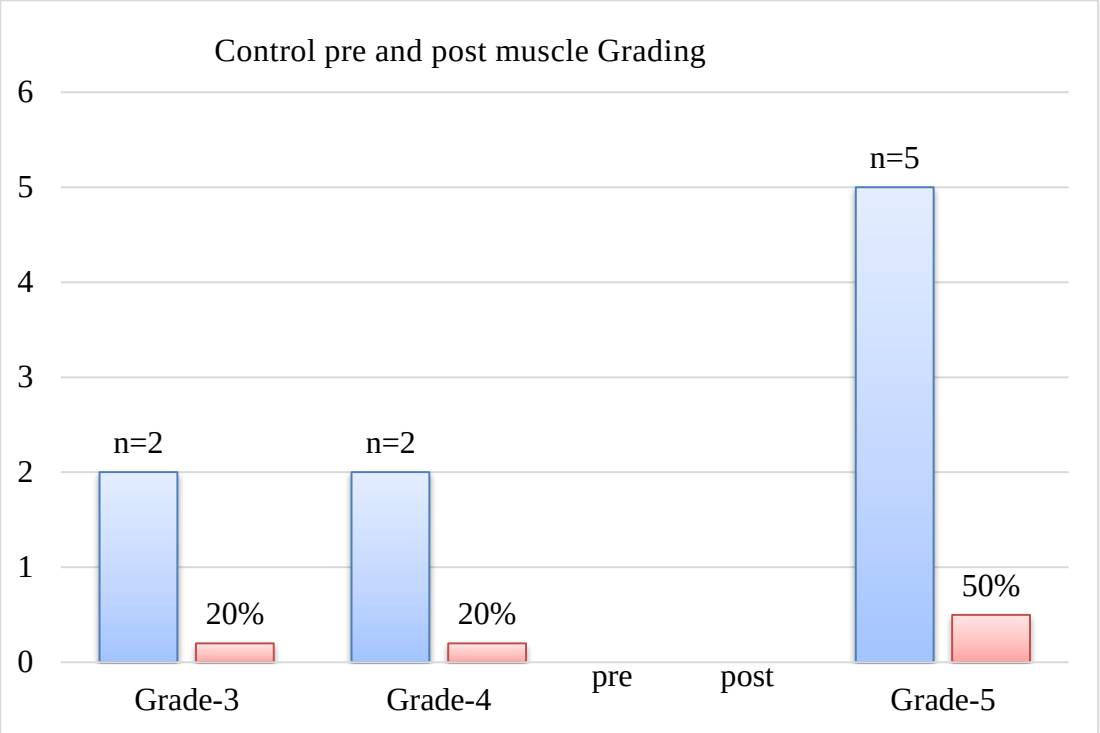


Figure-17: Control pre and post muscle Grading

5.3.8 Control pre and post lumber flexion of the participants:

There the sample control pre-treatment were 30% (n=3) patients 45° flexion and 20% (n=2) patients flexion were 40° here, From this sample control post-treatment were 20% (n=2) patients were 50° flexion, 20% (n=2) were 45° flexion, and 10% (n=1), and patients told their flexion improving.

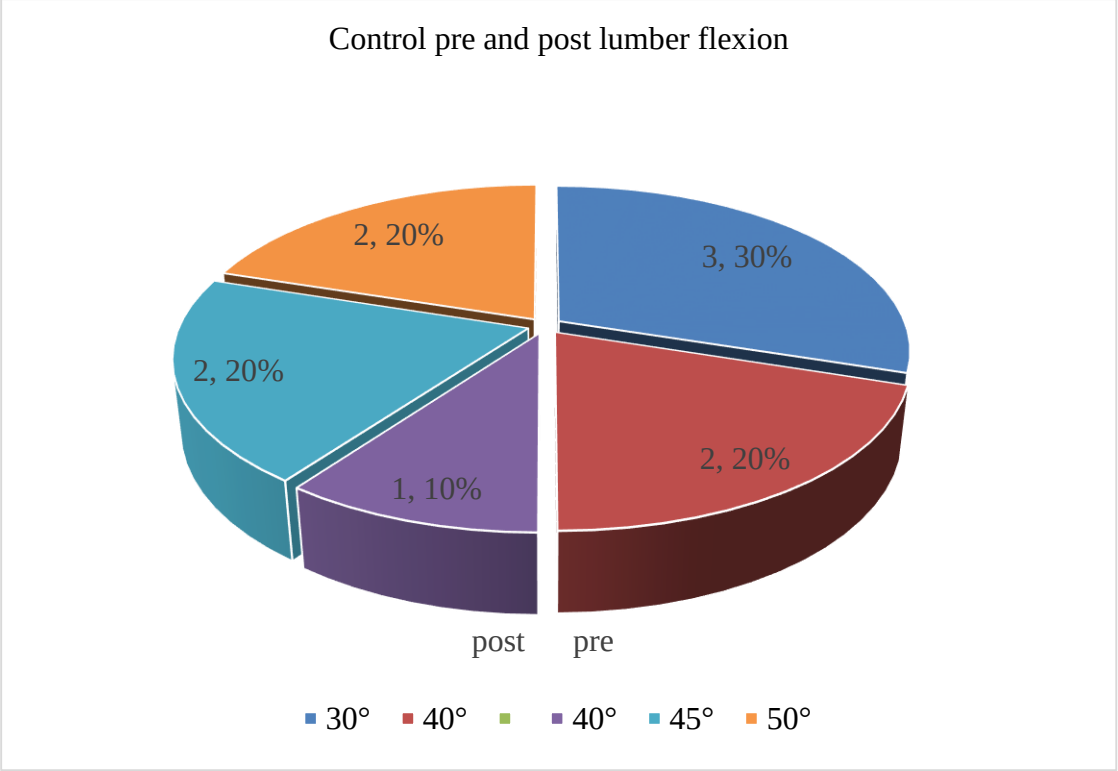


Figure-18. Control pre and post lumber flexion

5.3.9 Control pre and post lumber extension of the participants:

There the sample control pre-treatment were 10% (n=1) patients 10° extension and 30% (n=3) patients extension were 15° and 10% (n=1) Extension 20° here, From this control post-treatment were 40% (n=4) patients were 20° extension, 10% (n=1) were 25° extension, and patients told their extension improving.

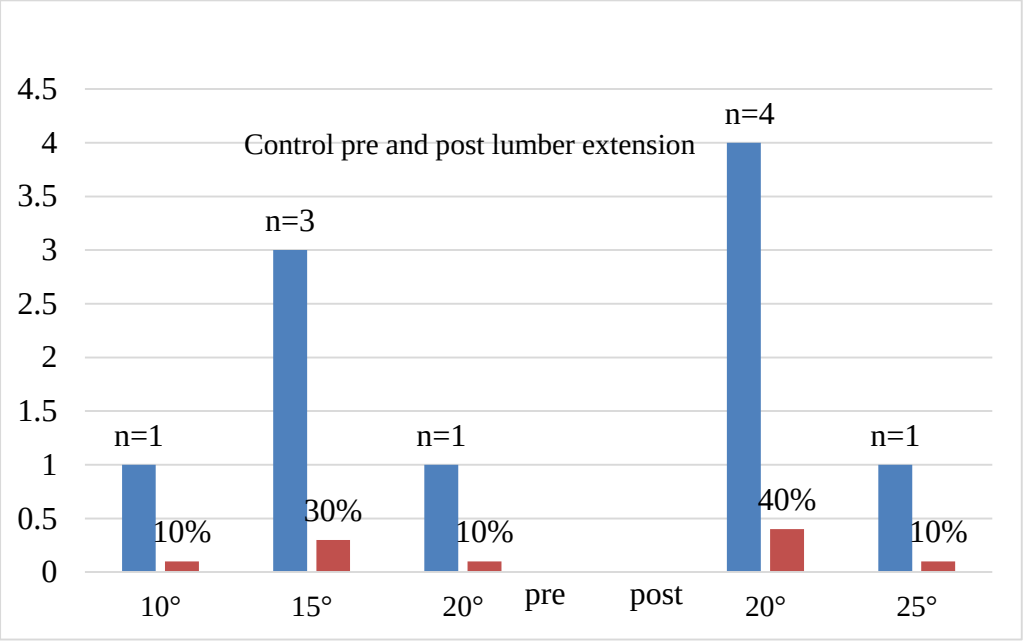


Figure-19: Control pre and post lumber extension

5.3.10 Control pre and post ODI index of the participants:

In this study there are ODI in control group pre-test were 10% (n=1) 21%-40% (Moderate disability) 40% (n=4) 61%-80% (crippled) Control post-test ODI index were among them 20% (n=2) 41%-60% (severe disability) and 30% (n=3) o%-20% (minimum disability).

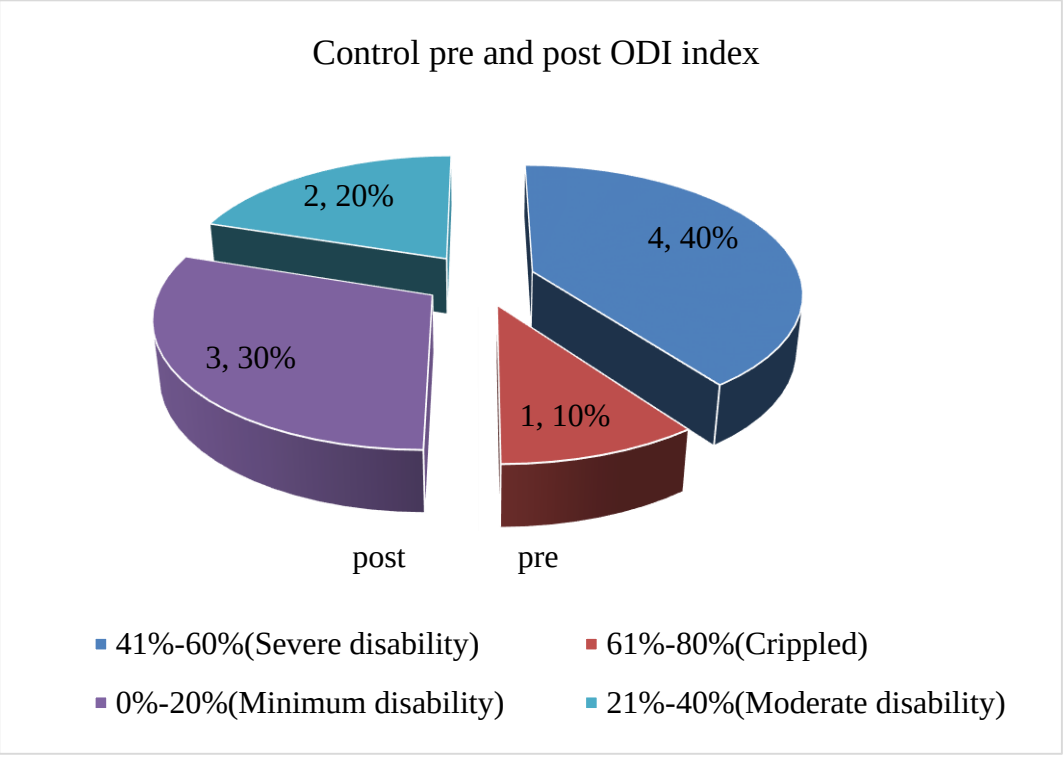


Figure-20: Control pre and post ODI index

Level of significance:

Table-7: Association between pre-treatment and post treatment (Control group and Experimental group).

No	Association	T-test	P value	Level of significance
1	Experimental pre lumber flexion and Experimental post lumber flexion	7.060	.002	Statistically significant
2	Experimental pre lumber extension and Experimental post lumber extension	4.811	.009	Statistically significant
3	Experimental pre severity of pain and - Experimental post severity of pain	3.162	.034	Statistically significant
4	Experimental pre ODI index and Experimental post ODI index	6.325	.003	Statistically significant
5	Control pre lumber flexion and Control post lumber flexion	4.707	.009	Statistically
6	Control pre lumber extension and Control post lumber extension	6.000	.004	Statistically significant
7	Control pre severity of pain and Control post severity of pain	3.162	.034	Statistically significant
8	Control pre ODI index and Control post ODI index	9.000	.001	Statistically significant

CHAPTER V: DISCUSSION

The study was indicated a process that could be continuing to establish the result. Here the aim of this study could be achieved if the researcher could show effective support. The purpose of this study was to evaluate the effectiveness of the Manual Traction with conventional physiotherapy compare to only conventional physiotherapy for Mechanical low back pain In this experimental study 10 patients were enrolled and 5 patients were assigned to control Group who receive only conventional physiotherapy. The rest of 5 patients were assigned to Experimental group who received Manual Traction along with conventional physiotherapy. Each group attended for 5 sessions of treatment within two weeks in the Saic Physiotherapy and Rehabilitation Services (Dhaka), Modern Physiotherapy and Rehabilitation Center (Dhaka) And Estern Care Hospital Physiotherapy unit (Dhaka) The outcome was measured by using Visual analog scale (VAS) for pain intensity and Oswestry Disability Index (ODI) for measuring disability. In this study there were total 10 participants. The mean age of experimental group was 45 years and the mean age of control group is 39 years

This study identified a total of 37 traction RCTs that varied greatly in their method of traction Intervention The RCTs included several type of traction mechanical 57 %, auto-traction 16 % manual 10.8 %, gravitational 8.1 % and aquatic 5.4 % there was also great variability in the types of traction force, rhythm, session duration and treatment frequency used in the RCTs. Patient characteristics were a mixture of acute, subacute and chronic LBP; with or without sciatica (Alrwaily.et al., 2018).

This article included nine RCTs (981 participants) in this review. Five studies were conducted in Europe and four in North America. Sample sizes ranged from 33 to 351. The mean age across trials ranged between 32.0 and 43.7 years (Marin et al., 2017).

This study found that experimental group age Meen±SD=45±13.172 Control group age Meen±SD=39.80±10.756. Total participants were 10. Among them 20% (n=2) were age below 30 years, 30% (n=3) were between age 30-40 of age, 20% (n=2) were between 41 to 50 years of age and rest of them 30% (n=3) were age more than 50.

This study found 10 sample form the nature of pain of the participants among 20% (n=2) were the sharp pain, 40% (n=4) were Dull pain, 30% (n=3) were stabbing and 10% (n=1) were the other condition of pain.

In this study there were the control group pre and post severity of the pain among them pre-test were 30% pain were moderate pain, 20% pain were severe pain And then post-treatment of pain severity among them 30% is mild and 20% were moderate and they improving from pain progressively.

Similar study found to Ninety-five participants provided a treatment diary and were classified as no pain, improved, unchanged, and worsened. Approximately 83.2% of participants reported a positive response (Tadano et al., 2019).

In this study there are ODI in Experimental group between pre-test and post-test were Experimental pre ten percent Moderate disability twenty percent severe disability and twenty percent crippled disability Experimental post ODI index were among them 40% minimal disability and 10% moderate. the researcher found a significant ($p < .003$) improvement in Disability on ODI index.

The participants receiving Extension-Oriented Treatment Approach and traction experienced greater change after 2 weeks on the Oswestry questionnaire, however the magnitude of the treatment effect was at the margins of clinical significance (Fritz et al., 2010).

This research found that experimental group pre and post severity of the pain among them pre-test were 30% pain were moderate pain, 20% pain were severe pain And then post-test severity of pain among them 30% mild pain and 20% were moderate and they improving from pain progressively ($p < .034$).

This research found that mixed symptom patterns (acute, subacute and chronic LBP with and without sciatica), there was low- to moderate-quality evidence that traction may make little or no difference in pain intensity (Wegner et al., 2013).

CHAPTER VI: CALCULATION AND RECOMMENDATION

Conclusion

The result of the study have identified that the effectiveness of manual traction conventional physiotherapy was better than the conventional physiotherapy alone for radiating Low Back Pain patients which was a Quantitative experimental study. Manual traction can be an effective therapeutic approach for patient with mechanical low back pain. Participants in the conventional physiotherapy with manual traction group showed a greater benefit than those in the only conventional physiotherapy group. The result indicate that the significant changes in both groups are due to the selection of a well-defined population of mechanical low back pain patients using specific inclusion and exclusion criteria. It may be helpful for patient with mechanical low back pain to increase return to normal daily activities, work and to measure longer term effects for determining cost effectiveness of manual traction in conjunction with conventional physiotherapy as an intervention for mechanical low back pain.

Recommendation

In this study, the researcher provided 5 session of treatment to both groups and measure pain intensity and disability in different functional positions. As a consequence of the research it is recommended that with further well- controlled double blinding study include comparison of the conventional physiotherapy with manual traction with the conventional physiotherapy alone and assessing effects and efficacy of these treatments. In particular, since the back is sensitive area this is a frequent cause of functional disability and pain. This study directed towards an assessment of the specific management in treating back of specific back problem in an outpatient, if pursued further could prove extremely fruitful. Furthermore, chronic associated with many cases of back pain, and the extensive pathology that exists in the surrounding structure that was joints, tissues and bone, may suggest a further study of a longer duration as this may give even better results.

The researcher did not diagnose specific spinal movement involvement and did not traction specific joints. It is recommended to do further study with diagnosis of specific spine involvement and traction in lumber region. These samples were selected between the age group of 18-60 years, but the researcher could not find out which age group was more effective. If the most effective age group were found then the study will be more

effective. The researcher did random assigned in both group rather than random selection.

That’s why researcher recommended to do further study with enough time and by maintaining random selection to make the study more valid.

CHAPTER V: REFERENCE

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APPENDICES

Inform consent (Bengali)

সম্মতিপত্র

উত্তর দাতার আইডি নম্বর

প্রিয় অংশগ্রহণকারী,

আমি সোহেল আরমান এবং সহকারী রিসার্চার মোঃ আরিফুল ইসলাম সাইক কলেজ অব মেডিকেল সাইন্স এন্ড টেকনোলজি (এস.সি.এম.এস.টি)-এর বিএসসি ইন ফিজিওথেরাপী বিভাগের ফাইনাল বর্ষের ছাত্র। আমরা বিএসসি ইন ফিজিওথেরাপী ডিগ্রী সম্পন্ন করতে গবেষণার অংশ হিসেবে "**ইফেক্ট অফ ম্যানুয়াল ট্রাকসন এলং উইথ কনভেনশনাল ফিজিওথেরাপি অন ম্যাকানিক্যাল লো ব্যাক পেইন**" শিরোনামের একটি গবেষনার কাজ করছি। এখানে আপনার সামাজিক-জনতাত্ত্বীক তথ্য, আপনার কোমর ব্যথায় ম্যানুয়াল ট্রাকসনের কার্যকারিতা সম্পর্কে কিছু প্রশ্ন দেয়া আছে যা আপনাকে পুরণ করতে হবে।আপনার এই সাক্ষাতকার দিতে ১৫-২০ মিনিট সময় লাগবে। এখানে প্রশ্নাবলীর একটি তালিকা দেয়া আছে এবং আপনাকে প্রত্যেকটি প্রশ্নের উত্তর দিতে হবে। এই গবেষণায় প্রাপ্ত তথ্য শুধুমাত্র শিক্ষা ক্ষেত্রে ব্যবহার করা হবে এবং অংশগ্রহণকারীর ব্যক্তিগত তথ্য সম্পূর্ণ গোপণ রাখা হবে, অন্য কোথাও প্রকাশ করা হবেনা। গবেষণা চলাকালীন সময়ে অংশগ্রহণকারী কোনরকম দ্বিধা বা ঝুঁকি ছাড়াই যেকোন সময় এটাকে বাদ দিতে পারবেন। আপনার একান্ত সহযোগীতা কামনা করছি।

অংশগ্রহণকারীর ঘোষণা

আমাকে এই নিরীক্ষার জন্যে আমন্ত্রন জানানো হয়েছে। আমাকে সম্পূর্ণ প্রশ্নগুলো পড়ে বুঝানো হয়েছে এবং আমি কোন ধরণের দ্বিধা ছাড়াই উত্তর দিয়েছি। আমি লক্ষ্য করেছি, এই গবেষণায় আমার অংশগ্রহণ সম্পূর্ণ স্বেচ্ছায় এবং কোন রকম ঝুঁকি ছাড়াই, আমি যে কোন সময় এটাকে বাদ দিতে পারব। আমি এই গবেষণায় অংশগ্রহণে সম্পূর্ণ সম্মতি জ্ঞাপন করছি।

অংশগ্রহণকারীর

নামঃ.....

স্বাক্ষর এবং তারিখঃ ..... টিপসইঃ.....

Consent form (English)

Respondent ID no

Dear participant.

We are SOHEL ARMAN and MD ARIFUL ISLAM students of Bachelor of physiotherapy program in the Department of physiotherapy SAIC Institute of Medical Technology affiliated by UNIVERSITY OF DHAKA conducting the study entitled **"EFFECT OF MANUAL TRACTION ALONG WITH CONVENTIONAL PHYSIOTHERAPY ON MECHANICAL LOW BACK PAIN"** as a part my thesis work for the partial fulfillment of Bachelor degree. There are list of question you need to fill up which include socio-demographic, effect of manual traction. For spending your time to participate in this self-administered interview which will take around 15-20 minutes. There are list of questionnaire and you need to fill up each answer. The information gained from this questionnaire will be used for academic purpose and will be kept confidential. You participation in this study is totally voluntarily and you have the right to withdraw from the interview without any clarification at any moment. You can ask any question to the researcher regarding the study to meet up your quarry. Looking forward your kind cooperation.

Declaration of the participant

I have been answer in this survey. The foregoing information has been read to me and that have been answered to my satisfaction. I have noticed that my participation in this study is totally voluntary and I have the right to withdraw from the interview at any clarification. I give my consent voluntarily to be participants in this study.

Respondent name:

…….

Signature and date: …… Finger print:

……

Witness signature:

……

Questionnaire (Bengali)

ইফেক্ট অফ ম্যানুয়াল ট্রাকসন এলং উইথ কনভেনশনাল ফিজিওথেরাপি অন ম্যাকানিক্যাল লো ব্যাক পেইন

নিজস্ব তথ্য নাম

ঃ.....

ঠিকানা

ঃ.....

সাক্ষাৎকারের সময়

ঃ.....

মোবাইল নং

ঃ.....

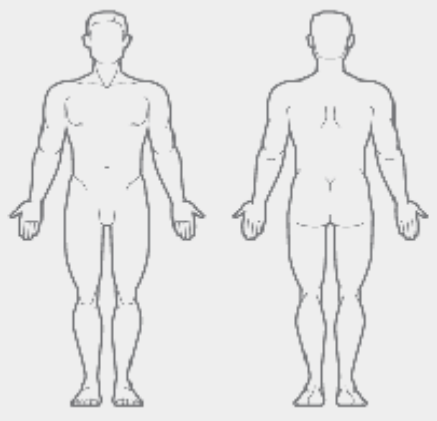
আত্ব-সামাজিক পরিচিতি

১. বয়স :	.....বয়স?	
২.লিঙ্গ :	১) ছেলে ২) মেয়ে	
৩. বি,এম,আই ক) শরীরের ওজন খ)উচ্চতা :	.....কেজি .....ইঞ্চি	
৪. বৈবাহিক অবস্থা:	১) বিবাহিত ২) অবিবাহিত ৩) অন্যান্ন	
৫.পেশা :	১) গৃহিনী ২) ছাত্র/ছাত্রী ৩) শ্রমিক	

	৪) ব্যাবসায়ী ৫) চাকুরীজিবী ৬) অন্যান্ন	
৬. আপনার পরিবারের মাসিক আয়	.....টাকা	
৭.শিক্ষাগত যোগ্যতা	১) নাই ২)প্রাথমিক ৩)মাধ্যমিক ৪) উচ্চমাধ্যমিক ৫) স্নাতক ৬) স্নাতকোত্তর	
৮. বসবাসের স্থান	১) গ্রাম ২) শহর ৩) উপশহর	

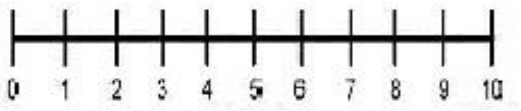
রোগ বিষয়ক তথ্য

১. কত দিন ধরে ব্যথা?	.....মাস/দিন	
২. আক্রান্ত অঙ্গ	১) ডান পা ২) বাম পা ৩) দুইটিই	
৩. ব্যথার ধরন	১) অনিয়মিত ২) মাঝেমধ্যে ৩) সবসময়	
৪. আপনি কি অসারতা অনুভব করেন?	১) হ্যা ২) না	
৫. এই ব্যথার বিষয় এ আগের কোন তথ্য আছে?	১) হ্যা ২) না	

৬. আপনি কি ব্যথা নাশক খান ?	১) হ্যা ২) না	
৭. কোথায় কোথায় ব্যথা ছড়ায়?	১) ছড়ায় না ২)কোমরের অংশে ৩)পায়ের অংশে 	
৮. ব্যথার প্রকৃতি	১) তীব্র ২) নিস্তেজ ৩) আঘাত প্রাপ্ত ৪) অন্যান্য	

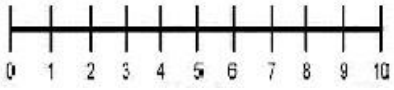
চিকিৎসা সংক্রান্ত তথ্য (চিকিৎসার আগে)

১. মাংসপেশী ক্ষমতা পরীক্ষা (অক্সফোর্ড মাসেল গ্রেডিং)	১) গ্রেড - ০ ২) গ্রেড – ১ ৩) গ্রেড -২ ৪) গ্রেড -৩ ৫) গ্রেড -৪ ৬) গ্রেড -৫	
২. লাম্বার ফ্লেক্সন	..... ডিগ্রী	
৩.লাম্বার এক্সটেনসন	..... ডিগ্রী	

৪. ব্যথার প্রখরতা	১) সামান্য ব্যথা ২) মধ্য পন্থী ব্যথা  ৩) তীব্র ব্যথা	
৫.অস-ওয়সট্রি ডিজঅ্যাবিলিটি ইনডেক্স	১) 0% - ২১% (সামান্য অক্ষমতা) ২) ২১% - ৪০% (মধ্যম অক্ষমতা) ৩) ৪১% - ৬০% (তীব্র অক্ষমতা) ৪) ৬১% -৮০ % (বিকল হওয়া) ৫) ৮১% -১০০ % (বেড বাাওন্ডেড)	

চিকিৎসা সংক্রান্ত তথ্য (চিকিৎসার পরে)

১. মাংসপেশী ক্ষমতা পরীক্ষা (অক্সফোর্ড মাসেল গ্রেডিং)	১) গ্রেড - ০ ২) গ্রেড – ১ ৩) গ্রেড -২ ৪) গ্রেড -৩ ৫) গ্রেড -৪ ৬) গ্রেড -৫	
২. লাম্বার ফ্লেক্সন	..... ডিগ্রী	
৩.লাম্বার এক্সটেনসন	..... ডিগ্রী	
৫. ব্যথার প্রখরতা	১) সামান্য ব্যথা ২) মধ্য পন্থী ব্যথা ৩) তীব্র ব্যাথা	

		
৪.অস-ওয়সট্রি ডিজঅ্যাবিলিটি ইনডেক্স	১) 0% - ২১% (সামান্য অক্ষমতা) ২) ২১% - ৪০% (মধ্যম অক্ষমতা) ৩) ৪১% - ৬০% (তীব্র অক্ষমতা) ৪) ৬১% -৮০ % (বিকল হওয়া) ৫) ৮১% -১০০ % (বেড বাাওন্ডেড)	

অস-ওয়সট্রি কোমর ব্যাথার অক্ষমতা সংক্রান্ত প্রশ্নপত্র

স্কোর **সেকসন 0১: ব্যাথার তীব্রতা**

0. আমি ব্যথার ওষধ ছাড়া ব্যাথা সহ্য করতে পারি
১. ব্যথা খারাপ কিন্তু আমি ব্যথার ওষধ গ্রহন করা ছাড়া ব্যথা সহ্য করতে পারি
২. ওষধ ব্যথাকে সম্পূর্ণভাবে নিরাময় করতে পারে
৩. ওষধ ব্যথাকে খুব সীমিতভবে ভাবে নিরাময় করতে পারে
৪. ওষধ ব্যথাকে খুব অল্প ভাবে নিরাময় করতে পারে
৫. আমি ব্যথা নিরাময়ে ওষধ ব্যবহার করি না

চিকিৎসার আগে	চিকিৎসার পরে

স্কোর **সেকসন 0২: ব্যাক্তিগত যত্ন (ওয়াসিং, ড্রেসিং ইত্যাদি)**

০. আমি সাধারনত নিজেকে দেখাশুনা করতে পাড়ি, কোন ব্যথা ছাড়া ।
১. আমি সাধারনত নিজেকে দেখাশুনা করতে পাড়ি, কিন্তু এটা কিছুটা বেদনাদায়ক ।
২. নিজেকে দেখাশুনা করা বেদনাদায়ক,কিন্তু আমি সময় নিয়ে এবং সতর্কতার সাথে করি।
৩. প্রতিদিন আমার কিছুটা সাহায্যের দরকার হয়,কিন্তু অধিকাংশ কাজ নিজেই করতে পাড়ি
৪. আমার নিজের কাজ এর জন্য দিনভর অন্যের সাহায্য দরকার হয় ।
৫. আমি কষ্ট করেও কাপর পড়তে ও পরিষ্কার করতে পাড়ি না এবং বিশ্রাম এ থাকি ।

চিকিৎসার আগে	চিকিৎসার পরে

স্কোর **সেকসন ০৩: উত্তোলন**

0. আমি ব্যথা ছাড়া ভারী ওজন উত্তোলন করতে পারি ।
১. আমি ভারী ওজন তুলতে পারি কিন্তু এটা কিছুটা ব্যথা তৈরি করে ।
২. আমি ব্যথার জন্য মেঝে থেকে ভারী ওজন তুলতে পারি না, কিন্তু আমি সুবিধামত স্থান থেকে ওজন তুলতে পারি । যেমন: টেবিল হতে ।
৩ আমি ব্যথার জন্য মেঝে থেকে ভারী ওজন তুলতে পারি না, কিন্তু আমি সুবিধামত স্থান থেকে অল্প অথবা মোটামোটি ওজন তুলতে পারি । যেমন: টেবিল হতে ।
৪. আমি খুবই অল্প ওজন তুলতে পারি ।
৫. আমি কোন ওজন তুলতে অথবা বহন করতে পারি না ।

চিকিৎসার আগে	চিকিৎসার পরে

স্কোর **সেকসন ০৪: হাটা**

0. ব্যথা আমাকে যেকোন দুরত্বে হাটতে কোন বাধা সৃষ্টি করতে পারেনা ।
১. ব্যথা আমাকে এক মাইল এর বেশি হাটতে বাঁধা সৃষ্টি করে ।
২. ব্যথা আমাকে আধা মাইল এর বেশি হাটতে বাঁধা সৃষ্টি করে ।
৩. ব্যথা আমাকে ১০০ গজ এর বেশি হাটতে বাঁধা সৃষ্টি করে ।
৪. আমি শুধু মাত্র লাঠি অথবা ক্রাচ ব্যাবহার করে হাটতে পারি ।
৫. আমি বেশিরভাগ সময বিছানায় থাকি ।

চিকিৎসার আগে	চিকিৎসার পরে

স্কোর **সেকসন ০৫ : বসা**

০. আমি যেকোন চেয়ারে আমার ইচ্ছে মত বসতে পারি ।

১. আমি শুধু মাত্র আমার পছন্দের চেয়ারে নিজের ইচ্ছা মত বসতে পারি ।

২. আমি ব্যথার জন্য একঘন্টার বেশি বসতে পারি না ।

৩. আমি ব্যথার জন্য আধাঘন্টার বেশি বসতে পারি না ।

৪. আমি ব্যথার জন্য ১০ মিনিটি এর বেশি বসতে পারি না ।

৫. আমি ব্যথার জন্য সব সময় বসতে পারি না ।

চিকিৎসার আগে	চিকিৎসার পরে

স্কোর **সেকসন ০৬ : দাড়ানো**

০. আমি ব্যথা ছাড়া আমার ইচ্ছা মত দাড়িয়ে থাকতে পাড়ি ।

১. আমি ব্যথা ছাড়া আমার ইচ্ছা মত অনেকক্ষন দাড়িয়ে থাকতে পাড়ি, কিন্তু এটা ব্যথার সৃষ্টিকরে।

২. আমি ব্যথা জন্য এক ঘন্টার বেশী দাড়িয়ে থাকতে পাড়ি না ।

৩. আমি ব্যথা জন্য আধা ঘন্টার বেশী দাড়িয়ে থাকতে পাড়ি না ।

৪. আমি ব্যথা জন্য ১০ মিনিট এর বেশী দাড়িয়ে থাকতে পাড়ি না ।

৫. আমি ব্যথা জন্য সব সময় দাড়িয়ে থাকতে পাড়ি না ।

চিকিৎসার আগে	চিকিৎসার পরে

স্কোর **সেকসন ০৭ : ঘুমানো**

০. ব্যথা আমার ঘুমের কোন সমস্যা তৈরি না ।

১. আমি একমাত্র বিছানাতে ভাল ঘুমাতে পাড়ি ।

২. আমি বিছানায় ছয় ঘন্টার কম ঘুমাতে পাড়ি ।

৩. আমি বিছানায় চার ঘন্টার কম ঘুমাতে পাড়ি ।

৪. আমি বিছানায় দুই ঘন্টার কম ঘুমাতে পাড়ি ।

৫. আমি বিছানায় সব সময় ঘুমাতে পাড়ি না ।

চিকিৎসার আগে	চিকিৎসার পরে

স্কোর **সেকসন ০৮ : যৌন জীবন**

০. আমার যৌন জীবন স্বাভাবিক এবং কোন ব্যাথা তৈরি করে না ।

১. আমার যৌন জীবন স্বাভাবিক এবং কিছুটা ব্যাথা তৈরি করে ।

২. আমার যৌন জীবন কিছুটা স্বাভাবিক এবং অনেক ব্যাথা তৈরি করে ।

৩. আমার যৌন জীবন ব্যাথার জন্য গুরুতরভাবে সীমাবদ্ধ ।

৪. আমার যৌন জীবন ব্যাথার জন্য অনেকটাই গুরুতরভাবে সীমাবদ্ধ ।

৫. আমার যৌন জীবন ব্যাথার জন্য পুরুটাই গুরুতরভাবে সীমাবদ্ধ ।

চিকিৎসার আগে	চিকিৎসার পরে

স্কোর **সেকশন ০৯: সামাজিক জীবন**

০. আমার সামাজীক জীবন স্বাভাবিক এবং এটা কোন ব্যাথা তৈরি করে না ।

১. আমার সামাজীক জীবন স্বাভাবিক এবং এটা কিছুটা ব্যাথা তৈরি করে ।

২. ব্যথা আমার সামাজিক জীবন এর ওপর কোন প্রভাব ফেলে না,কিন্তু উদ্দিপনামূলক কাজকর্ম থেকে বিরত রাখে ।

৩. ব্যথা আমার জীবনকে বাধাগ্রস্থ করে এবং বাহিরে যেতে পারি না ।

৪. ব্যথা আমাকে চারদেয়াল এর মাঝখানে আবদ্ধ করে রেখেছে ।

৫. ব্যথার জন্য আমার কোন সামাজিক জীবন নেই ।

চিকিৎসার আগে	চিকিৎসার পরে

স্কোর **সেকশন : ১০: ভ্রমন**

0. আমি ব্যথা ছাড়া যেকোন জায়গায় ভ্রমন করতে পারি ।

১. আমি যে কোন জায়গায় ভ্রমন করতে পারি কিন্তু এটা কিছুটা ব্যথা তৈরি করে ।

২. আমি অতিরিক্ত ব্যথা নিয়ে দুই ঘন্টার বেশী ভ্রমন করতে পারি ।

৩. আমি অতিরিক্ত ব্যথা নিয়ে এক ঘন্টার বেশী ভ্রমন করতে পারি ।

৪. ব্যথার জন্য আমি ত্রিশ মিনিট এর বেশী ভ্রমন করতে পারি না ।

৫. ব্যথার জন্য আমি চিকিৎসার প্রয়োজন ব্যাতীত ভ্রমন করি না ।

চিকিৎসার আগে	চিকিৎসার পরে

Questionnaire (English):

Title: Effect of manual traction along with conventional physiotherapy on mechanical low back pain

Name :…….

Address :…….

Date of interview
:……

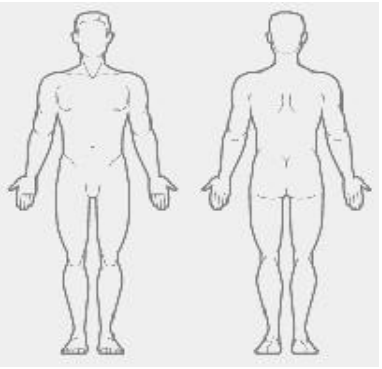
Contract no
……..……..

Socio-demographic information

1. Age	……..... Years	
2. Sex	1) Male 2) Female	
3. BMI a. Body weight b. Height	……..... Kg ……..Inch	
4. Marital status	1) Married 2) Unmarried 3) Divorce 4) Separate 5) Other	
5. Occupation	1) House wife 2) Student 3) Worked 4) Business 5) Service holder 6) Other	
6. What is the average monthly income of your household?	……..……..... BDT	

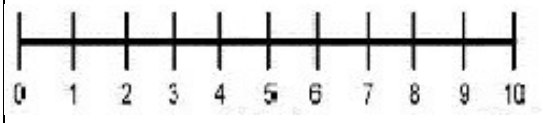
7. Education level of the participants	1) None 2) Primary 3) Secondary 4) Higher secondary 5) Graduate 6) Above graduate	
8. living area	1) Rural 2) Urban 3) semi urban	

Disease related variables

1. Duration of pain	.....Month	
2. Which limb is affected?	1) Right lower limb 2) Left lower limb 3) Both	
3. What is the behavior of pain?	1) Occasional 2) Intermittent 3) Constant	
4. Do you Feel any numbness?	1) Yes 2) No	
5. Any pass history of pain?	1) Yes 2) No	
6. Use of any pain medication	1) Yes 2) No	
7. Radiation of pain?	1) No radiation 2) buttock region 3) Thigh region 	
8. Nature of pain	1) Sharp 2) Dull	

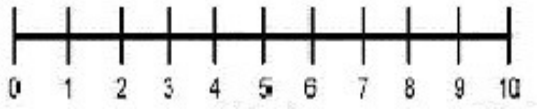
	3) Stabbing 4) Other	

Treatment related information (pre-treatment)

Manual muscle power testing (Oxford muscle grading)	1) Grade -0 2) Grade -1 3) Grade -2 4) Grade -3 5) Grade -4 6) Grade -5	
Lumber flexion of the patient	……Degree	
Lumber extension of the patient	……Degree	
Severity of pain according to VAS scale	 Reference: D. Gould et al. Visual Analogue Scale (VAS). Journal of Clinical Nursing 2001; 10:697-706	
Oswestry Disability Index	1) 0% - 20% (minimal disability) 2) 21%- 40% (moderate disability) 3) 41% -60% (sever disability) 4) 61% -80% (crippled) 5) 81%-100 (bed bound)	

Treatment related information (post-treatment)

1) Manual muscle power testing (Oxford muscle grading)	1) Grade -0 2) Grade -1 3) Grade -2 4) Grade -3 5) Grade -4 6) Grade -5	
2) Lumber flexion of the patient	……Degree	

3) Lumber extension of the patient	……Degree	
4) Severity of pain according to VAS scale	 Reference: D. Gould et al. Visual Analogue Scale (VAS). Journal of Clinical Nursing 2001; 10:697-706	
5) Oswestry Disability Index	1) 0% - 20% (minimal disability) 2) 21%- 40% (moderate disability) 3) 41% -60% (sever disability) 4) 61% -80% (crippled) 5) 10) 81%-100 (bed bound)	

Oswestry Low Back Pain Disability Questionnaire Oswestry Disability Index

Score Section 01: Pain intensity

0. I have no pain at the moment
1. The pain is very mild at the moment
2. The pain is moderate at the moment
3. The pain is fairly severe at the moment
4. The pain is very severe at the moment
5. The pain is the worst imaginable at the moment

Before treatment	After treatment

Score Section 02: Personal care (washing, dressing etc)

0. I can look after myself normally without causing extra pain.
1. I can look after myself normally but it causes extra pain
2. It is painful to look after myself and I am slow and careful
3. I need some help but manage most of my personal care
4. I need help every day in most aspects of self-care
5. I do not get dressed, I wash with difficulty and stay in bed

Before treatment	After treatment

Score Section 03: Lifting

0. I can lift heavy weights without extra pain
1. I can lift heavy weights but it gives extra pain
2. Pain prevents me from lifting heavy weights off the floor, but I can manage if they are conveniently placed
3. Pain prevents me from lifting heavy weights, but I can manage light to medium weights if they are conveniently positioned
4. I can lift very light weights
5. I cannot lift or carry anything at all

Before treatment	After treatment

Score Section 04: Walking

0. Pain does not prevent me walking any distance
1. Pain prevents me from walking more than 1 mile
2. Pain prevents me from walking more than 1 mile
3. Pain prevents me from walking more than 1 yards
4. I can only walk using a stick or crutches
5. I am in bed most of the time

Before treatment	After treatment

Score Section 05: Sitting

0. I can sit in any chair as long as I like
1. I can only sit in my favorite chair as long as
2. I like Pain prevents me sitting more than one hour
3. Pain prevents me from sitting more than 30 minutes
4. Pain prevents me from sitting more than 10 minutes
5. Pain prevents me from sitting at all

Before treatment	After treatment

Score Section 06: Standing

0. I can stand as long as
1. I want without extra pain I can stand as long as
2. I want but it gives me extra pain prevents me from standing for more than 1 hour
3. Pain prevents me from standing for more than 30 minutes
4. Pain prevents me from standing for more than 10 minutes
5. Pain prevents me from standing at all

Before treatment	After treatment

Score Section 07: Sleeping

0. My sleep is never disturbed by pain
1. My sleep is occasionally disturbed by pain Because of pain
2. I have less than 6 hours sleep Because of pain
3. I have less than 4 hours sleep Because of pain
4. I have less than 2 hours sleep
5. Pain prevents me from sleeping at all

Before treatment	After treatment

Score Section 08: Sex life

0. My sex life is normal and causes no extra pain
1. My sex life is normal but causes some extra pain
2. My sex life is nearly normal but is very painful
3. My sex life is severely restricted by pain
4. My sex life is nearly absent because of pain
5. Pain prevents any sex life at all

Before treatment	After treatment

Score Section 09: Social life

0. My social life is normal and gives me no extra pain
1. My social life is normal but increases the degree of pain
2. Pain has no significant effect on my social life apart from limiting my more energetic interests
3. Pain has restricted my social life and I do not go out as often
4. Pain has restricted my social life to my home
5. I have no social life because of pain

Before treatment	After treatment

Score Section 10: Traveling

0. I can travel anywhere without pain
1. I can travel anywhere but it gives me extra pain
2. Pain is bad but I manage journeys over two hours
3. Pain restricts me to journeys of less than one hour
4. Pain restricts me to short necessary journeys under 30 minutes
5. Pain prevents me from traveling except to receive treatment

Before treatment	After treatment

Interpretation:
Point total / 50 *100 = % disability

Sources: Fairbank JCT and Pynsent, PB (2000) The Oswestry Disability Index. Spine, 25(22):2940- 2

Gant chart

Activities/ Month	Dec -18	Jan -19	Feb -19	Ma -19	Apr -19	May -19	Jun -19	July -19	Aug -19	Sep -19	Oct -19	Nov -19
Proposal Presentation	Dec -18											
Introduction	Dec 18-Jan 19											
Literature review	Dec 18-Nov 19											
Methodology			Feb -19									
Data collection				Mac -May 19								
Data analysis							Jun -19					
Result								July -19				
1st Progress Presentation								July -19				
Discussion									Aug -19			
Conclusion and recommendation										Sep -19		
2nd Progress Presentation											Oct -19	
Communication with supervision	Dec 18-Nov 19											
Final Submission												Nov -19

SAIC COLLEGE OF MEDICAL SCIENCE AND TECHNOLOGY

Approved by Ministry of Health and Family Welfare
Affiliated with Dhaka University

Ref : SIMT/PHY/ERB/19-06-2019/19 Date : 19.06.2019

19 June 2019

To

Md.Ariful Islam,Md.Sohel Arman

4th Professional B.Sc. in Physiotherapy

SAIC College of medical science and technology

Mirpur-13, Dhaka-1216.

Sub: Permission to collect data

Dear Md.Ariful Islam,Md.Sohel Arman,

Ethical review board (ERB) of SIMT pleased to inform you that your proposal has been reviewed by ERB of SIMT and we are giving permission you to conduct study entitle of "Effect of manual traction on mechanical low back pain''and for successful completion of this study you can start data collection from now.

Wishing you all the best.

Thanking You.

19.06.19
Chairman
Ethical Review Board
SAIC College of medical science and technology

19.6.2019
Principal
SAIC College of medical science and technology
Mirpur-13, Dhaka-1216

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