Faculty of Medicine

University of Dhaka

“Common treatment approaches used by physiotherapy professional for chronic mechanical neck pain”.

Sumon chandra roy

Bachelor of Science in Physiotherapy (B.Sc. PT)

Registration no: 7454, Roll no: 1293

Session: 2016-2017.

Saic College of Medical Science and Technology (SCMST)

Department of Physiotherapy

Saic Tower, M-1/6, Mirpur-14, Dhaka-1216, Bangladesh.

BOARD OF EVALUATION

We the member of the research project defense committee

For

Sumon chandra roy

Unanimously approved the research project

"Common treatment approaches used by physiotherapy professional for chronic mechanical neck pain".

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SCMST, Mirpur 14, Dhaka.

This study with the title – **"Common treatment approaches used by physiotherapy professional for chronic mechanical neck pain"** by Sumon chandra roy**,** Department of physiotherapy, Saic College of Medical Science and Technology (SCMST), was done in my close supervision and direct guidance. I have gone through the papers. This is up to my full satisfaction.

Supervisor

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Muhammad Shahidul Islam
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University of Dhaka

Saic College of Medical Science and Technology

Department of Physiotherapy

We, the under signed certify that we have carefully read and recommended to the Saic College of Medical Science and Technology, Faculty of Medicine, University of Dhaka, for the acceptance of this dissertation entitled – "Common treatment approaches used by physiotherapy professional for chronic mechanical neck pain" submitted by Sumon chandra roy, for the partial fulfillment of the requirements for the BSc in Physiotherapy. This study was carried out under the guidance of the following board of examiners at University of Dhaka during the academic session 2016-2017.

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Internal Examiner

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DECLARATION

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 decline that for any publication, presentation or dissemination of information of the study. I would found to take written consent of my supervisor.

Signature: ……. **Date: ……..…….**

Sumon chandra roy

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Acknowledgement

First of All, the praises and gratefulness go to the almighty Allah for giving us the passion to complete this study. I am grateful to the committee of research project and faculty members of Physiotherapy Department, Saic College of Medical Science and Technology (SCMST) Who allowed us to carry out this study. I express my greatest gratitude to the respectable Course Coordinator and Assistance Professor, Zahid Bin Sultan Nahid sir to give us important suggestions, support and to complete this study.

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I would like to thank all the participants who participate in this study willingly. Finally, I would like to thank my parents and family members for their sincere sacrifices and blessing during the enter course of my study.

Abbreviations

ADL	:	Activities of Daily Living.
BMI	:	Body Mass Index.
MS	:	Musculoskeletal.
NPRS	:	Numeric Pain Rating Scale.
ROM	:	Range of Motion.
SPSS	:	Statistical Package for Social Sciences.
SD	:	Standard Deviation.
SCMST	:	Saic College of Medical Science and Technology
WHO	:	World Health Organization

Abstract

Purpose: The purpose of the study was to common treatment approaches used by physiotherapy professional for chronic mechanical neck pain.

Objective: To find out common treatment approaches used by physiotherapy professional for chronic mechanical neck pain, to determine the socio-demographic characteristics of the study subjects, to find out the concept following in mechanical neck pain management by the participants, to find out the type of modalities are used by the physiotherapy professionals, to in guise about the rehabilitation services given by the physiotherapist.

Methodology: Convenience sampling technique was used to select physiotherapy professionals. Hundred physiotherapy professionals constituted the study population for the present study. Self-administered questioners were applied to collect data from the respondents. Data was analyzed by SPSS software, and using tables, bar charts, pie charts and descriptives.

Results: This result shows that the Mean age of the participants was= 35.85 years and SD was 4.58 years, where male was 91% and female was 9% and mean BMI was 23.19. Most of the participants used mulligan concepts 94%, cyriax concept used was 78%. Maximum participants were used strengthening exercise 92%, stretching exercise was used 90%. Manual traction was used 97%, soft tissue release 95% and mobilization was 85%. Electrical modalities used were TENS 99%, Traction 96%, UST 94%. Provision of rehabilitation program isometric was 98% and strengthening was 90%. And 97% professional teach ADLs of their patients.

Conclusion: Physiotherapy profession is a noble profession. In this research, most of the participants practice mechanical neck pain management more than 5 years was 73% and following concept mechanical neck pain management mulligan concept was 94%, major professional was used strengthening exercise 92%, soft tissue release used 95%. we found that major physiotherapy professional practice manual therapy to reduce mechanical neck pain management**.**

Key words: Physiotherapy professional, neck pain, common treatment approach.

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CHAPTER-I INTRODUCTION

1.1 Background:

Mechanical neck pain is defined as a generalized neck pain with or without shoulder pain with mechanical characteristics including symptoms produced by maintained neck postures, movement, or by palpation of the cervical muscles. The main feature of mechanical neck pain is pain in the cervical region, often accompanied by restriction of range of motion (ROM) and functional limitation. Neck pain and its related disability cause an important socioeconomic burden to the society and is the second largest cause of time off work, after low back pain (Ganesh G. S. et al.,2015).

Neck pain may be accompanied by neurological deficits and/or referred or radiating pain into the upper extremities, or headaches with a cervical origin however, these signs symptoms are often excluded when referring to mechanical neck pain (Young et al.,2014).

The current physical therapy clinical practice guidelines for neck pain have separated the clinical findings of patients presenting with neck pain. into categories, with headaches and referred or radiating pain into the upper extremities having their own individual categories (Doug W. et al.,2014).

According to estimates, 10% of adults in the general population experience neck pain at some point in time. It is estimated that between 50 and 70 percent of people will experience neck discomfort at some point in their lives, and that up to 60 percent of patients still experience chronic pain five years after their symptoms first appeared (Jodi L.Y, et al.,2013).

Due to their considerable impact on disability, personal suffering, missed employment, and their direct and indirect effects on the health care system, musculoskeletal disorders are a serious public health issue (Kashyap R. et al.,2022).

High job expectations were linked in a multivariate analysis to symptoms of neck and lower back discomfort, tendency to get overworked, lack of social support, and coworkers. Neck complaints were linked to a lack of employment variety, poor time

management, and competition. Sedentary work was also linked to neck and low back pain (Iqbal, et al., 2021).

According to epidemiological surveys, between 45% and 54% of people worldwide have mechanical pain at some point in their life. This discomfort frequently worsens with time, requiring medical attention, time away from work, and even severe disability. Authors found that 23%–33% of information technology employees experience neck pain, and 7%–17% have restricted neck movement. Due to diminished neck muscular strength and restricted motions, chronic neck discomfort is also linked to a higher activation of auxiliary neck muscles during repetitive upper limb tasks (Kashyap R. et al.,2022).

Direct damage, impairment, degeneration, and derangement of intervertebral discs, ligaments, muscles, facet joints, dura, and nerve roots are the main causes of neck discomfort. Unspecific neck pain that may or may not radiate to the extremities is typically a side effect of bad posture or persistently abnormal physiological demands. In the muscles around the neck, physical deconditioning, inactivity, and repeated aberrant loading lead to the production of small nodular taut bands known as "trigger points," which are what cause a musculoskeletal imbalance in the upper quadrant of the body (Alghadir A.H. et al.,2022)

In this survey authors found that all outcome indicators for all groups significantly improved (P0.05) at days 1 and 5 postintervention and days 10 and 15 of the follow-up, according to the within-group analyses (Young et al.,2014).

The inter-group analysis verified there were no significant differences (P>0.05) for any of the variables between any of the groups. Manual physiotherapy and the muscle energy technique are equally effective for reducing pain and muscle tenderness and for improving neck disability and range of rotation in patients with nonspecific neck pain (Kashyap R. et al.,2022).

1.2 Justification:

Bangladesh is a developing country and here over crowded population lives in this country. Here many working population. They are working various sectors. Physiotherapy professional are one of them. The aim of the study is Common treatment approaches used by physiotherapy professional for chronic mechanical neck pain. Neck pain is an extremely common symptom or common complain of the population. Literature showed that arthritis, disc degeneration, narrowing of the spinal canal, muscle inflammation, strain or trauma are due to chronic neck pain. A variety muscle problem of neck in any part of the complex, interconnected network to the spine.

Chronic neck pain are typically characterized by pain and limitations in mobility, dexterity and overall level of functioning, reducing people's ability work. Chronic neck pain are injuries and disorder that affect the human body's movement or musculoskeletal system like muscles, tendons, ligaments, nerves, discs, blood vessels etc. there are many populations suffering chronic neck pain and they are need to recover this problem. The goal of clinical practice guidelines is to help practitioners maximize patient care by offering statements and suggestions. Physiotherapists treat patients with chronic neck pain in a variety of ways.

The aim of the study is to find out the Common treatment approaches used by physiotherapy professional for chronic mechanical neck pain. Chronic neck pain hampers the daily activities of life. There are numerous health care practitioners that treat patients with neck pain with a variety of interventions such as physical medicine, manual therapies, exercise, electrotherapeutic agents, and ergonomics. To mention about this, we need to know some up to date information that can help for the giving proper treatment to prevent complication. However, research makes the profession strongest. So, there is no alternative option to do research as a professional to develop the profession.

1.3 Research Question:

What are the Common treatment approaches used by physiotherapy professional for chronic mechanical neck pain?

1.4 Objective:

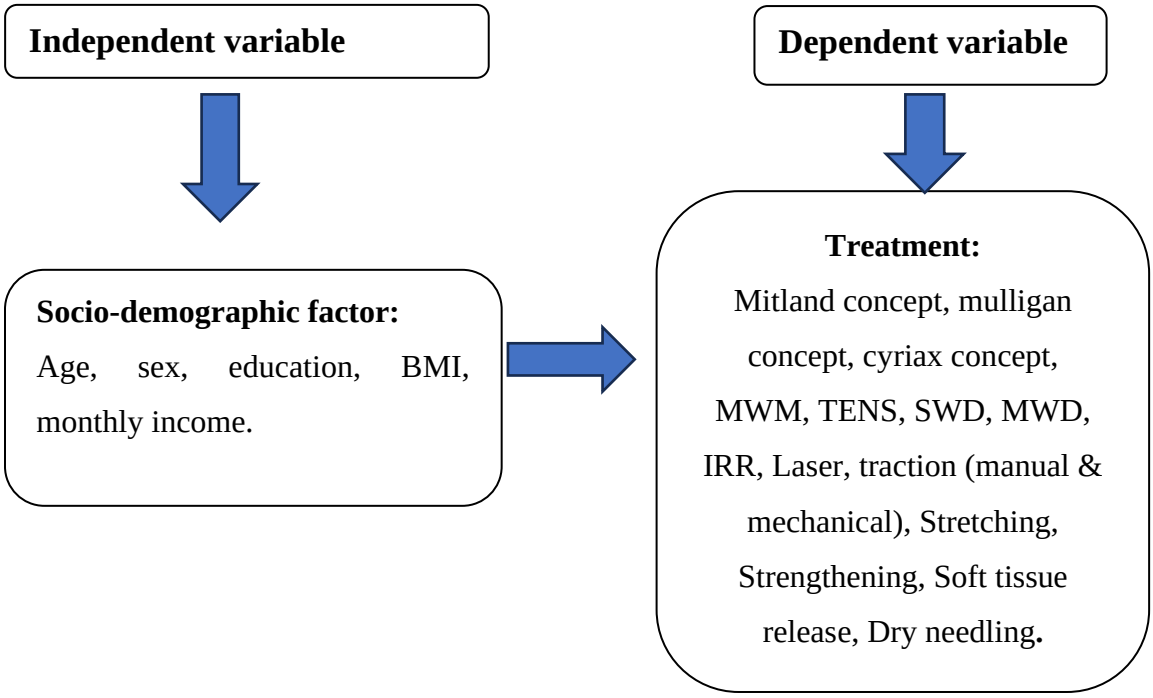
1.4.1 General objective:

To find out common treatment approaches used by physiotherapy professional for chronic mechanical neck pain.

1.4.2 Specific objective:

1. To determine the socio-demographic characteristics of the study subjects.
2. To reveal the type of modalities are used by the physiotherapy professionals.
3. To identify the concept following in mechanical neck pain management by the participants.
4. To come to know which orthosis devices are provided by the practitioner.
5. To in guise about the rehabilitation services given by the physiotherapist.
6. To collect information on teaching ADL of the patients by the participants.

1.5 Conceptual frame work:



1.6 Operational Definition:

Chronic pain:

Pain is classified as chronic when it has a duration of 12 weeks or more. Chronic neck pain often presents as widespread hyperalgesia on palpation and in both passive and active movements in neck.

Pain:

An unpleasant sensory or emotional experience associated with actual or protentional tissue damage or describe in term of such damage.

Musculoskeletal pain:

Musculoskeletal pain that affects the muscles, tendon and ligament and bones.

Radiating pain:

Radiating pain means spreading out wards, radiating pain is pain that starts in one are and spreads until a large rare a hurt. Sometimes that is due to the nerve for example; if a nerve gets pinched or pulled; it may hurt all along the nerve instead of just at the one sport that got hurt.

Sometime it is due to the body attempt to compel sate for the injury- for example, if you hurt your ankle, you may feel pain in the opposite leg as you try to avoid patient weight on that ankle.

Physiotherapy:

Physiotherapy as described by World Physiotherapy is a health care profession concerned with human function and movement and maximizing physical potential.

CHAPTER-II: LITERATURE REVIEW

Musculoskeletal disorder is a significant public health problem due to their high impact on disability personal suffering and absence from work and their direct and indirect cast of the health care system. In multivariate analysis high job demands were related to neck and lower back pain symptoms and tendency to become overwork and lack of social support and colleagues were related neck and back pain (Iqbal, et al., 2021).

Physical therapy is a standard conservative treatment for mechanical neck pain. In fact, neck pain is the primary complaint of almost 25% of all patients who visit an outpatient physical therapy clinic. Manual therapy, which aims to increase tissue extensibility and range of motion, mobilize or move soft tissue and joints, and reduce pain, is a frequent technique used by physical therapists to treat mechanical neck discomfort. Specific manual treatment procedures, such mobility and manipulation, involve expert passive movements applied at different speeds and amplitudes to joints and/or associated soft tissues. Researchers and physicians have recently started looking into manual therapy methods used on the thoracic spine to address mechanical neck discomfort (Jodi L.Y, et al.,2013).

A significant section of the population suffers from neck discomfort, which is a frequent issue with an episodic pattern. The range for the one-year incidence is stated to be smaller (10.4% to 21.3%), although estimates for the prevalence of neck discomfort in the general population range from 0.4% to 86.8% (mean 23.1%). Being a woman, being between the ages of 35 and 49, and having previously experienced neck pain are risk factors for new-onset neck pain. Clinical practice guidelines are created with the goal of assisting practitioners in providing the best possible care for patients. Location, resources available, patient population, and professional background are only a few of the variables that will affect how clinical practice is carried out. a number of Clinical practice guidelines from various healthcare practitioners (Carlesso L.C. et al.,2014).

Mechanical neck pain is pain that can be brought on by movements of the neck or by performing provocative examinations. With a reported lifetime prevalence of 22% to

67%10 and a point prevalence of 13% to 22%, neck discomfort is a frequent musculoskeletal issue. Up to 41% of neck pain sufferers go to their medical practitioner for treatment, and 33% go to a physical therapist. Several physical therapy techniques recommended for the care of individuals with mechanical neck discomfort are listed in The Guide to Physical Therapist Practice. Physical agents, exercise, traction, manual physical therapy, and mechanical and electrotherapeutic modalities are a few of these therapies. Despite their widespread usage, current research hasn't established enough proof of these therapies efficacy or the clinical decision-making techniques that should govern their application. For individuals with cervicogenic headache and mechanical neck pain, the best available research currently supports the multimodal use of manual physical therapy (MPT), including cervical thrust and/or non thrust manipulation and exercise (Boyle R.E. et al.,2010).

In this study aimed at comparing the clinical efficacies of two manual therapies to determine the most beneficial result-oriented physiotherapeutic approach for treating nonspecific neck pain due to myofascial trigger points. The visual analog scale, pressure pain threshold, Neck Disability Index Questionnaire, and a standardized measuring tape were used to assess the participants' neck pain, muscle tenderness, functional disability due to neck pain, and range of neck rotation, respectively, at baseline (day 0), day 1, and day 5 postintervention and at days 10 and 15 during follow-up. All groups were given postural advice and at-home neck exercises. one-way ANOVA were used to analyze the data. They found that within-group analyses showed significant improvement ($P<0.05$) in all outcome measures at days 1 and 5 postintervention and at days 10 and 15 during the follow-up for all groups. The between-group analyses confirmed nonsignificant differences ($P>0.05$) between all groups for all variables. Manual physiotherapy and the muscle energy technique are equally effective for reducing pain and muscle tenderness and for improving neck disability and range of rotation in patients with nonspecific neck pain (Kashyap R. et al.,2022).

Neck pain is a common diagnosis in the physical therapy setting, yet there is no gold standard for treatment. A systematic review was to determine the effects of thoracic spine thrust manipulation on pain, range of motion, and self-reported function in patients

with mechanical neck pain. Six online databases were comprehensively searched from their respective inception to October 2010. The primary search terms included “thoracic mobilization,” “thoracic spine mobilization,” “thoracic manipulation,” and “thoracic spine manipulation.” Of the 44 studies assessed for inclusion, 6 randomized controlled trials were retained. Between-group mean differences and effect sizes for pretreatment-to-posttreatment change scores, using Cohen's *d* formula, were calculated for pain, range of motion, and subjective function at all stated time intervals. Effect size point estimates for the pain change scores were significant for global assessment across all studies (range, 0.38–4.03) but not conclusively significant at the end range of active rotation (range, 0.02–1.79). Effect size point estimates were large among all range-of-motion change measures (range, 1.40–3.52), and the effect size point estimates of the change scores among the functional questionnaires (range, 0.47–3.64) also indicated a significant treatment effect (Cross K.M. et al.,2011).

Neck pain is a common problem within our society. Upper trapezius and the levator scapulae are the most common postural muscles that tends to get shorten leading to restricted neck mobility. If these group of muscles are treated it may provide with best results. There is lack of evidence to allow conclusions to be drawn about the effectiveness of Muscle energy technique (MET) when compared with stretching exercises for relieving mechanical neck pain. 45 patients with subacute mechanical neck pain were randomly assigned to receive Muscle Energy Technique plus conventional physiotherapy (group 1, n = 15), static stretching plus conventional exercise program (group 2, n = 15) and conventional physiotherapy only (group 3, n = 15). Paired t-test was used for within group analysis. ANOVA followed by post hoc analysis was employed for between group comparisons. No significant difference was found in any of the outcome measure between MET and static stretching groups ($p > 0.05$) while both were found to be significantly better than the conventional exercise group ($p < 0.05$) between the 3 groups. Statistically significant improvements were found in all the 3 groups for all the outcome measures ($p < 0.05$) (Mahajan R. et al.,2012).

Mechanical neck pain is a common condition associated with substantial morbidity and cost. Relatively little is known about the efficacy of spinal manipulation and

exercise for chronic neck pain. Also, the combination of both therapies has yet to be explored. Altogether, 191 patients with chronic mechanical neck pain were randomized to receive 20 sessions of spinal manipulation combined with rehabilitative neck exercise (spinal manipulation with exercise), MedX rehabilitative neck exercise, or spinal manipulation alone. A total of 93% of the patients completed the intervention phase. The response rate for the 12-month follow-up period was 84%. Except for patient satisfaction, where spinal manipulative therapy and exercise were superior to spinal manipulation with (P = 0.03), the group differences in patient-rated outcomes after 11 weeks of treatment were not statistically significant (P = 0.13). Both exercise groups showed very similar levels of improvement in patient-rated outcomes, although the spinal manipulation and exercise group reported greater satisfaction with care (P < 0.01) (Bronfort et al.,2001)

Literature show that inspite of neck disorders being so common in the population, little evidence supporting effective interventions has been identified. The objective of this systematic review was to determine if various exercise methods are effective in treating the different mechanical neck disorders occurring in adults. Sixteen trials were included: nine randomized controlled trials (RCTs) and seven randomized comparative trials (CTs). The average PEDro score indicated moderate methodological quality. PEDro results showed the subject- and therapist-blinding criteria to be inappropriate. Findings revealed relatively strong evidence supporting the effectiveness of proprioceptive exercises and dynamic resisted strengthening exercises of the neck–shoulder musculature for chronic or frequent neck disorders. Moderate evidence was found to support early mobilizing exercises in acute whiplash patients. The evidence identified could not support the effectiveness of group exercise, neck schools or single sessions of extension–retraction exercises. Clinicians are encouraged to incorporate these findings into their practice when planning the management of mechanical neck disorders. There is great need for well-designed RCTs to further investigate the topic and perhaps evaluate exercise effectiveness in relation to more specific disorders (Sarig-Bahat H. et al.,2003).

The prevalence of neck pain in the general population has been reported to be 15% for men and 23% for women, with nearly half of these individuals experiencing constant unremitting symptoms. Physical therapists use several interventions and modalities in the

management of neck pain, including joint mobilization/manipulation (non thrust and thrust), therapeutic exercise, and traction. However, robust evidence to support the use of many of the aforementioned management strategies is lacking. Recently, evidence has begun to emerge for the use of manual therapy, specifically, thrust mobilization/manipulation procedures, directed at the thoracic spine in people with mechanical neck pain. The result suggest that thoracic spine thrust mobilization/manipulation results in significantly greater shorter short term reductions in pain and disability than does thoracic non thrust mobilization/manipulation in people with neck pain (Cleland J.A. et al.,2007).

Neck pain, whether from a traumatic event such as a motor vehicle crash or of a non-traumatic nature, is a leading cause of worldwide disability. This narrative review evaluated the evidence from systematic reviews, recent randomized controlled trials, clinical practice guidelines, and other relevant studies for the effects of rehabilitation approaches for chronic neck pain. Rehabilitation was defined as the aim to restore a person to health or normal life through training and therapy and as such, passive interventions applied in isolation were not considered. The results of this review found that the strongest treatment effects to date are those associated with exercise. Strengthening exercises of the neck and upper quadrant have a moderate effect on neck pain in the short-term. The evidence was of moderate quality at best, indicating that future research will likely change these conclusions. Lower quality evidence and smaller effects were found for other exercise approaches. Other treatments, including education/advice and psychological treatment, showed only very small to small effects, based on low to moderate quality evidence (Sterling M. et al.,2019).

A total of 54 individuals with chronic mechanical neck pain were randomly allocated to three groups: extensor training, flexor training, or control. Neck Disability Index scores improved significantly more in the exercise groups than in the control group after 6 weeks training and at 1- and 3-month follow-up in both the exten-sor (P=0.001) and flexor groups (P=0.003, P=0.001, P=0.004, respectively). NPS scores also improved significantly more in the exercise groups than in the control group after 6 weeks' training in both the extensor (P<0.0001) and flexor groups (P=0.029. In both exercise groups, the

CV angle improved significantly compared with the control group at 6 weeks and 3 months (extensor group, P=0.008 and P=0.01, respectively flexor group, P=0.002 and 0.009, respectively). At 1 month, the CV angle had improved significantly in the flexor group (P=0.006). Muscle strength in both exercise groups had improved significantly more than in the control group at 6 weeks and 1- and 3-month follow-up (extensor group, P=0.04, P=0.02, P=0.002, respectively, flexor group, P=0.002, P=0.001, and 0.001, respectively). The semispinalis group gained extensor strength and the deep cervical flexor group gained flexor strength (Tavares L.F. et al., 2022).

Evidence supports exercise-based interventions for the management of neck pain, however there is little evidence of its superiority over usual physiotherapy. This study investigated the effectiveness of a group neck and upper limb exercise programmed (GET) compared with usual physiotherapy for patients with non-specific neck pain. A total of 151 adult patients were randomized to either GET or usual physiotherapy. The primary measure was the Northwick Park Neck pain Questionnaire score at six weeks, six months and 12 months. Mixed modelling identified no difference in neck pain and function between patients receiving GET and those receiving UP at any follow-up time point. Both interventions resulted in modest significant and clinically important improvements on the Neck pain Questionnaire score with a change score of around 9% between baseline and 12 months. Both GET and UP are appropriate clinical interventions for patients with non-specific neck pain, however preferences for treatment and targeted strategies to address barriers to adherence may need to be considered in order to maximize the effectiveness of these approaches (McLean S.M. et al.,2013).

CHAPTER III METHODOLOGY

3.1 Study design: It was a cross sectional type of descriptive study. By adopting a cross-sectional gains the advantage of efficiently capturing a broad overview of planning participants in Dhaka city and Comilla within the chosen age range, providing valuable insights into their characteristics and serving as foundational study for potential futures research endeavors. Also, all previous studies on this topic were cross-sectional.

3.2 Study area: Data were collected from the Physiotherapy professional living in Dhaka and Comilla.

3.3 Study period: September 22 to August 23.

3.3 Study population: Physiotherapy professional constituted the study population for the presented study.

3.4 Sample size: sample size for the study calculated by the following equation.

Following formula was used to determine the sample size.

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

Here

n = the desire sample size

z = the standard normal deviate usually set at 1.96 which correspondents to 95% confidence level

p = .64% (Sadeghian F et all.,2015)

q = 1- p = 1.00- 0.64

q = 0.36

d = degree of accuracy desired, usually set at 0.05%

$$\frac{(1.96)^2 \times 0.36 \times 0.36}{(0.05)^2}$$

$$= \frac{3.84 \times 0.1296}{0.0025}$$

$$= \frac{.4977}{.0025}$$

$$= 199.08$$

So, required sample size is 200. As limitation of my time period, data was collected 100, for the kind permission of my supervisor.

3.5 Sample technique:

Convenience sampling technique was used to select physiotherapy professionals.

3.6 Methods of data collection:

Self-administered questioners was applied to collect data from the respondents.

3.7 Instrument of data collection:

A pre tested questioner was the instrument of data collection. It contains both open and close ended question.

3.8 Procedure of data collection:

At first different physiotherapy center were identified in Dhaka and Comilla than contract with the physiotherapy professional researcher introduce himself to the participants, the aim and objectives of the researchers was explained to the participants obtaining verbal inform consent, I handed over the questioners to the physiotherapist. The participants read the questioner and field with answers appropriate places.

3.9 Data management:

After collection of data the questioners were checked for any error or inconsistence, the necessary correction was made accordingly.

3.10 Data editing:

All the responses in the questioner were coded for entry into the SPSS program.

3.11 Data analysis:

Data were analyzed according to the objective of the study.

3.12 Descriptive analysis:

Included means, median, standard deviation and percentage of the relevant variables, association between dependent and independent variable was conducted.

3.13 Presentation of the results:

The finding of the results have been presented with frequency tables, charts, bar diagram and description.

3.14 Limitation of the study

- The main limitation of this study was shorted duration of time.
- As a student, this study conducted by my own fund/finance. So, there might have some limitation of financial aspect within this study.
- There was less time to carry out this study and thus calculated sample could not take.
- This study does not represent whole population within the country.
- Some people are refusing to give their data.
- This research is a part my academic study and I am not expert on statistical analysis and due to knowledge limitation of researcher, so there might have poor analysis effect.
- Researchers are human too and they can commit mistakes. However, whether the error was made by researcher, one thing remains certain that it will affect the results of a study.

3.15 Inclusion criteria & Exclusion criteria:

Inclusion criteria:

1. Age between 22-55 years.
2. Male and female both sexes.
3. Who are willing participate (Rao, et al., 2013).

Exclusion criteria:

1. Technician

3.16 Ethical consideration:

This study was be conduct with the permission from the ethical review committee SCMST. Before start data collection I was obtain a permission latter from authority and will maintain all kinds of ethics correctly. I was keep all information secure and will not use to any purpose without concerns of respondent and supervisor of this study.

3.17 Budget:

This study was any cost by using my own fund.

CHAPTER: IV RESULTS

The objective of the study was to find out the common treatment approaches used by physiotherapy professional for chronic mechanical neck pain. The data was collected by researcher himself. A structured questionnaire containing both open and closed ended questions used to collect data. The data was analyzed with the Microsoft office excel with SPSS 20 version software program. The result of the study was given in the following section.

4.1: Socio-demographic condition:

4.1.1: Age of the participants

Table 1: Frequency distribution of the participants by age group.

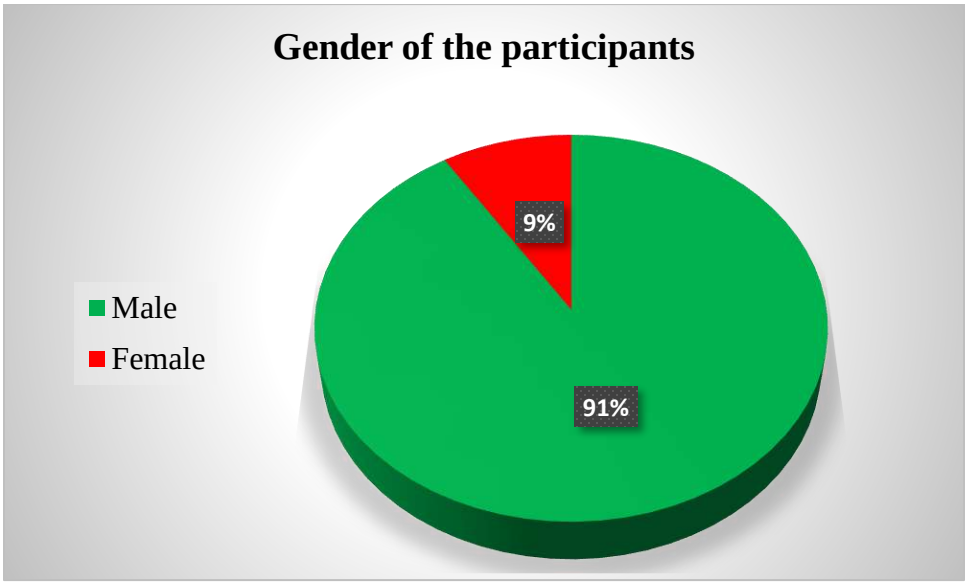
Age group in years	Frequency	
	N	%
20-30 years	18	18%
31-40 years	69	69%
41-50 years	13	13%
Total	100	100%

Mean = 35.85 years. SD was 4.58 years.

Regarding frequency distribution of the participants by age, it was found 69 (69%) participants belong of the age group of 31-40 years, it was also found 18 (18%) study subject were in the age group of 20-30 years, it was also found 13 (13%) study subject were in the age group of 41-50 years. The mean age of the participants was 35.85 years and SD was 4.58.(Table no-01)

4.1.2: Gender of the participants:

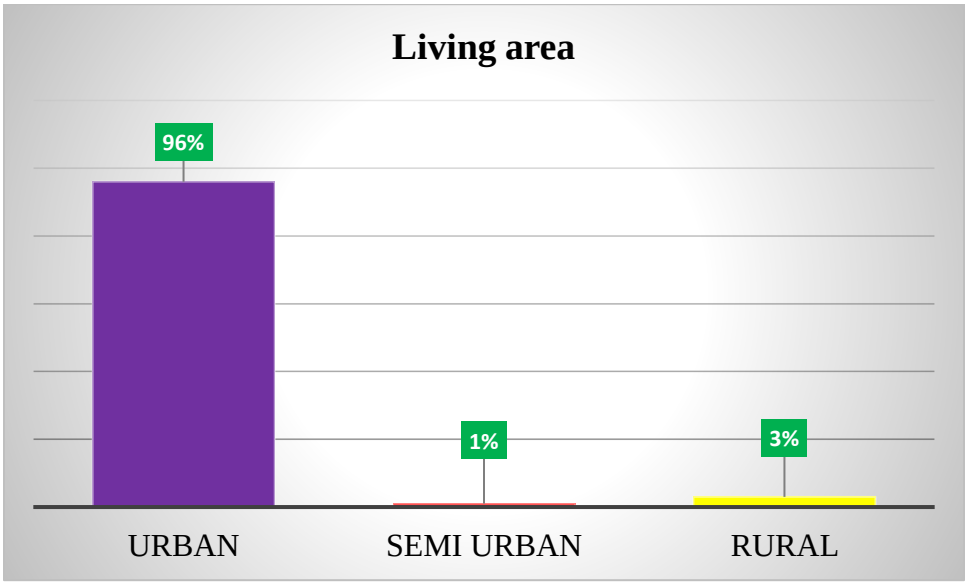
Figure no 01: gender of the participants



About gender of the respondents, 91% respondents were male and 9% were female respondents (Figure-01)

4.1.3: Living area of the participants:

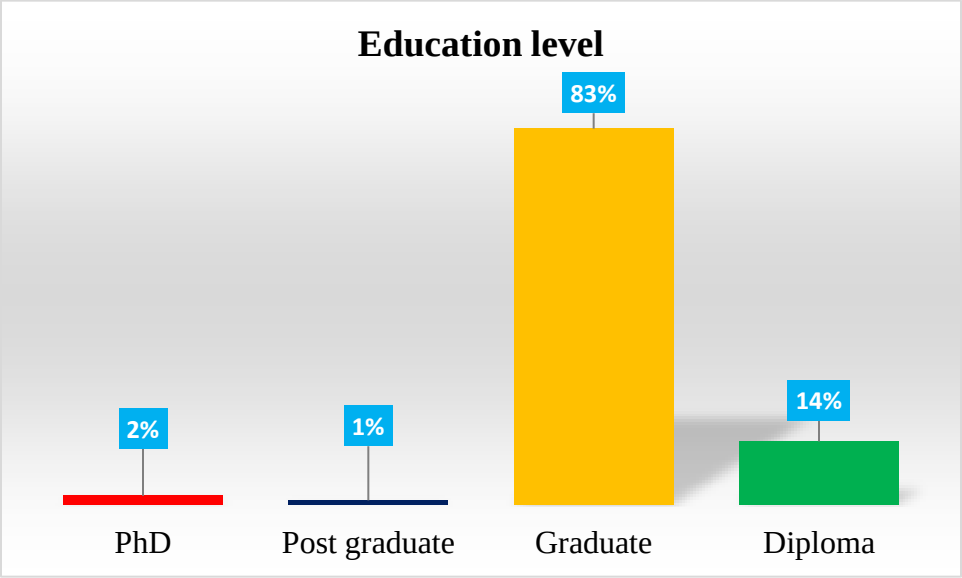
Figure no 02: Living area of the participants



About living area of the participants, it was found that (96%) participants live in urban area, and (3%) lived in rural area (Figure no 02).

4.1.4: Educational level of the participants.

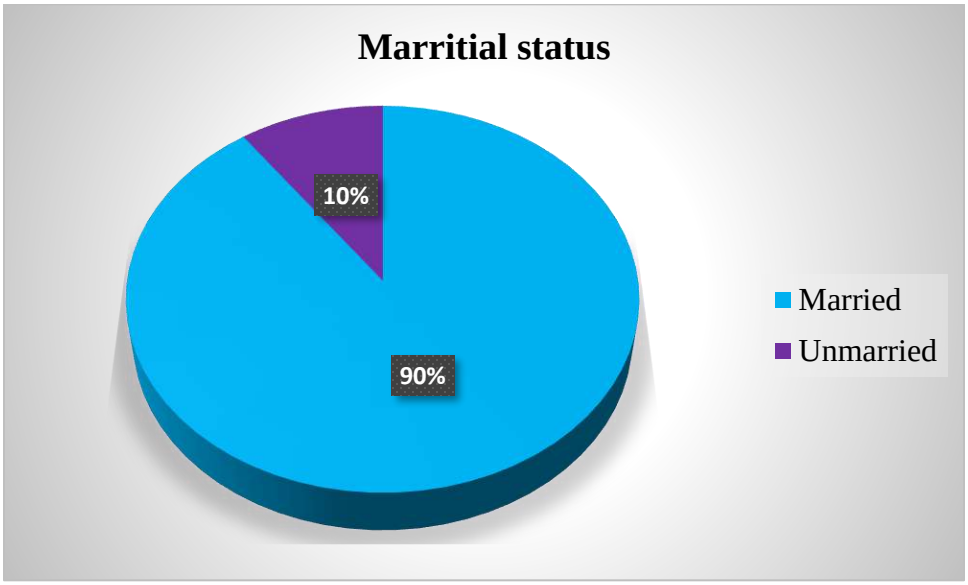
Figure no 03: Educational level of the participants



Regarding education level of the participants, it was found 2 (2%) PhD holders, 1 (1%) is post graduate, and 83 (83%) was found graduate participants, it also found 14 (14%) is diploma holders (figure no. 3).

4.1.5: Marital status of the participants:

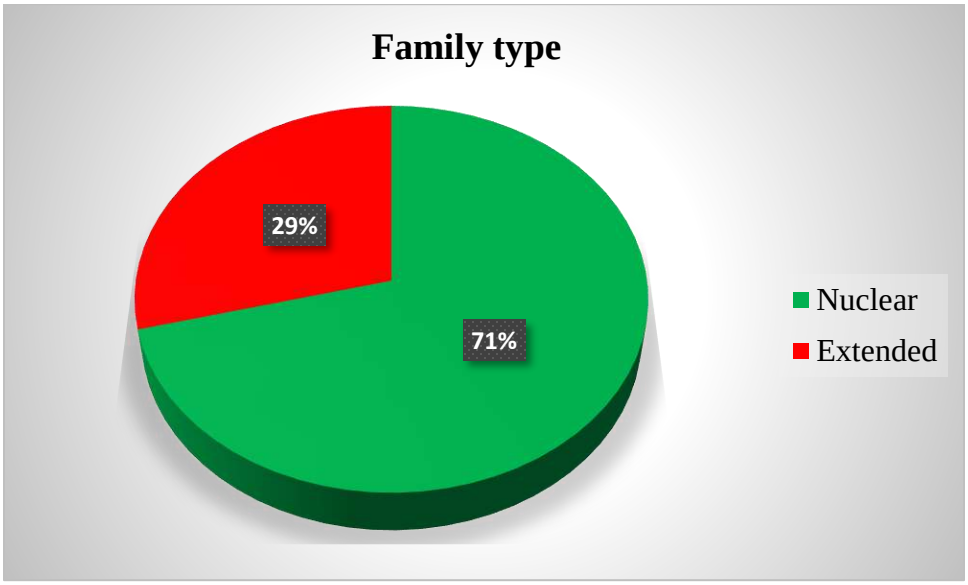
Figure no 04: Marital status of the participants.



About marital status of the participants, 90 (90%) respondents were married and 10 (10%) were unmarried respectively (Figure no-04).

4.1.6: Family type of the participants:

Figure no 05: Family type of the participants



Regarding the study Show that the family type of the participants belong nuclear was 71 (71%), Extended was 29 (29%) respectively (Figure no-05).

4.1.7: Monthly income of the participants:

Table no 02: Monthly income of the participants.

Monthly income in taka	Frequency	n=100
	N	%
20000-30000	4	4
31000-40000	34	34
41000-50000	49	49
>50000	3	3
Total	100	100

Mean=45230 SD= 8344.66

About monthly income of the participant by Bangladeshi taka, it was found 49 (49%) belong to the taka (41000-50000). It was also found 34 (34%) belong to the taka (31000-40000). The mean monthly income of the participants was 45230 and standard deviation was 8344.66 (Table no- 02).

4.1.8. Body Mass Index (BMI) of the participants:

Table no 03: Body Mass Index (BMI) of the participants.

Range (BMI)	Frequency	
	N	%
<18.5	14	14
18.6-24.9	75	75
25-29.9	11	11
Total	100	100

Mean = 23.19 SD = 2.56

Regarding frequency distribution of the participants by body mass index (BMI). It was found 75 (75%) participants belong to the BMI (Body mass index) of (18.6-24.9) normal. It was also found 14 (14%) participants underweight (<18.5) and 11 (11%) participants over weight (25-29.9). The mean BMI of the participants was 23.19 and SD was 2.56 (Table no – 03).

Section 2: Treatment related information:

4.2.1: Frequency distribution of the participants by length of practice

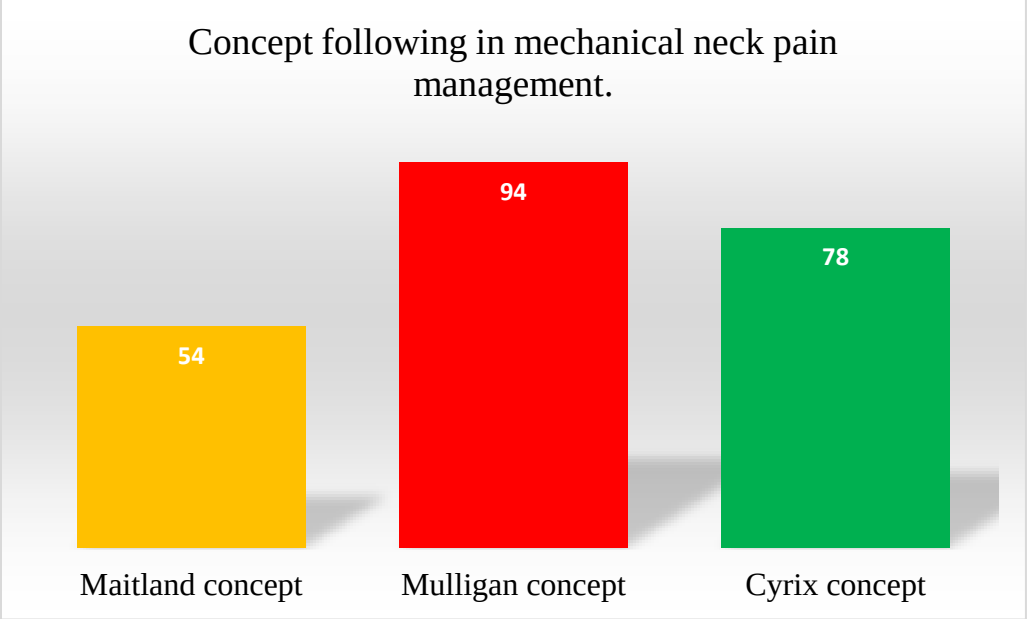
Table no 04: Frequency distribution of the participants by length of practice

Length of practice	Frequency	
	N	%
Less than 5 years	27	27.0
More than 5 years	73	73.0
Total	100	100.0

The study show that 73(73%) participants were practicing more than 5 years and 27 (27%) participants were practicing less than 5 years (Table no - 04).

4.2.2: Following concept of mechanical neck pain management:

Figure no-06: Following concept of mechanical neck pain management



About concept following in mechanical neck pain management 94 (94%) respondents were used mulligan concept, 78 (78%) respondents were used cyrix concept and 54 (54%) respondents also used maitland concept (Figure no-06).

4.2.3: Type of exercise adopted by physiotherapist in mechanical neck pain management:

Table no 05: Type of exercise adopted by physiotherapist in mechanical neck pain management n=100

Variable	Frequency	
	N	%
Retraction exercise	81	81
Protrusion exercise	21	21
Side flexion exercise	54	54
Stretching exercise	90	90
Strengthening exercise	92	92

It was revealed that 81 (81.00%) participants adopted retraction exercise in mechanical neck pain, 90 (90.00%) physiotherapist used stretching exercise, 54 (54.00%) physiotherapist used side flexion exercise. It was also found that 92 (92.00%) physiotherapist used strengthening exercise in mechanical neck pain (Table No- 05).

4.2.4: Provision of manual therapy by physiotherapist for the patient:

Table no 06: Provision of manual therapy by physiotherapist for the patient:

Variable	Frequency N=100	
	N	%
Soft tissue release	95	95%
Mobilization	85	85%
Manipulation	45	45%
Manual traction	97	97%

Multiple response:

It was rivaled that 95 (95.00%) physiotherapist adopted soft tissue release manual therapy in mechanical neck pain. 85 (85.00%) was used mobilization, 45 (45.00%) was used manipulation. It was also that 97 (97.00%) participants used manual traction in mechanical neck pain (Table No-06)

4.2.5: Provision of electrical modalities by physiotherapist:

Table no 07: Provision of electrical modalities by physiotherapist.

Variable	Frequency n=100	
	N	%
TENS	99	99%
SWD/MWD	77	77%
UST	94	94%
Shock wave	34	34%
Laser therapy	33	33%
Traction	96	96%
Dry needling	50	50%

It was raveled that 99 (99.00%) physiotherapist use TENS in mechanical neck pain. It was also found that 96 (96.00%) adopted traction electrical modalities in mechanical neck pain (Table No- 07).

4.2.6: Provide Orthosis:

Table no 08: Provide Orthosis.

Variable	Frequency	n=100
	N	%
Cervical collars	100	100%
Cervical pillow	74	74%
Tapping	41	41%
Others device	1	1%

It was revealed that 100 (100%) participants adopted cervical collars in mechanical neck pain. It was also found that 74 (74%) use cervical pillow in mechanical neck pain (Table No- 08).

4.2.7: Provision of rehabilitation program:

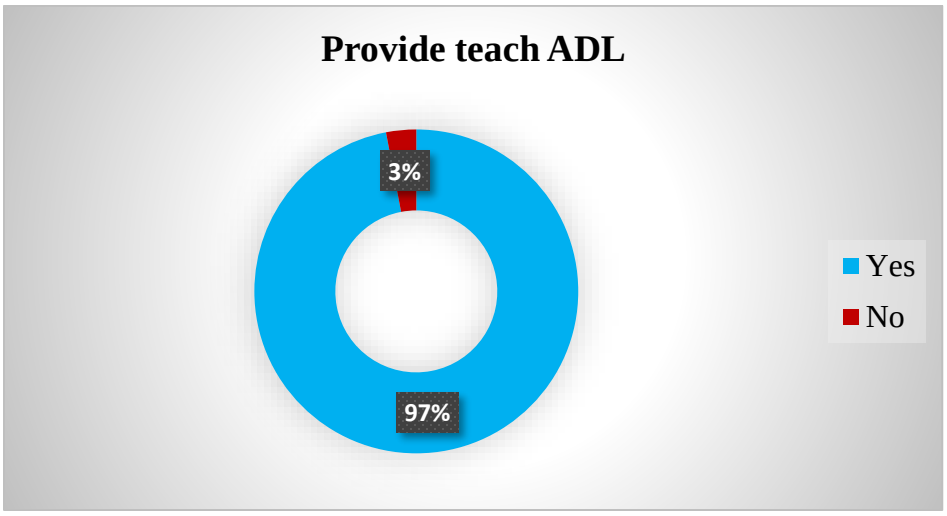
Table no 09: Provision of rehabilitation program.

Variable	Frequency	n=100
	N	%
Stretching program	44	44%
Strengthening program	90	90%
Isometric program	98	98%
Hold & relaxed program	77	77%

About rehabilitation program provide of the respondent, 97 (97.00%) respondents replied yes and 3 (3.00%) replied no. it also found stretching program 44 (44.00%), strengthening program was 90 (90.00%), isometric program was 98 (98.00%), hold and relaxed program was 77 (77%) use for mechanical neck pain (Table No- 08).

4.2.7: Provide teach ADL:

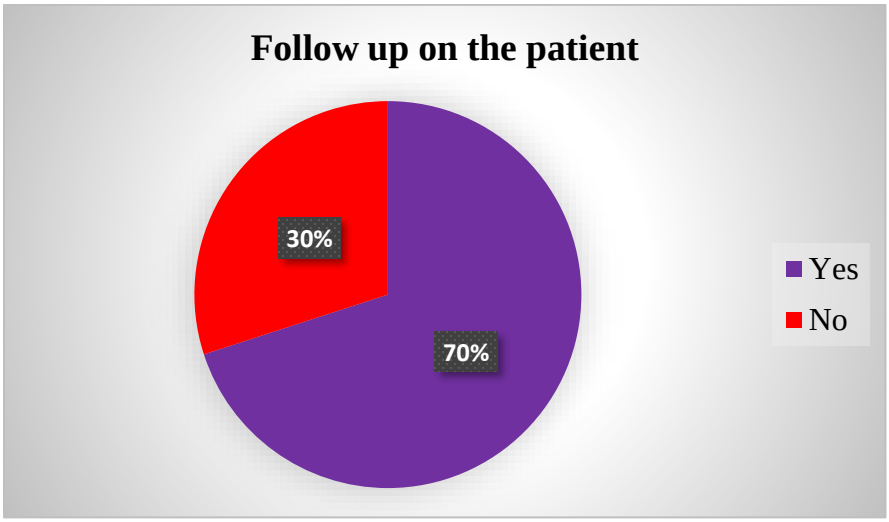
Figure no 07: Provide teach ADL.



About provide tech ADL in mechanical neck pain management 97 (97%) respondents were replied yes and 3 (3%) respondents also replied no (Figure no-07).

4.2.8: Follow up on the patient:

Figure no 08: Follow up on the patient.



Regarding follow up on the patient in mechanical neck pain management 70 (70%) respondents were replied yes and 30 (30%) respondents also replied no (Figure no-08).

CHAPTER:VI DISCUSSION

Regarding frequency distribution of the participants by age, it was found 69 (69%) participants belong of the age group of 31-40 years, it was also found 18 (18%) study subject were in the age group of 20-30 years, it was also found 13 (13%) study subject were in the age group of 41-50 years. The mean age of the participants was 35.85 years and SD was 4.58. on the other hands authors found that the mean age of the participants were 44.63± 9.73 years with a range from 26 to 60 years. It is found that 43.7%, 31.3%, 18.7% and 6.3% of the participants belonged to age group 46-55 years, 36-45 years, 26-35 years,56-65 years respectively of conventional physiotherapy technique compare to neural mobilization technique mean age of the respondents were 47.50 ±10.35 years with a range of from 26 to 65 years. That 37.5%, 31.3%, 18.7%, 12.5% of the participants belonged to age group 36-45years, 56-65 years, 46-55 year and 26-35 years respectively. Which is similar or dissimilar to this article. (Khalil, I., 2016).

About gender of the respondents, 91% respondents were male and 9% were female respondents. Nasir, R., 2015 founded 16 Patients with neck pain were included as sample of the study, among them almost 25% (4) were male and about 75% (12) were female. Which is similar to this research. (Nasir, R., 2015)

This study living area of the participants urban (96) was 96%, semi urban was (1) was 1%, rural (3) was 3%. Researcher works Total 65 female participants who are suffering from neck pain. In percentage rural area was about 85% and urban participants were 15%. (Khatun, T.,2018)

This finger shows that education level of the participant PhD participant was 2, post graduate participant was 1, graduate participant was 83, diploma participant was 14.

This article shows that most of the participants married was 90% (n=90), unmarried was 10% (n=10). Similar or dissimilar article showed that 65% participant are married, 17% participant are unmarried, 10% are divorced and 10% are widow female. (Khatun, T.,2018).

About marital status of the participants, 90 (90%) respondents were married and 10 (10%) were unmarried respectively.

Regarding the study Show that the family type of the participants belong nuclear was 71 (71%), Extended was 29 (29%) respectively

About monthly income of the participant by Bangladeshi taka, it was found 49 (49%) belong to the taka (41000-50000). It was also found 34 (34%) belong to the taka (31000-40000). The mean monthly income of the participants was 45230 and standard deviation was 8344.66. on the others hand author found that Analyzing 190 data, Participants lowest income were 8000 BDT 1(.5%), highest 70,000 1(.5%) Middle ranged income (21000-40000) BDT 49.5%. From (11000-20000) BDT was 41.6%. which is similar or dissimilar in this article (Naine, M.Z., 2019).

Regarding frequency distribution of the participants by body mass index (BMI). It was found 75 (75%) participants belong to the BMI (Body mass index) of (18.6-24.9) normal. It was also found 14 (14%) participants underweight (<18.5) and 11 (11%) participants over weight (25-29.9). The mean BMI of the participants was 23.19 and SD was 2.56.

The study show that 73(73%) participants were practicing more than 5 years and 27 (27%) participants were practicing less than 5 years.

About concept following in mechanical neck pain management 94 (94%) respondents were used mulligan concept, 78 (78%) respondents were used cyrix concept and 54 (54%) respondents also used maitland concept.

It was revealed that 81 (81.00%) participants adopted retraction exercise in mechanical neck pain, 90 (90.00%) physiotherapist used stretching exercise, 54 (54.00%) physiotherapist used side flexion exercise. It was also found that 92 (92.00%) physiotherapist used strengthening exercise in mechanical neck pain. Isometric exercise of neck was prescribed for 20(10.5%) participants. Active movement was for 30(15.8%), not for 160(84.2%), passive movement for 13(6.8%), not for 177(93.2%), Resisted exercise for 4(2.1%), not for 186(97.9%), strengthening exercise for 20(10.5%), not for 170(89.5%) (Naine, M.Z., 2019).

It was rivaled that 95 (95.00%) physiotherapist adopted soft tissue release manual therapy in mechanical neck pain. 85 (85.00%) was used mobilization, 45 (45.00%) was used

manipulation. It was also that 97 (97.00%) participants used manual traction in mechanical neck pain.

Allison et al., 2002 described treatment for neck pain as followed, Neural mobilization in comparison with articular mobilization, Thoracic mobilization, stretching and strengthening exercise was included in articular mobilization (Allison et al., 2002).

Walker et al., 2008 stated manual technique including thrust and non-thrust mobilization, muscle energy and stretching exercise are effective and absolute treatment protocol (Walker et al., 2008).

Jull et al., 2007 described treatment for neck pain was, mobilization, muscle reeducation (flexor and extensor group), patient education (Jull et al., 2007).

(Amin, Akhter and Rahman, 2015) conducted a study in Dhaka city show that amongst 400 participants, 301(75.2%) participants had neck pain and for pain the participants were given UST (85%), SWD (97.95%), IRR (33.75%) and exercise (91.25%). Amongst the 190 participants, UST was prescribed for 37(19.5%), 153(80.5%) wasn't prescribed. SWD for 38(20%) participants, 152(80%) wasn't, MWD for 33(17.4%), 157(82.6%) was not. IFT was prescribed for 15(7.9%) participants, 175(92.1%) was not. IRR was prescribed for 19(10%), 171(90%) not prescribed. It was raveled that 99 (99.00%) physiotherapist use TENS in mechanical neck pain. It was also found that 96 (96.00%) adopted traction electrical modalities in mechanical neck pain (Amin, Akhter and Rahman, 2015).

It was revealed that 100 (100%) participants adopted cervical collars in mechanical neck pain. It was also found that 74 (74%) use cervical pillow in mechanical neck pain.

About rehabilitation program provide of the respondent, 97 (97.00%) respondents replied yes and 3 (3.00%) replied no. it also found stretching program 44 (44.00%), strengthening program was 90 (90.00%), isometric program was 98 (98.00%), hold and relaxed program was 77 (77%) use for mechanical neck pain. Off the 78 respondents, 11.3% (n=9) complaint off neck pain, they received mobilization, IRR, stretching, postural reeducation, strengthening exercise, Isometric exercise of neck as physiotherapy intervention (Turja, W.R., 2020)

About provide tech ADL in mechanical neck pain management 97 (97%) respondents were replied yes and 3 (3%) respondents also replied no.

Regarding follow up on the patient in mechanical neck pain management 70 (70%) respondents were replied yes and 30 (30%) respondents also replied no.

Chapter-VI: Conclusion and Recommendation

6.1 Conclusion

Bangladesh is a developing country, all the sectors including health is continuously changing and getting resourceful through man power, research and quality of service. Physiotherapy profession is a noble profession, recognized in worldwide, physiotherapist have the capability and legal rights to make a thorough assessment of a patient, reach a conclusion in diagnosis, create a treatment plan by setting goals, sub goals to achieve the success. In Bangladesh, physiotherapy profession is gradually entering into the main stream of health service. Huge number of patients with musculoskeletal or neurological complains visit different physiotherapy clinic/ chamber or hospital to receive physiotherapy treatment. In this research, most of the participants practice mechanical neck pain management more than 5 years was 73% and following concept mechanical neck pain management mulligan concept was 94%, major professional was used strengthening exercise 92%, soft tissue release used 95%. And some profession used electrotherapy. So we found that major physiotherapy professional practice manual therapy to reduce mechanical neck pain management. However, research makes the professional update field knowledge about the profession.

6.2 Recommendations:

The aim of this study was to Common treatment approaches used by physiotherapy professional for chronic mechanical neck pain and the result from the study had fulfilled the aim of the project. Following recommendations may be Sample should had collected from more hospital, clinic, institute and organization in different district of Bangladesh to generalize the result. This was an undergraduate study and doing the same study at graduate level would give more precise output. There were some limitations of this study mentioned at the relevant section; it was recommended to overcome those limitations during further study.

Physiotherapist may provide proper recommendation for every single risk which will be helpful for better service.

CHAPTER: VII REFERRENCE

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QUESTIONNAIRE (English)

Title

“Common treatment approaches used by physiotherapy professional for chronic mechanical neck pain”.

Date…. /….. /2023 Code no: | | | |

Participant name: …….

Address: ……

Mobile no: ……

Section:1. Sociodemographic information

Q.no.	Question	Answer
1.	How old are you?	
2.	Gender/sex of the participant? 1. Male 2. Female 3. Third gender	
3.	Where do you live? 1. Urban 2. Semi urban 3. Rural	
4.	What is your education level? 1. PhD 2. Post graduate 3. Graduate 4. Diploma	

6.	Marital status? 1.Maried 4. Divorced 2.Unmarried 5. Separated 3.Widowed 6. Others	
7.	What is your family type? 1. Nuclear 2. Extended	
8.	What about your monthly income?	
9.	BMI Body weight in kg Hight in cm	

Section: 2. Treatment related information:

Q.no.	Question	Answer
10.	How long time have you been practicing treatment for chronic neck pain?	……..years
11.	Which concept do you following in mechanical neck pain management? 1. Maitland concepts 2. Mulligan concepts 3. Cyrix concepts	
12.	Do you used exercise in mechanical neck pain management? 1. Yes 2. No If yes, please answer the next question.	

13.	Which type of exercise doing? 1. Retraction exercise 2. Protrusion exercise 3. Side flexion 4. Stretching exercise 5. Strengthening exercise	
14.	Do you provide manual therapies? 1. Yes 2. No If yes, please answer 15	
15.	What type of manual therapy have you provide? 1. Soft tissue release 2. Mobilization 3. Manipulation 4. Manual traction	
16.	Do you provide electrical modalities? 1. Yes 2. No If yes, please answer 17	
17.	What type of modalities do you used? 1. TENS 2. SWD/MWD 3. UST 4. Shock wave 5. Laser therapy 6. Traction 7. Dry needling	

18.	Do you provide orthoses/ supportive device? 1. Yes 2. No If yes, please answer 19	
19.	Which type of orthoses do you provide? 1. Cervical collars 2. Cervical pillows 3. Taping 4. Others	
20.	Do you provide rehabilitation program? 1. Yes 2. No If yes, please answer 20	
21.	Which type of rehabilitation program provide 1. Stretching program 2. Strengthening program 3. Isometric program 4. Hold & relaxed program	
22.	Do you provide teach ADL? 1. Yes 2. No	
23.	Do you follow up on the patient? 1. Yes 2. No	

সম্মতিপত্র

উত্তর দাতার আইডি নম্বর | | | |

প্রিয় অংশগ্রহণকারী,

আমি সুমন চন্দ্র রয়, সাইক কলেজ অব মেডিকেল সায়েন্স অ্যান্ড টেকনোলজি (এস সি, ,এম,এস,টি,)-এর বি এস সি ইন ফিজিওথেরাপী বিভাগের ফাইনাল বর্ষের ছাত্র। আমার বি এস সি ইন ফিজিওথেরাপী ডিগ্রি সম্পন্ন করতে গবেষণার অংশ হিসাবে "দীর্ঘস্থায়ী ঘাড় ব্যথা রুগীদের মধ্যে ফিজিওথেরাপি পেশাদারদের ব্যবহারিত সাধারণ চিকিৎসা পদ্ধতি" শিরোনামের একটি গবেষণার কাজ করছি। এখানে আপনার সামাজিক – জনতাত্ত্বীক তথ্য , আপনার ব্যবহারিত দ্রব্য এবং চিকিৎসা সম্পর্কে কিছু প্রশ্ন দেয়া আছে যা আপনাকে পূরণ করতে হবে ।আপনার নিজের দেয়া সাক্ষাতকার দিতে ১৫-২০ মিনিট সময় লাগবে। এখানে প্রশ্নাবলীর একটি তালিকা দেয়া আছে এবং আপনাকে প্রত্যেকটি প্রশ্নের উত্তর দিতে হবে। এই গবেষণার প্রাপ্ত তথ্য শুধুমাত্র শিক্ষা ক্ষেত্রে ব্যবহার করা হবে এবং অংশগ্রহণকারীর ব্যক্তিগত তথ্য সম্পূর্ণ গোপণীয়তার মধ্যে থাকবে , অন্য কোথাও প্রকাশ করা হবে না । গবেষণা চলাকালীন সময়ে অংশগ্রহণকারী কোনোরকম দ্বিধা বা ঝুঁকি ছাড়াই যেকোনো সময় এটাকে বাদ দিতে পারবেন। আপনার একান্ত সহযোগীতা কামনা করছি।

অংশগ্রহণকারীর ঘোষণা

আমাকে এই নিরীক্ষার জন্য আমন্ত্রন জানানো হয়েছে ।আমাকে সম্পূর্ণ প্রশ্নগুলো পরে বুঝানো হয়েছে এবং আমি কোন দ্বিধা ছাড়াই উত্তর দিয়েছি ।আমি লক্ষ্য করেছি, এই গবেষণায় আমার অংশগ্রহণ শেচ্ছায় এবং কোনোরকম ঝুঁকি ছাড়াই, আমি যে কোন সময় এটাকে বাদ দিতে পারব । আমি এই গবেষণায় অংশগ্রহণ সম্পূর্ণ সম্মতি জ্ঞাপন করছি।

অংশগ্রহণকারীর নাম.....

স্বাক্ষর এবং তারিখঃ.....

টিপসইঃ.....

সাক্ষীর স্বাক্ষরঃ.....

Gantt chart

Activities/Month	Sep 22	Oct 22	Nov 22	Dec 22	Jan 23	Feb 23	Mar 23	April 23	May 23	Jun 23	July 23	Aug 23
Proposal presentation												
Introduction												
Literature review												
Methodology												
Data collection												
Data analysis												
Result												
1st presentation												
Discussion												
Conclusion & recommendation												
2nd presentation												
Communicate with supervisor												
Final submission												