

**CHARACTERISTICS OF NECK PAIN AMONG THE PATIENTS
ATTENDED AT MUSCULOSKELETAL UNIT, CRP**

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

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We the undersigned certify that we have carefully read and recommended to the Faculty of Medicine, University of Dhaka, for the acceptance of this dissertation entitled

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ATTENDED AT MUSCULOSKELETAL UNIT, CRP**

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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 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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Acronyms

ADL	Activity of Daily Living
BHPI	Bangladesh Health Professions Institute.
BMI	Body Mass Index
CRP	Center for the Rehabilitation of the Paralyzed.
MS	Musculoskeletal
NP	Neck Pain
NSAID	Non-Steroid Anti Inflammatory Drug
PT	Physiotherapy
SPSS	Statistical Package for the Social Sciences.
UK	United Kingdom
VAS	Visual Analogue Scale
WHO	World Health Organization

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Abstract

Purpose: To identify the characteristics of neck pain among the patient attending in Musculoskeletal unit, CRP. *Objectives:* to explore the socio demographic information of people suffered with neck pain; to identify the lifestyle related information of people suffered with neck pain; to find out the information about vulnerable posture suffered with neck pain and to focus the work and posture related information and the severity of pain. *Methodology:* A cross sectional study was conducted with a structured and close ended interviewer administered questionnaire to collect information from 55 neck pain patient in respects through convenient sampling procedure. Data was numerically coded and captured in Microsoft excel, using an SPSS 16.0 version software program. *Results:* Among 55 participants with neck pain, This study showed female participants about 54.50% were most affected part predominantly rather than Male (45.5%) and its contributory portion were combination of occupation like job, service holder etc about 45.50%, Majority of the participants came from rural area (50.90%), maximum participants represents were between 51-60 years of age, 92.70% participants feeling pain during movement, maximum patients complain with moderate neck pain (63.60%), 61.80% participants were having fair health status and highest number of participants having radiating pain (58.20%) and also 40.0% patient not having any previous episode of neck pain, 67.3% participants preferred side lying position during sleeping, large number of participants experienced as intermittent pain that was about 58.2% where as pain frequency for maximum participants were constant & that was 40%, Most of the participants sitting for most of the time in a day (52.7%). *Conclusion:* The result of the current study indicates that higher prevalence of neck pain can be involved the characteristics percentage among people in Bangladesh. These study to them a baseline for the physiotherapy services provision for the patient with neck pain.

1.1 Background

Now a day's Neck pain is a major public health problem. It is more common in Scandinavian country rather than Asia and Europe. In Netherland, In 1996, the rate of neck pain is about 1% in total population. But now it is increasing day by day(Fejer et al., 2006). Neck pain is also a common symptom among the middle aged population. During preceding month it has been shown that men are affected about 24% and female about 37% had suffered from neck pain (Mantyselka et al., 2010).In perspective of neck pain, it slightly more common in women. In Norway and Finland there is a same prevalence of neck pain and is about 13.8%. In these male is about 9.5% and 13.5% are about female. Older patient, physically and mentally involved in a stressful job, current smokers are more vulnerable to have neck pain (Makela et al., 1991). In Sweden, Females aged 35-44 had higher risk to have long and mediumterm neck pain symptoms than males in the same group of age. Males aged ≥ 65 had higher risk to have longand medium term neck pain symptoms than males aged 35-44 (Linder et al., 2012).

Neck pain is to be regarded as a dynamic process, since pain is characterized more by change than by stability and those transitions between different NP states and changes in pain intensity and severity are to be expected. Neck pain is a common disorder in the general population but the age and sex-specific occurrence in neck Pain is not well defined. According to recent systematic reviews, the one-year prevalence of neck pain of any type varies between 2% and 80% and is higher among women than men. In Denmark, a higher one-month prevalence among 100-year-olds was found; 23% and 19% for women and men respectively (Skillgate et al., 2012).Neck and upper limb symptoms are frequently reported In western countries in present time. A survey conducted in 15 European countries showed a prevalence of 25% for work-related neck pain. Including general Dutch working population28% of them suffered from pain or stiffness in the neck. Reducing neck and upper limb symptoms of is a major task for occupational health care (Bernaards et al., 2007). In Canada, significantly raising the prevalence of pain withage & females are more likely to suffer pain than male at every age older than 18 years.On these the prevalence of chronic pain is about

15.1%, the intensity of mild pain is about 28.9% where moderate intensity is 54.4% & severe intensity is about 16.7%. Neck pain in Canadian people is about 9.3% (Schopflocher et al., 2011). In Japan, The prevalence of chronic musculoskeletal pain was significantly higher among women and that is almost 16.8%. Pain occurred most frequently in the lower back and immediate after Neck pain is most common for this time. Neck was also highly ranked among sites of pain persisting for the longest periods. It is found that significantly higher prevalence (17–19%) in those in their 30s to 50s of age (Nakamura et al., 2011).

Neck pain is common among Hong Kong people. Significantly higher risk of having neck pain among managers, professionals and administrators were at 18.9% of neck pain sufferers had to limit their work; and 3.6% had to apply for sick leave. In Hong Kong, 25.2% of neck pain sufferers consulted medical or health professionals. Of them, 9.2% visited a medical doctor and 4.9% sought help from physiotherapists (Chiu et al., 2012). In Bangladesh, Neck pain is a common clinical presentation in primary care. It has been shown that half of the population will have an episode of neck pain in their whole life cycle. Neck pain may affect at any age, but in older age it is more common. In study it is discovered that most vulnerable cause of neck pain is cervical spondylosis. In Bangladesh it has shown that table workers are the most affected group of people. They are about 26.08% of total neck pain. In second position, housewives are affected about 23.43% (Shakoor et al., 2002).

It is common for patients with non-specific neck pain to report problems with upper limb function. It has long been recognized that neck pain can result in symptoms and problems being referred into the upper limb. For example in the presence of radiation of pain, dermatomal loss and myotomal weakness may occur in the upper limb and a clinical neurological examination may identify these specific impairments to the neurological system. That can have a significant effect on overall health status (McLean et al., 2010). In Physical therapy, When Manual therapy is combining with other active treatment that is moderately effective according to the evidence. Postural correction is much more important for prevention of neck pain (Liebenson, 2002).

1.2 Rationale

Neck pain is treated as musculoskeletal pain can appear from different musculoskeletal disorders. With the comparison of low back pain it is true that the percentage of neck pain patient is relatively low. But in modern science the rate of neck pain is gradually increasing day by day. Only medication or conservative treatment is not enough for managing neck pain. There will also require therapeutic measure. Neck pain can arise from different condition or injury. So for proper way to manage the patient, therapeutic intervention is needed along with medication. Many of us who have not informed about its purpose, its efficacy and the value of this profession. Women may be affected mostly because most of them are housewife and majority part of them maintains an abnormal posture. Their sitting arrangements are not well decorated. In office going people neck pain is very common due to their usage of computer and also laptop or note book. Workers experiencing aches and pains on the job may not be able to do quality work. It also may decrease productivity and the quality of products and services. So the study may help to their awareness about their posture. These study will also help us to determine or to identify the Characteristics of pain on neck problems such as cervical spondylosis, neck stiffness, neck strain, whiplash injury, neck injury, herniated disc or pinched nerve etc and to identify the pain duration, onset, intensity and aggravating factor among the patient with neck pain. Physiotherapy is newly introduced in our country. This finding of the study will brought to authority concern for future intervention whereby physiotherapy may extent their cooperation and will take preventive measure in case of neck pain. Besides this it will be helpful for professional development which is crucial for current situation of the profession. When the investigator collect the data she/he must introduce himself to the participants as the physiotherapist and his role in musculoskeletal sector, as a result, at least the participants of this study get the information about one of the sectors of physiotherapy thus the information about the physiotherapy profession is spread out and the investigator thinks that it also will be very helpful in professional development of physiotherapy which is necessary for the current situation.

1.3 Research Question

What are the Characteristics of neck pain among the patients attended at Musculoskeletal unit, CRP?

1.4 Objective

1.4.1 General objective

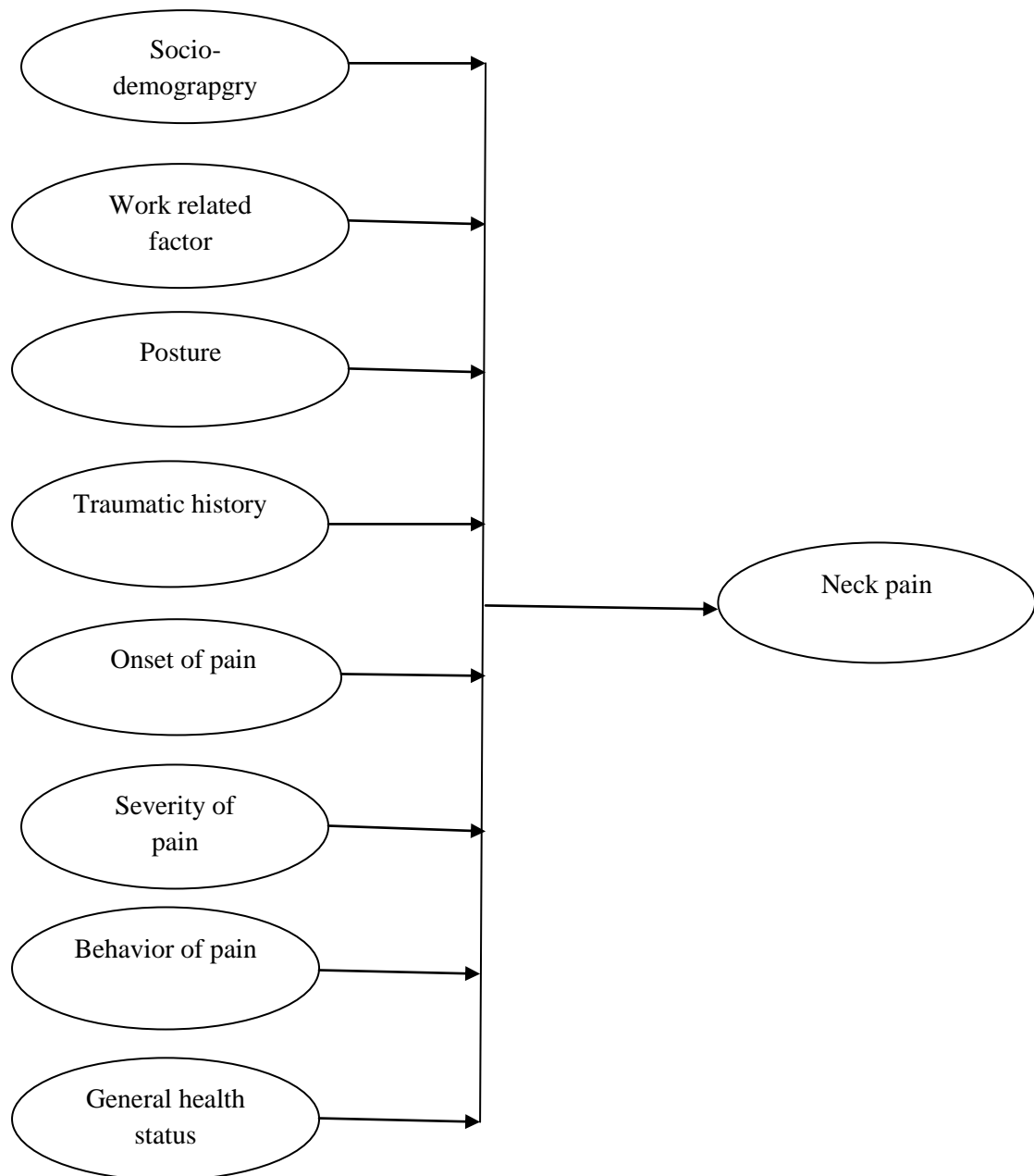
- To determine the Characteristics of neck pain among the patients attended at Musculoskeletal unit, CRP

1.4.2 Specific objective

- To explore the socio-demographic information of people suffered with neck pain.
- To identify the life style related information of people suffered with neck pain.
- To find out the information about vulnerable posture suffered with neck pain.
- To focus the work and posture related information & the severity of pain.

1.5 Conceptual Framework

Independent variable **Dependent variable**



1.6 Operational definition

Neck pain

Neck pain is the sensation of discomfort in the neck area. Neck pain can result from disorder of any structure in the neck, including the cervical vertebrae and vertebral disc, nerve, muscles, blood vessels, oesophagus, larynx, trachea, lymphatic organ, thyroid gland or parathyroid gland. Neck pain arises from numerous different conditions and is sometimes referred to as cervical pain.

Characteristic

A feature that helps to identify, tell apart, or describe recognizably a distinguishing mark or trait.

BMI

A standardized estimate of an individual's relative body fat calculated from his or her height or weight. The formula for calculating BMI is weight in kilogram (kg) divided by height in meters (m) squared.

NPR scale

A testing technique for measuring subjective or behavioral phenomena (as pain or dietary consumption) in which a subject selects from a gradient of alternatives arranged in linear fashion.

NSAID

NSAID or non-steroidal anti-inflammatory drugs is a class of analgesic medication that reduce pain, fever and inflammation.

Stiffness

Results from insufficient use of the part.

Pain is an unpleasant emotional state felt in the mind but identifiable as arising in a part of the body. In other word it is a subjective sensation. Pain is a defense mechanism designed to make the subject protect an injured part from further damage (Wilde et al., 2007). By any measure, pain is significantly a global health problem. Globally, it has been reported that 1 in 5 adults suffer from pain. pain can experience acute, chronic, or intermittent, or a combination of the three. Pain is a multivalent, dynamic, and ambiguous phenomenon; it is notoriously difficult to quantify (Goldberg & McGee, 2011). The non communicable diseases have been dramatically rising all over the world especially musculoskeletal diseases which considered one of the major causes of morbidity throughout the world. Work related neck pain is one of the common musculoskeletal disorders that affects millions of workers throughout the world across variant works or sectors of services. Most of them were married 72.3% when compared to 27.7% were single. In terms of age, between 18-29 years of age people, the rate of Neck pain is about 44.2%. In terms of BMI, 36% obese are most likely to have Neck pain (Mustafa & Sutan, 2013).

The West and the Midwest of the Asia are the regions where the prevalence of neck pain is highest; the South has the lowest prevalence. Prevalence of neck pain is highest among poor respondents. Age groups of 45 to 64 years, 65 to 74 years, and 75 years and older had a similar prevalence of neck pain that's range 31.1%–32.2%, but the group aged 18 to 44 years had a lower prevalence and which is 23.9%. White women had the highest rate of prevalence of neck pain (18.0%), followed by Hispanic women (16.8%), white men (13.2%), and African American women (12.6%) (Paul, 2008). In Europe, Chronic pain is common and that chronic pain affects negatively many aspects of quality of life, and that patients with long lasting pain experience a multitude of negative attitudes and distrust from health care providers, from colleagues, families and acquaintances. Chronic pain of moderate to severe intensity occurs in 19% of adult Europeans, seriously affecting their daily activities, social and working lives (Breivik et al., 2006). The recent increase in computer-related work as a consequence of rapid industrialization has considerably increased the prevalence of Complain of Arm Neck & Shoulder among computer office workers not only in

western developed countries but also in developing countries such as Sudan and Sri Lanka. In Sri Lanka, 36.7% of people with computer-related work have been affected by neck pain. Modification of incorrect postures at work and improvements in the ergonomic designs of workstations could be important not only as primary preventive strategies but also as a secondary preventive measure in those with symptoms (Ranasinghe et al., 2011). Neck pain is a common source of disability. About 14.6% of the population has neck pain with disability on the basis of age and gender. Neck pain is a disabling condition with a course marked by periods of remission and exacerbation. Contrary to prior belief, most individuals with neck pain do not experience complete resolution of their symptoms and disability (Cote et al., 2004).

About 5% of adults were significantly disabled by neck pain in the general community. Severity of neck pain and disability experience those people who rarely perform physical activity, have a history of neck trauma, type with greater force, use the keyboard and mouse for greater than 6 hours per day, spend more than 2 hours sitting at their workstation before taking a break and spend more than 2 hours on computer-based tasks (Johnston et al., 2008). Musculoskeletal pain in the cervicobrachial region is considered a major problem among adults of working age. Although most reported neck pain is relatively mild and causes only minor limitations, nearly 5% of the working population are significantly disabled by neck pain. That pain intensity interferes with quality of life and functioning found that severe neck pain was strongly associated with difficulty in grasping small objects and loss of manual dexterity. Even with unknown pathophysiology, pain tends to create a cluster of related problems such as chronic fatigue, sleep disturbance, excessive rest and withdrawal from activity and mood disorder (Korkmaz et al., 2011).

Musculoskeletal disorders have been associated with individual and biomechanical risk factors in the workplace. These disorders develop gradually, show a chronic course and often go untreated. Although many symptoms are associated with work-related musculoskeletal disorders, one of the most notable symptoms is pain. Painful symptoms may worsen gradually and progress to loss of function. Pain and loss of function may persist for years and in some cases, become intractable (Coury et al., 2009). Work-related neck disorders are a major health problem in many occupations,

In recent decades, work- related musculoskeletal disorders among computer users are receiving a growing attention. The current study included 130 participants of computer operators of a communication company. About 55.4% of them were females and 44.6% were males. Some risk factors for developing neck pain among computer user are as duration of employment, body mass index, boring work, psychosocial troubles and chronic headache (Hagag et al., 2011).

Factors that are Physical workload such as repetitive motion, static posture, awkward posture and neck flexion or rotation have significant association with Neck Pain. The cervical spine is surely the most complicated articular system in the body; there are 37 separate joints whose function it is to carry out the myriad movements of the head and neck in relation to the trunk, and subserve all special sense organs, e.g., eyes, ears, nose, taste, touch, and proprioception. The 7 small cervical vertebrae with their ligamentous, capsular, tendinous, and muscle attachments appear poorly designed to protect their contents, compared with the skull above and the thorax below (Shan et al., 2012). There could be a difference between forwards and backs in the frequency of abnormal cervical functional parameters as forwards have a more physical role. Patients with cervical pain have a poorer ability to relocate the head on the trunk after an active head movement (Gemmell&Dunford, 2007). Mechanical neck pain is a significant societal burden and may include symptoms in the neck and upper extremity. Mechanical neck pain was defined as generalized neck or shoulder pain provoked by sustained neck postures, neck movement, or palpation of the cervical musculature. Physical therapy is usually the first management approach for patients with mechanical, idiopathic, insidious neck pain, and manual therapy is often the preferred intervention (Hernandez et al., 2012). The upper limb is mechanically connected to the neck and shoulder girdle via skeletal and muscular structures. Mechanical loading of the upper limbs may cause neck pain as a direct consequence of increasing the mechanical loading to the articular and ligamentous structures of the neck or by creating protective spasm (Gorski& Schwartz, 2003).

Pain in the neck is often combined with shoulder pain, jaw pain or back pain. Even minor neck pain can affect your quality of life. Slight deviations within the structure of the neck can result in nerve irritation, which appears as pain or reduced mobility in the neck, inability to turn the head from side to side, grinding sounds or headache. A

history of previous neck injury at baseline was a significant risk factor for subsequent neck pain in a year independently about gender and psychological status (Croft et al., 2001). The human neck is a very complex mechanism, containing vital neurologic, vascular, and respiratory structures as well as the cervical vertebrae and spinal cord. More than 50% of the injuries appear to be in the neck area by rear and collision. Neck is a slender column that can be subjected to a variety of bending loads in association with an axial load. Neck injuries can range from mild to catastrophic. Generally, the injuries involving the spinal cord at the higher cervical levels are life threatening whereas those at the lower levels can result in paralysis (Chen et al., 2011).

Potential mechanisms that can alter the alignment of the cervical spine include pain, tightness in the soft tissues, imbalances in muscle activity or strength, muscle fatigue, and the cervical and thoracic curves. Changes in cervical and thoracic alignment as well as slouched posture are also known to contribute to altered alignment of the scapula. Altered cervical alignment is considered to be an important mechanism influencing cervical and scapular kinematics (Helgadottir et al., 2011). Neck pain is a pain perceived as arising in a region bounded superiorly in the superior nuchal line, laterally by the lateral margin of the neck and inferiorly by an imaginary transverse line through the T1 spinous process. The source of neck pain in anatomic terms and pertains to the sites which pain seems to be arising, without reference to its actual cause. Particular condition can cause neck pain. Neck pain can appear from Spondylosis, disc degeneration, Zygapophyseal joint problem, torticollis, Paget's disease etc. Neck pain can arise with headache. In 17% patient, headache may occur in combination with neck pain (Bogduk, 2003).

Neck pain includes general pain and stiffness in the neck region, which can include the neck, shoulders, arms, hands, or head. Neck pain is of three types. There is axial neck pain, radiculopathy, myelopathy. All the three types of neck pain is either acute or chronic. The growing interest in neck pain is mainly linked to the escalating disability burden and compensation costs associated with neck pain related to occupational injuries. Resolution of symptoms is a common criteria used in determining improvement, a complete disappearance of pain and other symptoms is not necessary to achieve recovery. Individuals may have recovered when the severity

of their symptoms has changed by an acceptable level, or when they have reached a certain threshold of pain or function with which they can cope (Cote et al., 2003). Many factors at work could predispose people to develop musculoskeletal disorders. Lifting or carrying loads, whole-body vibration, having a static posture for a long time and frequent bending and twisting have been proved to be the physical load risk factors consistently associated with work-related back and neck disorders. There is evidence for a causal relationship between low back and/or neck injuries and disorders (Shah & Dave, 2012).

It is important to identify the main determinants of neck pain and, especially, the risk factors that are potentially modifiable. Occupational activities have sometimes been implicated as causes of neck disorders (Palmar et al., 2001). Previous studies had pointed out that neck pain can affect social factors, which include shopping, family relationships and interactions, traveling and recreational activities. The physical factors associated with neck pain included heavy lifting, monotonous work tasks, static work posture, repetitive jobs and a high work pace. Psychological factors affected by neck pain were disturbed sleep due to pain, lack of ability to concentrate and focus feelings of anxiety and depression (Leonard et al., 2009).

Neck pain can manifest as an acute sprain, strain, or inflammation. Neck pain can arise from neural tissue disorders, spinal ligament strains, and natural degeneration of the facet joints. It may also be secondary to injury or muscle fatigue. The intervertebral disks are also potential pain generators. One study on the prevalence and risk factors for neck pain found that 68% of the subjects who experienced neck pain also admitted to having a poor psychosocial working environment. In the general population, up to 22% of persons experience neck pain and, if it becomes chronic, 44% will consult their primary care provider for relief. In addition, one-third of patients with neck pain will also report associated radicular symptoms or arm pain (Miller, 2008). Commonly mechanical neck pain is occurred in the general population resulting in a considerable economic burden. Often physical therapists will incorporate manual therapies directed at the cervical spine including joint mobilization and manipulation into the management of patients with cervical pain. Although the effectiveness of mobilization and manipulation of the cervical spine has been well documented Manual therapy interventions are one treatment strategy appropriate for patients with neck pain.

Thoracic spine manipulation results in an immediate reduction in pain and increases in cervical range of motion in individuals presenting with primary neck dysfunction (Cleland et al., 2004).

The main feature of mechanical neck pain is pain in the cervical region, which is often accompanied by restriction of the range of motion and associated with functional limitations. The pain may originate from many structures in the cervical region, especially the spine and soft tissues. Risk factors for mechanical neck pain are physical load factors, such as vibration, flexion of the neck, sitting posture and heavy lifting. Social factors are also reported to aggravate and perpetuate neck pain. Mechanical neck pain is self-limiting, 40% of patients contact their general practitioner. Of them, 30% are referred for further diagnosis by a medical specialist, and 32% are referred for conservative therapy consisting of physiotherapy, manual therapy or chiropractic care (Vonk, 2010). Most acute-onset neck pain related to physical activity does not require laboratory investigation. Common mechanical diagnoses include cervical strain, cervical disk herniation, cervical spinal stenosis, and cervical spondylosis or osteoarthritis of the neck. The history should exclude red flags or constitutional symptoms. Laboratory investigations for neck pain play a minor role in most cases. Judicious use of laboratory tests greatly enhances the physician's ability to provide appropriate care (Dreyer & Boden, 2003).

Differential diagnoses include metastatic disease such as from a renal cell carcinoma and multiple myeloma. The patients have vertebral involvement, localized pain being the most significant clinical feature. The recommended management includes surgical decompression. Close follow-up examination is necessary and clinical progression may merit further surgery or chemotherapy (Casey et al., 2004). Patients with spine problems has increased by 65% in less than a decade many patients seeking primary health care for musculoskeletal disorders, who would traditionally have been booked for assessment and treatment by a General Practitioner, could be adequately assessed and managed by a physiotherapist. Furthermore, patients were satisfied with primary assessment by a physiotherapist (Ludvigson & Ethovan, 2012). General Practitioners are often consulted first and they are also responsible for the long-term treatment of neck pain, choosing from a wide array of therapeutic options. Neck pain is frequently managed with a strategy of 'watchful waiting' or by referral to a

physiotherapist. The choice of management option depends on illness severity and duration, functional limitations and physician characteristics such as having a special interest in dealing with neck pain. Neck Pain and Its Associated Disorders has recommended exercise training, mobilization, manipulation, acupuncture, analgesics and low-level laser to address neck pain with no signs of serious pathology (Wermeling et al., 2011).

Medications, especially nonsteroidal anti-inflammatory, and referral for physiotherapy were the most common treatments used by general practitioners in a recent study of how primary care physicians diagnose and treat patients with chronic neck pain. Neck pain is the second most common condition for which complementary and alternative medical (CAM) therapies are used. In the United States, chiropractic and massage are the most commonly used complementary and alternative medical therapies for neck pain (Sherman et al., 2009). Various treatments may be advised by a physiotherapist. These include traction, heat, cold, manipulation, etc. The value of each of these treatments is uncertain as the results of research studies looking at which treatments work best can be conflicting. However, what is often most helpful is the advice a physiotherapist can give on neck exercises to do at home. A common situation is for a doctor to advise on painkillers and gentle neck exercises. Sometimes symptoms do not improve over a week or so, you may then be referred to a physiotherapist to help with pain relief and for advice on specific neck exercise. By maintaining a good posture it may help in reducing neck pain. There may also use a firm supporting pillow (Kenny, 2010).

Neck pain is much more common in recent time and surprisingly it resolves quickly in most individuals. If neck pain lasting for a long period of time (more than three months) then it will appear as chronic neck pain. It triggered as limited range of motion on neck and also produces disability. In United States chronic neck pain is the second leading cause to the workers. Treatments that can quickly reduce pain, increase motion, and improve the ability of the muscles to protect the neck may help decrease long-term disability associated with neck pain (Teyhen & Robertson, 2012). Neck pain is a frequent impairment associated with disability. The combination of manual therapy and exercise produces greater improvements in pain, function, quality of life and patient satisfaction when compared to manipulation or mobilization alone for

chronic neck pain (Miller et al., 2010). The McKenzie method is popular amongst physiotherapists as a management approach for spinal pain. McKenzie approach is that the patients receive individualized treatment based upon their clinical presentation. McKenzie therapy was statistically significantly more effective than other treatments in reducing pain and disability at short term follow-up (Clare et al., 2004).

Exercises involve bodily activities related to the neck region. There is moderate evidence of short- and long-term benefit on pain and function in chronic mechanical neck disorders for supervised exercises, e.g. stretching and strengthening programs focusing on the cervical and/or shoulder/thoracic region. Joint therapy involves manipulation, mobilization and traction. Manipulation involves a high-velocity thrust and mobilization involves low velocity thrust. Manual and mechanical traction is a technique applied with a traction force to the neck to separate two joint partners. Mobilization and manipulation combined effective as it reducing pain and improving function. Soft tissue therapy involves massage, as a manipulation of the soft tissues with the hand, foot, arm or elbow on soft tissue structures. For electromagnetic therapy, Low-level laser therapy demonstrated short term pain relief and positive functional changes for acute and chronic neck pain (Tsakitzidis et al., 2013). The efficacy of interventions for non-specific neck pain has not been well established. The use of physical therapies that involve combinations of manual therapy and exercise having short-term analgesic benefit from neck manipulation, thoracic manipulation, and neck mobilization applied as single modality interventions. The interventions are simple, inexpensive, accessible, and presumed to be safe and effective. Combinations of neck stabilization, relaxation, eye fixation, and posture training were also effective interventions in case of neck pain (Leaver et al., 2010). Neck pain is costly in terms of treatment. Growing evidence has confirmed that the use of manipulation with exercise or the use of mobilization with exercise in treating neck pain has better clinical outcomes than other major and common modalities. The effect of Thoracic manipulation in treating acute and sub acute mechanical neck pain demonstrated that combination of cervical and Thoracic manipulation didn't result in any significant benefit than cervical manipulation alone. The use of thoracic manipulation there was immediate improvement in neck pain (Lau et al., 2010). It has been reported that more than one in five people are currently experiencing neck pain. In the United States, it indicates that manual therapy techniques including

mobilization/manipulation are appropriate treatment strategies for the management of neck pain, as are modalities and therapeutic exercise (Carpenter et al., 2009).

The better option for these conditions living with neck pain is trying to prevent it. Try to avoid sitting in front of the computer for hours without getting up frequently to stretch the neck and back. If the patient is a smoker please stop it or if he or she is overweight try to get into shape. Pay attention to your body and exercise, eat right, and maintain a healthy life style. Most individuals are better in 1-2 weeks; more than 90% have no more pain after eight weeks (Borenstein, 2011). Persistent pain is one of the most common and compelling reasons for looking into the treatment. With having neck pain there is significant impairment of physical and psychological health, and performance of social responsibilities including work and family. There was preliminary evidence that gender, occupation, headaches, emotional problems, smoking, poor job satisfaction, awkward work postures, poor physical work environment, and workers may be associated with neck pain (Manchikanti et al., 2009).

3.1 Study design

The major aim of the study to answer the question of, 'Characteristics of neck pain among the patient attending at the Centre for the Rehabilitation of the paralyzed (CRP). The investigator chooses a quantitative cross sectional research model to explore the characteristics of neck pain. The most important advantage of cross sectional study is it need not more time and also cheap. As there is no follow up, fewer resources are required to run the study (Mann, 2003). A cross-sectional study is a descriptive study which providing a "snapshot" of the frequency and characteristics of a disease in a population at a particular point in time. The study questionnaire included about the subject's socio-demographic, lifestyle related feature and work & posture related feature.

3.2 Study sites and Study area

Musculoskeletal department of CRP, Savar was chosen as a venue by which investigator could obtain an appropriate sample with neck pain. The investigator thought that it was the most suitable place because there has the availability of the desire sample.

3.3 Study population and sampling

A population refers to the members of a clearly defined set or class of people, objects or events that are the focus of the investigation. So all of participants with neck pain who fulfill the inclusion and exclusion criteria of this study were the population of this study. But it was not possible to study the total population within the time of this study, so the investigator took only 55 participants as samples who were selected conveniently from selected area of CRP musculoskeletal department according to the inclusion and exclusion criteria. The investigator use the convenience sampling technique due to the time limitation and also for the small size of population and as it is the one of the easiest, cheapest and quicker method of sample selection.

3.4 Inclusion criteria

- The patients with having neck pain and Received physiotherapy from musculoskeletal department, CRP.
- Patients with inform consent.

3.5 Exclusion criteria

- Patients without inform consent.
- Have some other musculoskeletal problem.

3.6 Sample size

For this study, it was determinate to take samples as large ranging from 50 to 100 of it within given time but number of sample was selected 55 maintaining the inclusion and exclusion criteria and within the scarcity of time.

The actual sample size for this study was calculated as 245, using as calculation.

Formula:

$$n = \left\{ \frac{Z(1 - \alpha/2)}{d} \right\}^2 \times pq$$

Here,

$Z(1 - \alpha/2)$ = confidence level at 95% (standard value of 1.96).

n = required sample size

p = 0.20

q = (1-p) = 0.80

d = margin of error at 5% (standard value of 0.05)

3.7 Data collection tools and methods

In this study data were collected by using both structured and semi structured mixed type questionnaire. Mixed type questionnaire include only close ended questions. Firstly, investigator introduced himself and describe the project study as well its purpose. The investigator also provided consent form to the participant and explained that to build a trustful relationship. After obtaining consent by sign investigator asked pre-determine question to the participant. The investigator gave time to understand the questions fully so that they could be answered accurately. The Interview was conducted in warmly so that participants could understand easily. During the interview, the investigator wrote down field notes and observed the facial expression to collect accurate data from the participants because in grounded theory of quantitative research observation and interviewing both were commonly used for data collection. During the interview investigator use pen, paper, written questionnaire, file, Numerical Pain Reading scale (NPR scale).

3.8 Data analysis

Data was numerically coded using an SPSS version 16 software program. Descriptive statistic was used for data analysis which focused through table, pie chart and bar chart.

3.9 Inform consent

Before conducting research with the respondents, it is necessary to gain consent from the subjects (Bailey, 1997). For this study participants were selected conveniently for this study according to the inclusion and exclusion criteria and inform the study objective properly by using consent form. Participant and investigator signed in willingly into the consent form. By the consent form the participants were informed that they were completely free to decline answering any question during data collection and also free to withdraw their agreement and participation any time from this study. The participants were informed clearly that the confidentiality should be maintained strictly and information might be published in any presentations or writing but they will not be identified. And it is also ensure that the investigator will be available at any time to answer any additional questions in regard to the study.

3.10 Ethical consideration

It should be ensured by the investigator that it would maintain the ethical issue at all aspects of the study. Because it is the crucial part of the all form of research. At first to conduct the study, the ethical committee checked the proposal and granted the proposal then the investigator started the study. Permission was also taken from all the participants in the form of written consent during data collection. During the course of the study, investigator gave the consent form to the interested participant. They were informed that their participation was fully voluntary and they had the right to withdraw or discontinue from this study at any time without any hesitation or risk. Participants were also informed that confidentiality would be maintained and client codes were used to keep clients identity invisible. They were assured that taking part in this study would not cause any harm to them but the result of the study would be beneficial for them.

3.11 Limitations

There were a number of limitations and barriers in this research project which had affect the accuracy of the study, these are as follow:

- First of all, time of the study was very short which had a great deal of impact on the study. If enough time was available knowledge on the thesis could be extended.
- The samples were collected only from the selected area of CRP musculoskeletal department and the sample size was too small, so the result of the study could not be generalized to the whole population of the participants with neck pain in Bangladesh.
- A convenience sampling was used that was not reflecting the wider population under study. Characteristics were identified by a questionnaire, and the validity and reliability of this method may be questionable. However, a questionnaire might be the only feasible method of assessing in large populations.
- The research project was done by an undergraduate student and it was first research project for him. So the researcher had limited experience with techniques and strategies in terms of the practical aspects of research. As it was the first survey of the researcher so might be there were some mistakes that overlooked by the supervisor and the honorable teacher.

The purpose of the study was to determine the characteristics of neck pain among the patient attending at musculoskeletal unit CRP. All information was collected by using a structured questionnaire where most questions types were close ended and information was gathered by a face to face interview with regarding the ethical consideration from both the part musculoskeletal department of physiotherapy in centre for the rehabilitation of the paralyzed (CRP) and incoming indoor patient who suffered from neck pain. Data were numerically coded and captured in Microsoft Excel to show the result, using an SPSS 16.0 version software program for analyze the data as descriptive statistics. The investigator collected the descriptive data and calculated as descriptive statistics as percentage and presented by using both pie and bar chart. 55 participants were chosen to estimate the characteristics of neck pain among the patient attending in musculoskeletal unit CRP.

General health status

Among the 55 participants 19 participants had Good health, 34 participant's Fair health status and only 2 participants had Poor health status. In percentage 34.6% participants had Good health, 61.8% participant's Fair health status and 3.6% participant had Poor health status. So it is clear that maximum participants had fair health status.

General health status of the participants	Number (n)	Percentage (%)
Good	19	34.6%
Fair	34	61.8%
Poor	02	3.6%
Total	55	100.0%

Table-4.1: General health status of the participant

Educational Status

Among the 55 participants 4 participants were illiterate, 18 participants had some primary level education, 12 participants completed secondary level education, 5 participants had some higher secondary level education, 16 participants completed graduation or above education. In percentage 7.3% participants were illiterate, 32.7% participants had some primary level education, 21.8% participants completed secondary level education, 9.1% participants had some higher secondary level education, 29.1% participants completed graduation or above level education. So we can conclude as that primary passed candidate were the most affected participant and it is not strongly related with neck pain.

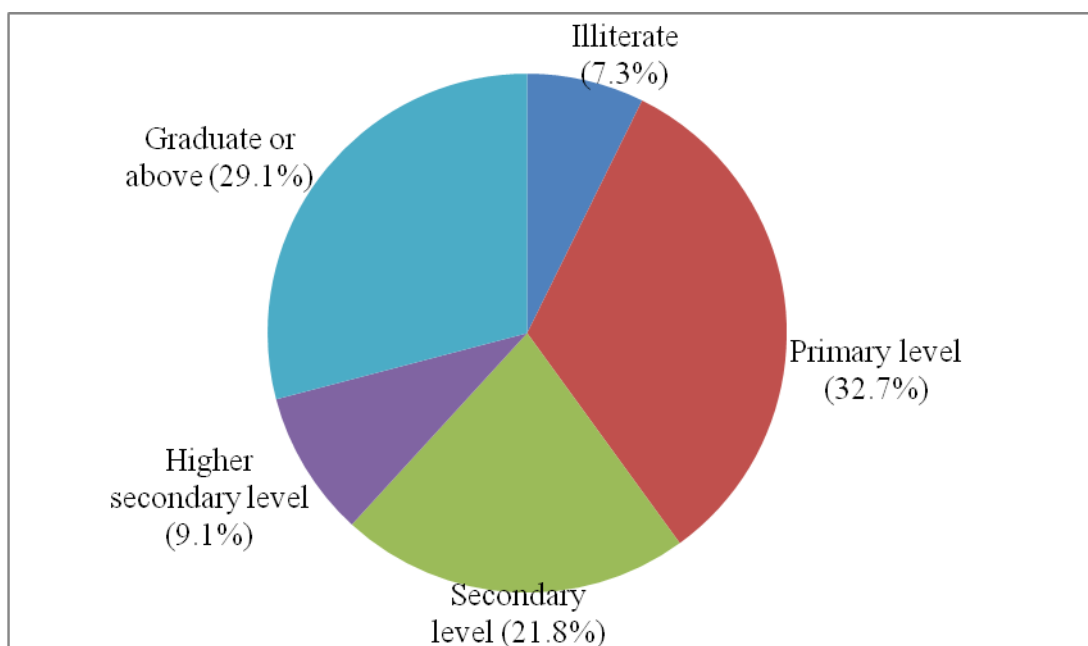


Figure – 4.1: Educational Status of the participants

Age group

The study was conducted on 55 participants of Neck pain. Out of the participant the mean age of the participants was 42.73 (± 12.50) years. The range is 48 with minimum age 22 years and maximum 70 years. Among the participants the higher numbers of the participants were 45 years and the numbers were 5 (9.1%). The number of ≤ 50 years were 38 (69.1%) and >50 were 17 (30.9%). The graphical chart shows that for the experienced of neck pain 51-60 years of age were the most affected group of age.

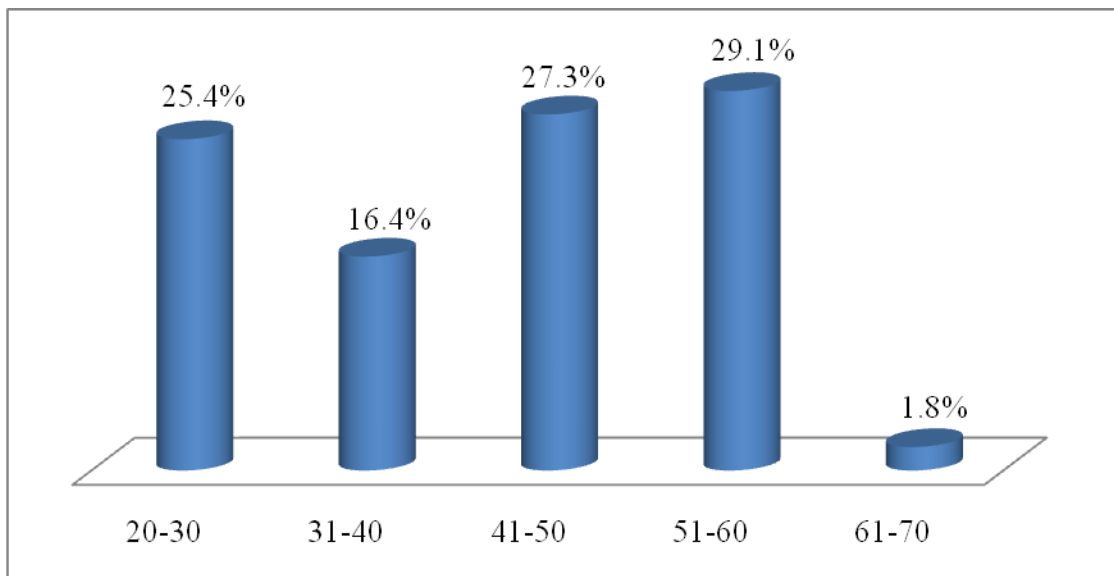


Fig- 4.2: Age group of the participants

Occupation

Among the 55 participants, 2 participants were agriculture, 1 participants were Factory/Garments worker, 5 participants were businessman, 22 participants were house wife, 25 participants were others occupation. In percentage, 3.60% participants were agriculture, 1.8% participants were Factory/Garments worker, 9.1% participants were businessman, 40.0% participants were house wife, 45.5% participants were others occupation. So it is shows that according to individual occupation housewives were mostly affected part. But cluster of profession can experienced neck pain and occupation has great relation with neck pain.

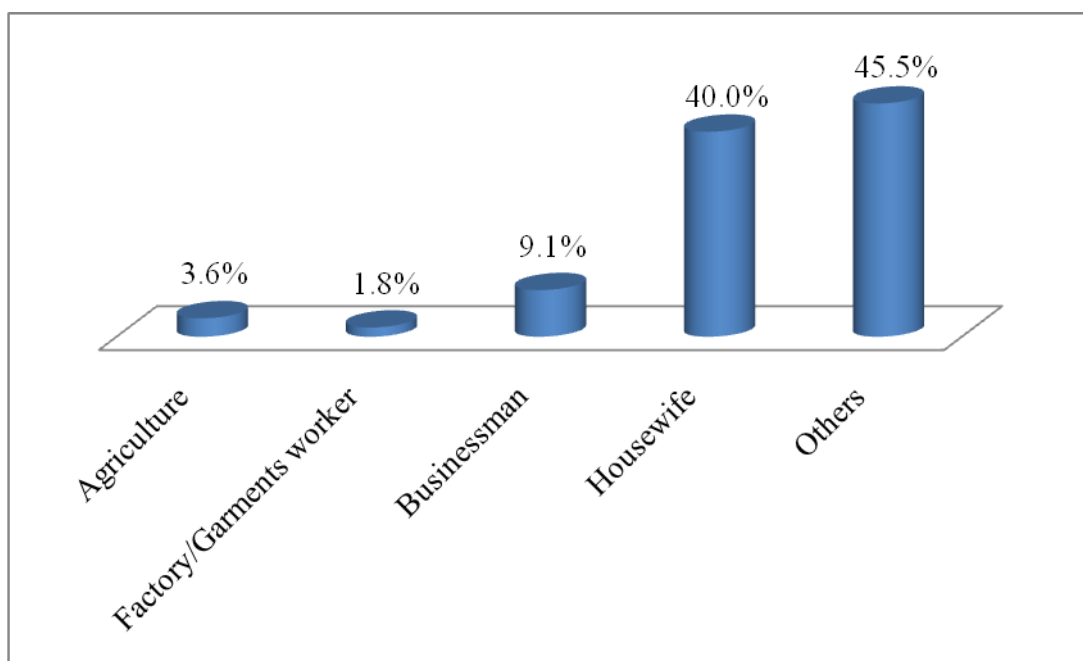


Figure- 4.3: Occupation of the participants

Residential area

Among the 55 participants, 28 participants were rural and 27 participants were urban. In percentage, urban participants were 49.1% and rural participants were 50.9%. So it is clear that among the participants there is a great amount of rural people commonly affected on neck pain.

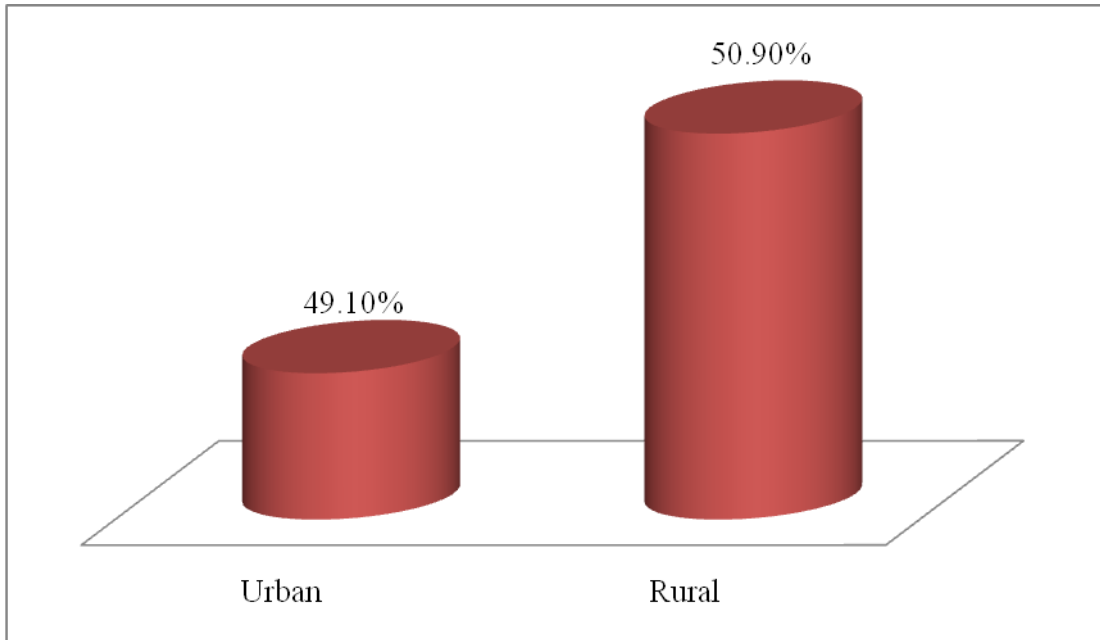


Figure- 4.4: Residential area of the participants

Marital Status

Among the 55 participants 48 participants were married, and 7 participants were unmarried. In percentage 87.3% participants were married and 12.7% participants were unmarried. So we have to understand that married person are mostly affected and they are mostly vulnerable for experiencing neck pain.

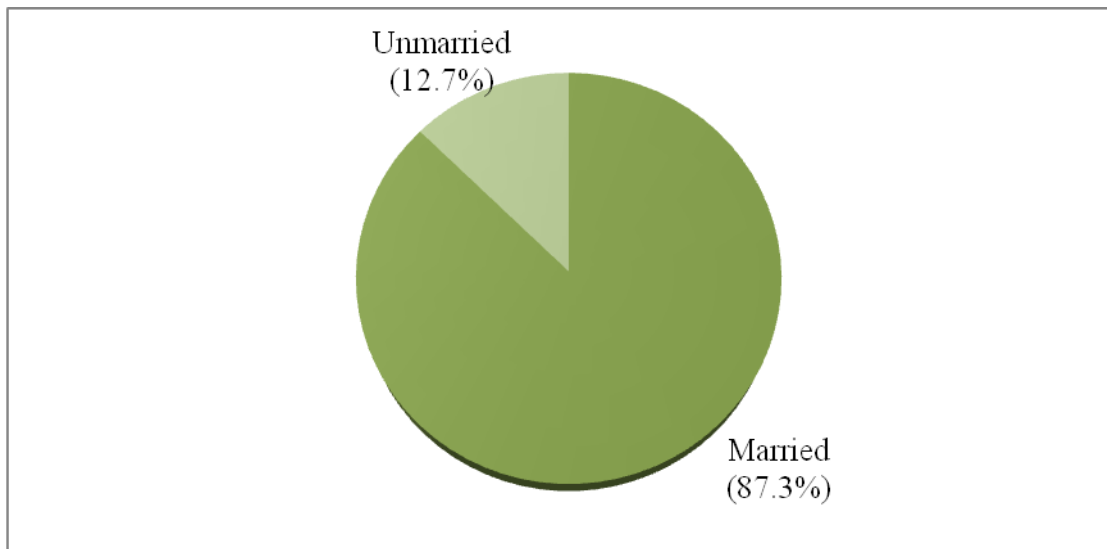


Figure- 4.5: Marital Status of the Participant

Gender

Among the 55 Participants, majority of the participant were had Female and the number were 30 and Male were 25. In percentage of the Female 54.5% and Male 45.5%. According to data view that maximum participants were female and there is a relationship with neck pain.

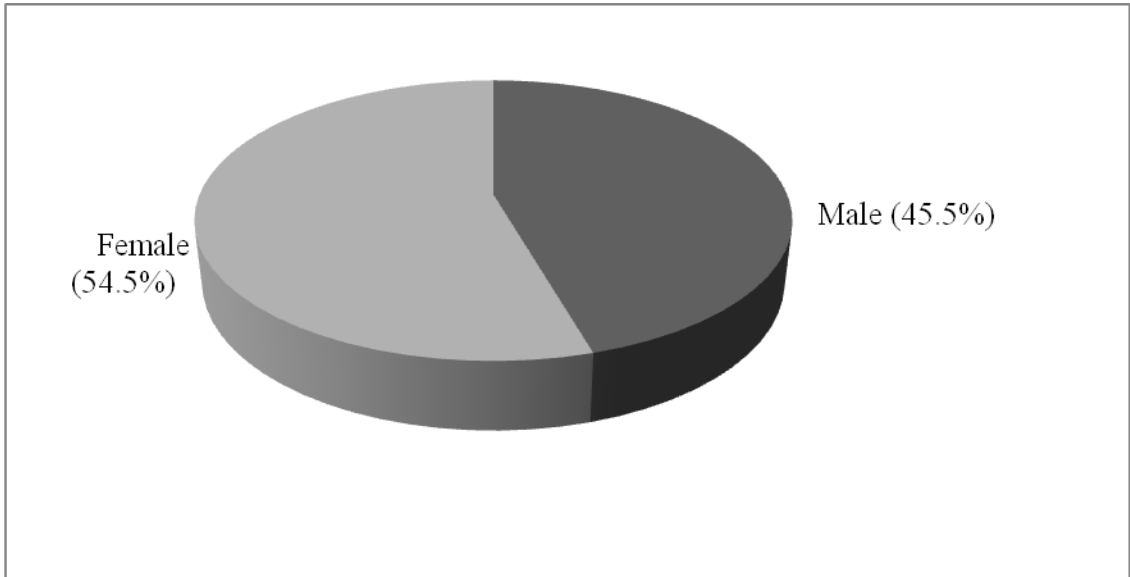


Figure -4.6: Gender of the Participants

Sleeping posture

Among the 55 participants 18 participants prefer Supine lying position during sleeping and 37 participants prefer side lying position during sleeping. In percentage, 32.7% participants prefer Supine lying position during sleeping and 67.3% participants prefer side lying position during sleeping. There are no participants who prefer prone lying position during sleeping including affected group and maximum participants were preferred to side lying during sleep and it was also a factor for occurring neck pain.

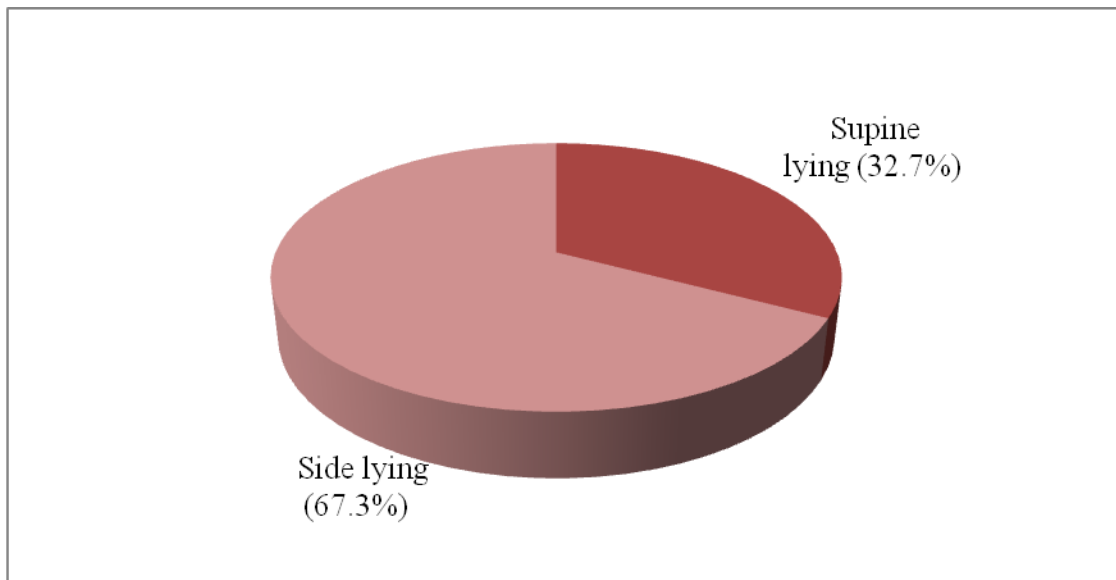


Figure -4.7: Sleeping posture of the participants

Pain behavior

Among the 55 participants 23 participants had experienced pain behavior as continuously and 32 participants had experienced intermittent pain. In percentage 41.8% participants hadexperienced pain as continuously and 58.2%participants had experienced intermittent pain. So according to data view it was concluded that most of the affected people who were experiencing neck pain that behavior was intermittent rather than continuous pain.

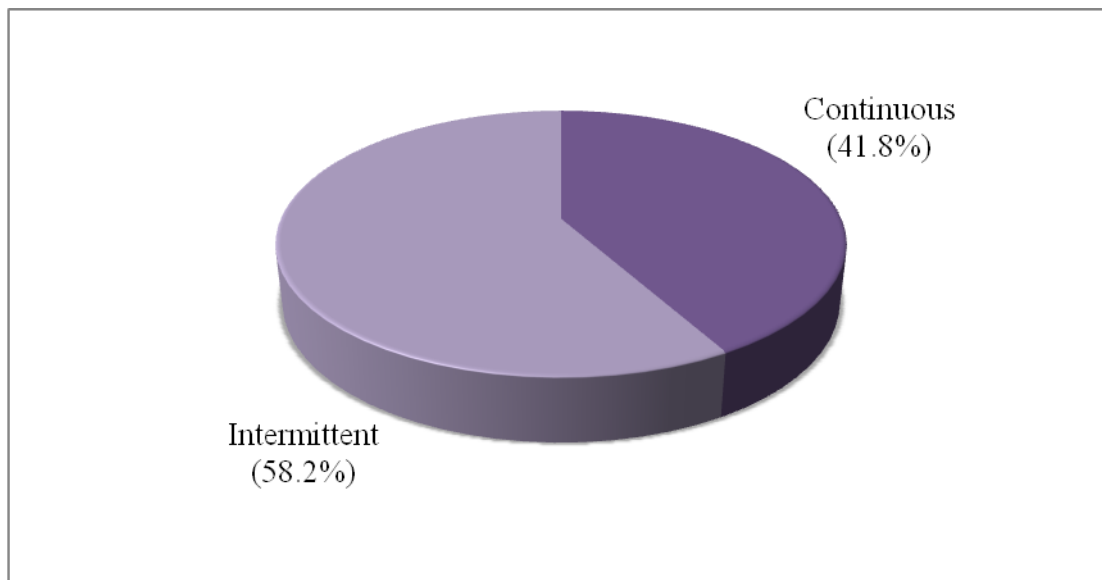


Figure -4.8: Pain behavior of the participants

Frequency of neck pain

Among the 55 participants 22 participants had experienced Constant pain, 18 participants had experienced Pain often and 15 participants had experienced pain occasionally. In percentage 40.0% participants had experienced Constant pain, 32.7% participants had experienced Pain often and 27.3% participants had experienced pain occasionally. So we can conclude as most of the participants had experienced constant pain.

Frequency of neck pain	Number (n)	Percentage (%)
Constant	22	40.0%
Often	18	32.7%
Occasional	15	27.3%
Total	55	100.0%

Table-4.2: Information about the Frequency of neck pain of the participants

Radiating pain

Among the 55 participants 32 participants had complained of radiating pain and rest of the part 23 participants not have any radiating pain. In percentage 58.2% participants had complained of radiating pain and other 41.8% participants not have any radiating pain. So we could come into conclusion that most of the neck pain patient whom were receiving treatment from CRP MS unit had mostly radiating pain.

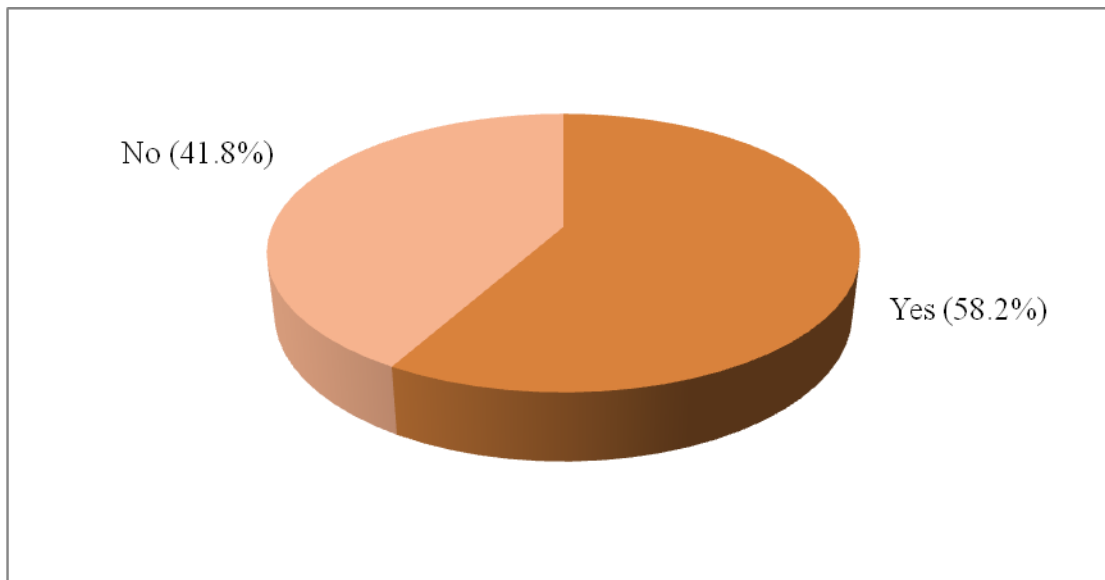


Figure -4.9: Radiating pain of the participants

Pain during movement

Among the 55 participants 51 participants had complained of neck pain during movement and rest of the part only 4 participants not have any feeling pain during movement. In percentage 92.7% participants had complained of neck pain during movement and other 7.3% participants not have any feeling pain during movement. So we could come into conclusion that most of the neck pain patient starting pain on neck during movement. So it has significant relationship with increasing neck pain.

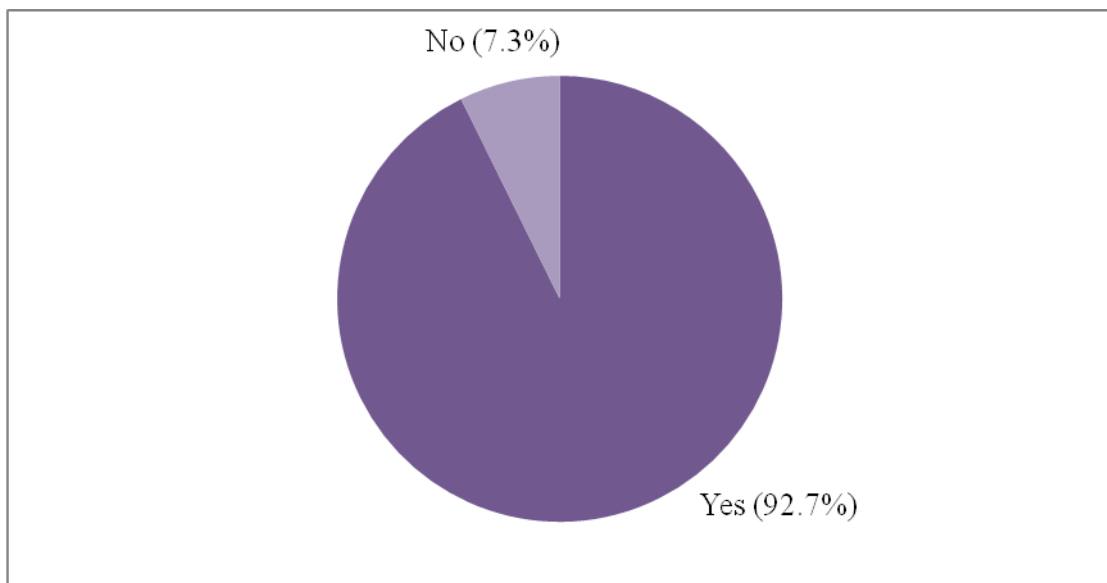


Figure -4.10: Pain during movement to the participants

Onset of neck pain

Among the 55 participants 50 participants had started neck pain from the Neck, 02 participants had started pain from the Arm and 03 participants had started neck pain from the Forearm. In percentage 90.9% participants had started neck pain from the Neck had, 3.6% participants had started pain from the Arm and 5.5% participants had started neck pain from the Forearm. Showing the result of this study the investigator could be come into conclusion that maximum neck pain started from Neck.

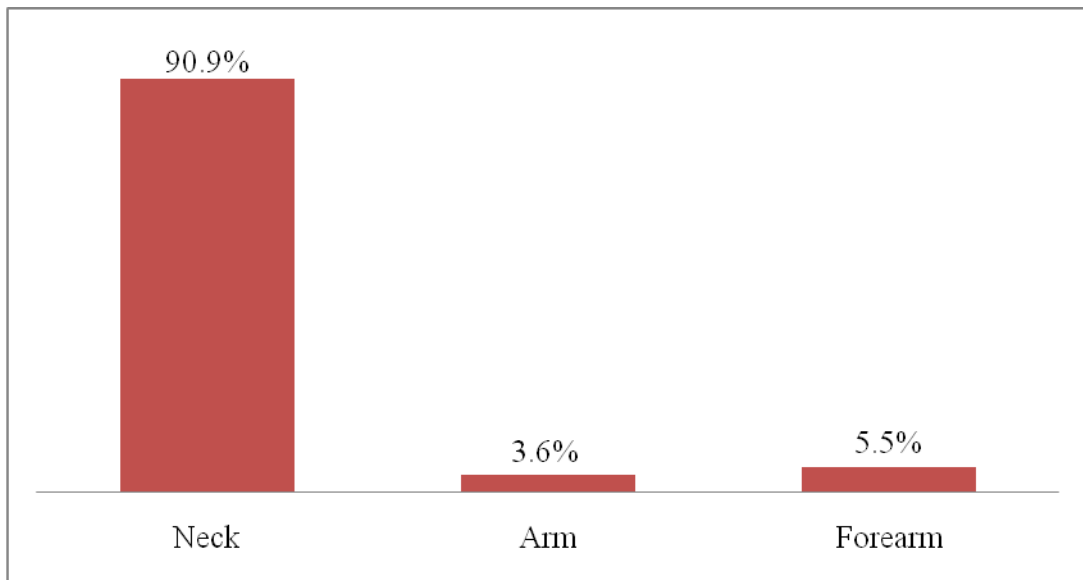


Figure -4.11: Onset of neck pain of the participants

Severity of neck pain

Among the 55 affected participants who were suffering from Neck pain, the severity of pain in neck was 7 participants had been affected in mild pain; Whereas 35 participants affected in moderate pain and 13 participants had affected severe neck pain. In percentage, 12.8% of the participants had mild pain (According to NPR scale the severity of pain range is between 1-4), 63.6% of the participants had moderate pain (According to NPR scale the severity of pain range is between 5-7) on neck and 23.6% of the participants had severe neck pain. (According to NPR scale the severity of pain range is between 8-10).

Severity of neck pain of the participants	Number (n)	Percentage (%)
Mild	7	12.8%
Moderate	35	63.6%
Severe	13	23.6%
Total	55	100.0%

Table-4.3: Information about the severity of neck pain of the participants

Period of sitting posture

Among the 55 participants 29 participants were sitting for most of the time. 15 participants sitting for sometimes and 11 participants sitting on often times. In percentage 52.7% participant sitting for most of the time. 27.3% participant sitting for sometimes and 20.0% participant sitting on often times. So we could come into conclusion that majority of the patient with neck pain were spending on sitting posture for most of the time.

Period of sitting posture	Number (n)	Percentage (%)
Most of the time	29	52.7%
Sometime	15	27.3%
Often	11	20.0%
Total	55	100.0%

Table-4.4: Information about period of sitting posture of the participants

Period of lying position

Among the 55 participants 7 participants were keeping lying position for most of the time. 36 participants were keeping lying position for sometimes and 11 participants keeping in lying position on often times and only 1 participants were never kept on lying position. In percentage 12.7% participants were keeping in lying position for most of the time. 65.5% participants were keeping in lying position for sometimes and 20.0% participants keeping lying position on often times & only 1.80% participants were never kept on lying position. So we could come into conclusion that majority of the patient with neck pain kept on lying position for sometimes.

Period of lying position	Number (n)	Percentage (%)
Most of the time	7	12.7%
Sometime	36	65.5%
Often	11	20.0%
Never	1	1.8%
Total	55	100.0%

Table-4.5: Information about period of lying position of the participants

Pain disturbing sleep

Among the 55 participants 23 participants had complained of disturbing sleep due to neck pain and rest of the part 32 participants not have any complain of disturbing sleep due to neck pain. In percentage 41.8% participants had complained of disturbing sleep due to neck pain and other 58.2% participants not have any complain of disturbing sleep due to neck pain. So we could come into conclusion that majority of the patient with neck pain, not have any experience of disturbing sleep due to pain.

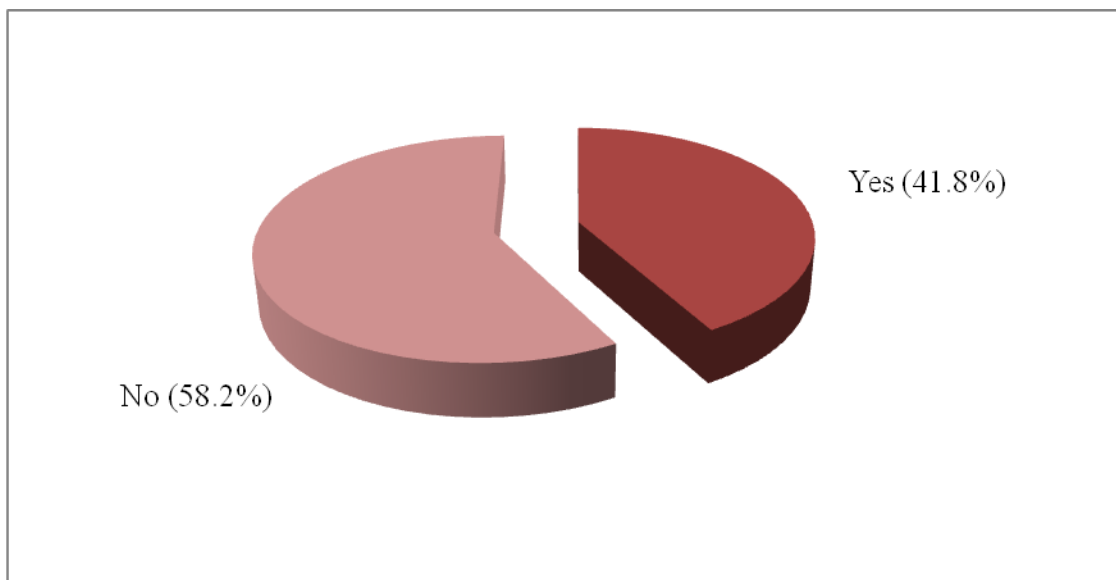


Figure -4.12: Pain disturbing sleep of the participants

Previous episode of neck pain

Among the 55 participants 22 participants had no previous history of neck pain.18 participants had previous episode of neck pain at 1-2 times,13participants had previous record of neck pain at 3-5 times and only 2participants had previous history of neck pain more than 5 times . In percentage 40.0% participants hadno previous history of neck pain. 32.7% participantshad previous episode of neck pain at 1-2 times,23.6%participants had previous record of neck pain at 3-5 times and only 3.7%participants had previous history of neck pain more than 5 times . So we could come into conclusion that majority of the patient with neck pain,not have any history of neck pain.

Previous episode of neck pain	Number (n)	Percentage (%)
None	22	40.0%
1-2	18	32.7%
3-5	13	23.6%
More than 5	02	3.7%
Total	55	100.0%

Table- 4.6: Information about previous episode of neck pain of the participants

The investigator used a cross sectional study to find out the characteristics of neck pain among the patient attended at the Centre for the rehabilitation of the paralyzed (CRP). A variety of characteristics had been found from the selected samples whether it is acute, intermittent and chronic type of neck pain by a categorized variable outcome that are socio demographic, postural & work related and life style related. Characteristics refer to those features or factors that responsible for causing neck pain.

It was a prospective study. In this study it was found that among the sufferer group the severity of neck pain was 12.7% of the participants had mild pain (According to NPR scale the severity of pain range is between 1-4), 63.6% of the participants had moderate pain (According to NPR scale the severity of pain range is between 5-7) on neck and 23.6% of the participants had severe neck pain. (According to NPR scale the severity of pain range is between 8-10). That results indicate maximum participants had moderate pain. Neck pain severity in Canada as like mild pain 28.9%, moderate pain was 54.4% and severe pain was 16.7%. So it was shown that there is also a maximum amount of participants had been suffered from moderate neck pain (Schopflocher et al., 2011).

According to this study, It was also found that among all the participants of neck pain 87.3% participants were married and 12.7% participants were unmarried. That is highlights that understand that married person are mostly affected and they are mostly vulnerable for experiencing neck pain. According to a study conducted in University Kebangsaan Malaysia Medical Centre, Most of them were married and that is 72.3% when compared to 27.7% were single. So the investigator could said that the literature support the result of this study (Mustafa & Sutan, 2012).

Here the investigator found that Age group of the participants among the affected people. Out of the participant the mean age of the participants was 42.73 years. The range is 48 with minimum age 22 years and maximum 70 years. The number of ≤ 50 years were 38 (69.1%) and > 50 were 17 (30.9%). Maximum amount of participants among the affected people in between the age of 30-60 years. If we look up to the Netherlands, They reported that there is also occurring neck pain commonly and the

age range is 40-60 years. So we can say that International literature support the result of these study (Bot et al., 2005).

In this study it was found that among the sufferer group, majority of the participant were had Female and the number were 30 and Male were 25. In percentage of the Female 54.5% and Male 45.5%. In United States, there is found that 9.5% of the men and 13.5% of the women were highly affected on neck pain. All the literature said that Female are highly risk for experiencing neck pain rather than male. So it is clear that literature strongly agree with these results (Makela et al., 1991).

This study also showed that the participants having with neck pain Among the 55 participants 51 participants had complained of neck pain during movement and rest of the part only 4 participants not have any feeling pain during movement. In percentage 92.70% participants had complained of neck pain during movement and other 7.30% participants not have any feeling pain during movement. Bending and turning create much pain during movement of neck pain. In United kingdom, it had been shown that there were also creating pain during movement 83% prevalence of neck pain in forwards bending And in turning it is 61.67%. Finally literature prove that during movement pain is more common rather than rest of the neck and it is more common in bending and turning. Again we can see that literature support these result (Gemmell & Dunford, 2007).

In this study it was showed that Among the 55 participants 32 participants had complained of radiating pain and rest of the part 23 participants not have any radiating pain. In percentage 58.20% participants had complained of radiating pain and other 41.80% participants not have any radiating pain. So we could come into conclusion that most of the neck pain patient whom were receiving treatment from CRP MS unit had mostly radiating pain. In Finland, there also shows the literature that there had radiating neck pain. The risk of radiating neck pain was higher among the women than men. Body mass index had an effect on radiating neck pain. Mental stress had a strong effect on radiating neck pain. As a whole these study also reviewed that other literature support these study very warmly (Viikari-Juntura et al., 2001).

Among the participants in this study it had been shown that general status of the affected group as 34.5% participants had Good health, 61.8% participant's Fair health status and 3.60% participant had Poor health status. From these result we can said that maximum affected participants having fair health status. If we concentrate in outside of our country, in South Africa to determined the health status of the participants they showed that 47.7% had very good health status, 14.0% participants had good health status whereas 34.5% had fair health status and only 1% had poor health status. At last they also demonstrated as that significant amount of participants had fair health status (Igumbor et al., 2011).

In these study there were also shown that among the affected group of people 49.1% of the participants with neck pain were coming from urban areas whereas 50.9% of the participants were coming from rural areas. In high income countries it had been shown that about 20.7% of the participants with neck pain were coming from urban areas and 17.0% of the participants were from rural areas. In rich countries there were great percentage of having neck pain in urban areas but in developing countries like Bangladesh it is more common in rural areas (Hoy et al., 2010).

Among the affected group of people In these study it also had been shown that there were previous episode of injury for occurring neck pain. Sometime it will appear by accident, injury or by any history of surgery on the neck. 40.0% participants had no previous history of neck pain. 32.70% participants had previous episode of neck pain at 1-2 times, 23.60% participants had previous record of neck pain at 3-5 times and only 3.70% participants had previous history of neck pain more than 5 times. In Germany University of Gottingen, concentrate a study where we found that 20% of the participants experienced neck pin by accidental injury, 2% had the surgical intervention (Blozik et al., 2011).

CHAPTER -VI: CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

It is important to develop research based evidence of Physiotherapy practice in this area. Physiotherapist's practice which is evidence based in all aspects of health care. There are few studies about neck pain. These cannot cover all aspect of vast area. It is important to continue study for the next generation of the physiotherapy members regarding this area. Neck pain has great impact causing short term physical disability might be long term in some cases depending on some criteria and give rise to huge costs for the society. It is the second most serious problem in our society. Characteristics of neck pain including severity of neck pain, frequency of pain, behavior of pain and also socio demographic habit are the significant item which is largely allow to the participants with female rather than male and also specially for housewives. Among the affected group 54.50% were female. Among those female participants 40.0% were housewives. There is having great relationship between the neck pain and working environment. Severity of neck pain of those participants as there was more common of moderate pain rather than mild pain or severe pain. Moderate pain was almost 63.60%. According to the participants view some socio-demographic characteristics such as age, living area, marital status and working environments, prolong bending posture, as well as sleeping posture had a positive effect among the participants with neck pain.

6.2 Recommendations

The aim of the study was to find out the Characteristics of neck pain among the patient attending at musculoskeletal unit, CRP. Though the study had some limitations but investigator identified some further step that might be taken for the better accomplishment of further research. The main recommendations would be as follow:

- The duration of the study was short, so in future wider time would be taken for conducting the study.
- Investigator use only 55 participants as the sample of this study, in future the sample size would be more.
- The ratio of rural and urban participants were not equal, in case of further the equality of the rural and urban participant should be maintained for the accuracy of the result.
- In this study, the investigator took the participants only from the musculoskeletal unit, CRP as a sample for the study. So for further study investigator strongly recommended to include the neck pain patient from all over the Bangladesh to ensure the generalizability of this study.
- The random sampling technique rather than the convenient would be chosen in further in order to enabling the power of generalization the results.

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Appendix

Verbal Consent Statement

(Please read out to the participants)

Assalamualaikum/Namasker, my name is MD. NazmulHasanPradhan; I am conducting this study for a B.sc-in-Physiotherapy project study dissertation titled “Characteristic of neck pain among the patient attending in Musculoskeletal unit, CRP.” under Bangladesh Health Professions Institute (BHPI), University of Dhaka. I would like to know about some personal and other related information regarding Neck pain. You will perform some tasks which are mention in this form. This will take approximately 20-30 minutes.

I would like to inform you that this is a purely academic study and will not be used for any other purpose. The researcher is not directly related with this Musculoskeletal department, so your participation in the research will have no impact on your present or future jobs in this area. All information provided by you will be continue the services as confidential and in the event of any report or publication it will be ensured that the source of information remains anonymous and also all information will be destroyed after completion of the study. Your participation in this study is voluntary and you may withdraw yourself at any time during this study without any negative consequences. You also have the right not to answer a particular question that you don't like or do not want to answer during interview.

If you have any query about the study or your right as a participant, you may contact with me, researcher and/or Md. Sohrab Hossain, Head of the Programs in CRP, Savar, Dhaka.

Do you have any questions before I start?

So, may I have your consent to proceed with the interview or work?

Yes

No

Signature of the Participant _____

Signature of the Interviewer _____

**Title: Characteristics of Neck pain among the patient attending in
Musculoskeletal unit, CRP**

Questionnaire

Sociodemographic:

QN	Questions	Responses
1.	Name:	
2.	Age:year
3.	Gender:	1=Male 2=Female
4.	Address and Contact number:	Village/house no:..... Post off:..... Thana:..... District:..... Phone no:.....
5.	Marital Status:	1=Married 2=Unmarried..... 3=Divorced.....
6.	What is Your Religion	1=Islam 2=Hindu 3=Others
7.	Your Residential Area	1=Urban 2=Rural
8.	What is Your Education	1=Illiterate 2=Primary level 3=Secondary level 4=Higher secondary level 5=Graduation or above 6=Other (specify):.....

9.	What is Your Occupation	1=Agriculture 2=Factory/garments worker 3=Businessman 4=Day laborer 5=Unemployed 6=House wife 7=Other (specify):.....
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Neck pain related:

1.	Does Your Pain Start with movement?	1=Yes 2=No
2.	If Yes, In Which Position aggravates the Neck Pain?	1=Bending 2=Sitting 3=Turning 4=Lying 5=Others
3.	Have you feel any pain at rest?	1=Yes 2=No
4.	Pain at onset	1=Neck 2=Arm 3=Forearm
5.	Your Frequency of pain	1=Constantly 2=Often 3=Occasionally
6.	Your Pain Behavior	1=Continuous 2=Intermitted 3=Null
7.	In Which position you feel better?	1=Bending 2=Sitting 3=Turning 4=Lying 5=Others

8.	Severity of neck pain ?	1=Mild 2=Moderate 3=Severe 4=Nil
9.	Is there any radiation of pain ?	1=Yes 2=No
10.	If yes, Then where it radiates ?	1=Arm 2=Forearm 3=Hand
11.	Sleeping posture	1=Supine lying 2=Side lying 3=Prone lying
12.	Sleeping mattress	1=Firm/Normal mattress 2=Soft/Cushioned mattress 3=Wooden/Hard bed
13.	How many pillow you have used in your bed ?	1=One 2=Two 3=More than 2
14.	Is your pain disturbing in your sleep ?	1=Yes 2=No
15.	Previous episode of neck pain ?	1=None 2=1-2 3=3-5 4=More than 5
16.	Incident of neck injury ?	1=Yes 2=No
17.	If yes, types of injury ?	1=Direct trauma 2=Accident 3=Others
18.	Period of sitting posture	1=Most of the time/always 2=Often 3=Sometimes 4=Never

19.	Period of lying position	1=Most of the time/always 2=Often 3=Sometimes 4=Never
20.	Postural status at the work place	1=Sitting 2=Bending 3=Standing 4=Squatting 5=Others
21.	General health condition	1=Good 2=Fair 3=Poor
22.	Any stiffness in your neck?	1=Yes 2=No

Permission letter

Date: 01 April, 2013

To

Head of the Department

Department of Physiotherapy

Center for the Rehabilitation of the Paralyzed (CRP),

Savar, Dhaka-1343.

Subject: Application for permission of data collection at musculoskeletal unit.

Sir,

I respectfully state that I am Md Nazmul Hasan Pradhan student of fourth year B. Sc. in Physiotherapy at Bangladesh Health Professions Institute (BHPI). In to do fourth year course curriculum we have do a research project. I have chosen a research title that is "Characteristics of neck pain among the patient attending in musculoskeletal unit, CRP". For this reason, I need permission for collect data from the CRP Musculoskeletal unit at Savar.

Therefore, I pray and hope that you would be kind enough to grant my application and give me the permission for collect data from CRP, Musculoskeletal unit.

Yours faithfully

Md. Nazmul Hasan Pradhan

4th year B.Sc. in Physiotherapy

Session: 2007-2008

BHPI, CRP, Savar, Dhaka-1343