BEHAVIOUR OF PAIN AMONG THE LOW BACK PAIN PATIENTS ATTENDED AT CRP

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

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We the under sign 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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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 from my supervisor.

Signature: **Date:**

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Abbreviations

ADL: Activity of Daily Living

BHPI: Bangladesh Health Professions Institute

BMRC: Bangladesh Medical and Research Council

CRP: Center for the Rehabilitation of the Paralyzed

HSC: Higher Secondary School Certificate

LBP: Low Back Pain

NSAID: Non Steroidal Anti Inflammatory Drug.

SPSS: Statistical Package of Social Science

SSC: Secondary School Certificate

TENS: Tanscuteneous Electrical Nerve Stimulator

WHO: World Health Organization

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Abstract

Purpose: The purpose of the study was to explore the behaviour pain among the low back pain. *Objective:* To identify the socio-demography information, pain nature, aggravating and relives factors, response of medication and previous intervention before receiving physiotherapy treatment. *Methodology:* A cross sectional study was conducted with a structured and close ended interviewer administered questionnaire to collect information from 130 low back pain patients in respects through convenience sampling technique. Data was numerically coded and captured in Microsoft excel, using an SPSS 16.0 version software program. *Results:* This study was found that, this survey showed female participants about 60% and 40% was male. Females are more affected and 46.2% were house wives. The vulnerable age range is 30 to 49 years for low back pain. Most of the patients were less educated about primary level were 34%, in this study shows that the 78% patients had intermittent and moderate pain. Pain is aggravated by flexion movement 97%, relief 91% low back pain by taking rest, about 64% patients have gradual symptom, pain radiates 43.8% are leg, for which 89.2% people were affected on ADL due to pain, medication was response in 95% and 81% patients were take previous intervention. 44.6% were goes to general practitionar and 42.3% were partially effective. *Conclusion:* This result of the current study would help to know the nature of pain, severity of pain, relevant symptom of pain for low back pain. It is seriously affecting the quality of their social and working lives. Very few were managed by pain specialists and nearly half received inadequate pain management.

Key word: Pain, Behaviour of pain, Low back pain patients.

CHAPTER-I INTRODUCTION

1.1 Background

Pain is an unpleasant sensory and emotional state or feeling or discomfort associated with actual or potential tissue damage that felt in the mind which is arising in a part of the body. In other words, it is a subjective sensation and defense mechanism designed to make the subject protect an injured part from the further damage. More than 98% of patient have identifiable pattern of pain that are diagnosed as uncomplicated pain problem in back. The mechanical pain usually response to movement or position and typically it is intermittent in nature (Hall et al, 1994).

Many studies shows that the high frequency of back complaints in society and 70–85% of all people have back pain at some time in life. In the USA, back pain is the most common cause of the limitation in younger people than 45 years, and second most important reason is going to the physician, the fifth-ranking cause of admission to hospital, and the third causes of surgical procedures. Each year about 2% of the US workforce is compensated for back injuries (Gunnar & Andersson, 1999). Low back pain is the most common health problem in South Africa and its prevalence rate is 35.8% and a lifetime prevalence rate is 63.9%. Low back pain was also proclaimed as the most common disabling disease in the UK, especially commonly in working aged people (Naude, 2008).

Among two thirds of the adults low back pain is a major health problem (Janwantanakul et al, 2011). A European study also shows that, 66% patient suffered by moderate pain, 34% suffered by severe pain (Breivik et al, 2006). Low back pain is one of the most common symptoms experienced by most of the people throughout the world (Kerssens et al, 1999). It is estimated that 70 to 80% of the world's population has been suffered at least one group of events of back pain in their lifetime (Nourbakhsh & Arab, 2002). This condition may decrease the quality of life of individuals and also become worse in daily living activity. Usually the happening of back pain is simply occur between ages 25 and 50 (Jackson et al, 1998). In a chainis study claimed that the 1-year prevalence of LBP was 64% (Barrero et al, 2006).

Another research in UK shows that 75% people suffered with low back pain in every year (Webb et al, 2003).

Low back pain is a very common problem with ubiquitous distribution. About 85% of the populations are affected by this symptom at sometime in their life (Ebnezar, 2003). There are 8 out of 10 people will experience back pain in their full life (Carol et al, 2002). In every year low back pain normally affects around one third of the adult population in UK. So, about 20% (1 in 15 of the population) patient will consult with GP for their back pain. In the UK every year 2.6 million people were take advice about back pain related information from their GP (Macfarlane et al, 2006). Approximately, for the adult population attack of chronic back pain include; 11% for disabling back pain in the last three months, 23% for low back pain lasting more than three months and, 18% for at least moderately troublesome pain in the previous month (Andersson et al, 1999).

1.2 Rationale

Low back pain is a common condition comprising a major health problem worldwide. It is eventually affect almost everyone in life, men and women equally. The annual incidence of back pain is estimated between 10%-15%. Low back pain is a self limiting condition and affects the vast majority of population (Blom et al, 2002). Low back pain is a common disorder. Most of the people experienced low back pain in any time of their life span. A chronic pain hampers the quality of life that causes physical limitation and psychological distress, sometimes may develop disability and (Savigny et al, 2009).

It is the most common cause of pain at lumber that causes joint dysfunction, derangement muscle spasm, immobility etc. It is also the cause of activity limitation thus decrease the quality of life. For this region, researcher interested to conduct this research to find out new things. If the behavior of LBP is find out, it is very helpful to information about the nature of pain of LBP, types of pain of LBP, duration of pain of LBP, pain associated symptoms of LBP, severity of pain of LBP, aggravating factors and relieving factors of LBP, clinical representation of LBP, response of the medication and response of previous intervention before receiving physiotherapy treatment. As a Physiotherapist it is help to diagnose low back pain easily and give details information to the patient about LBP so that people can modify their life style regarding LBP and know the percentage of acute and chronic LBP. And also know which type of intervention patient receive before physiotherapy treatment and their response. So physiotherapist can provide better treatment as well as essential advice to the patients. As a health professional it improves our knowledge. 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 is the behavior of pain among the low back pain patient?

1.4 Aim

The aim of the research is to know the behavior of pain among low back patient.

1.5 Objectives

1.5.1 General objective

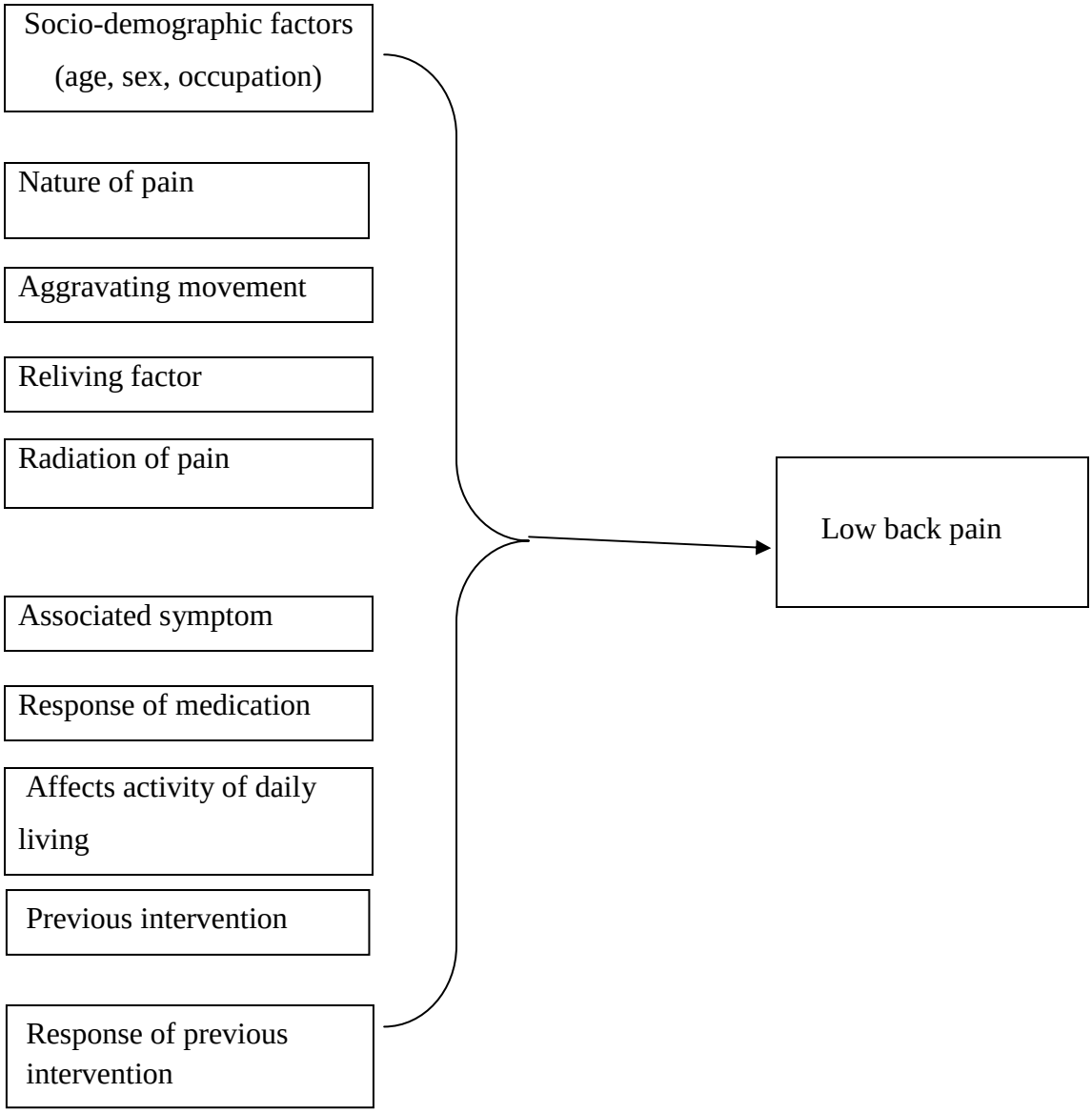
To determine the behavior of pain among the low back pain patient.

1.5.2 Specific objectives

- To explore the socio-demographic characteristics of low back pain.
- To find out the nature of pain.
- To determine the aggravating movement and relieving factors of pain.
- To get information the response of medication for the patients with low back pain.
- To know various previous intervention before receiving physiotherapy treatment.

1.6 Conceptual Framework

Dependent variable **Independent variable**



1.7 Operational definition

Pain: Feeling of suffering or discomfort in a particular part of the body.

Low back pain: Low back pain refers to pain felt in lower back. It may also have back stiffness, decrease movement of lower back and difficulty standing straight.

Socio-demography: A study of both qualitative and quantitative aspects of human populations that broken down by age, sex, etc.

Area: A rather small part of a geographical unit.

Activity of daily living: Task that enable individual to meet basic needs in style.

Symptom: Normal function or feeling which is noticed by a patient indicating the presence of disease or abnormally.

CHAPTER-II LITERATURE REVIEW

The International Association for the Study of Pain (IASP) defines pain as "an unpleasant sensory and emotional experience which we primarily associate with tissue damage or describe in terms of such damage, or both." This definition recognizes that pain is a perception and not a sensation. Pain is usually described as severe, sharp and having an unpleasant nagging quality with sensory changes such as pins and needles or numbness (Corrigan & Maitland, 1983). Pain may be perceived via any pain sensitive nerve endings known as nociceptive nerve ending that are present throughout the body and stimulation of these nociceptive nerve endings will result in an individual perceiving pain (Brukner & Khan, 1993).

Pain is very frequent problem in any medical practice in the world including our country rather associated with advanced illness or acute or chronic conditions. It is also a physical symptom that patients and families fear most (Emanuel et al, 1999). Chronic pain is the most common condition in primary care, and it is very most costly. In general population 5-15% people are suffered from severe chronic pain. Another study found that 38% patient was reporting and received treatment of chronic pain in primary care, where the acute pain was not assessed (Smith et al, 2004).

The pain is a simple sensory response to nociceptive input from injured site. In the Pain Gate Control Theory, pain is divided into two component those are- experience of sensory, affective (emotional), and cognitive (meaning) part of the central nervous system (Feuerstein & Beattio, 1995). The most cases of musculoskeletal injury the nociceptive nerve endings are stimulated one or more structures (Brukner & Khan, 1993). In pain pathophysiology it may be acute or chronic. Acute pain is very easy to identify with their event or condition and its resolution is dependent within a period of days or weeks. Chronic pain may or may not be related to an easily identified pathophysiological phenomenon and may be present for an indeterminate period (Emanuel et al, 1999).

Low back pain is common problem in our country and it is very costly health problem (Wand & Hanter, 2009). One study found that 10% people of low back pain suffered

from chronic pain accounted for about 79% of the costs which would make this group of chronic patients. Comparatively another study found that 5% of chronic back pain cases counted for about 85% of all medical costs for this condition (Frymoyer & Cats-Baril, 1991). Chronic pain is expensive and it is a classical example of a biopsychosocial disorder (Wand & Hanter, 2009).

Low back pain is the important and known musculoskeletal disorder in developing and undeveloping nations. It also a common medical problem and 50-70% people will have to chance developing low back pain in their life time with prevalence is 18% (Panjabi, 2003). In African continent the point prevalence low back pain in adults was 32%, where the one year prevalence was 50%, and the lifetime prevalence was 62% (Naude, 2008). The frequency of low back pain in the United States almost 7 million and people were off work because of it. In the UK show that 1.1 million people with fifteen years and over consulting with the physician common in every year due to low back pain (McKenzie, 1981). LBP point prevalence was estimated that 6.8% North America, 12% Sweden, 13.7% Denmark, 14% United Kingdom, 28.4% Canada and 33% Belgium. Australia the prevalence of LBP is 25.5% (Kent & Keating, 2005).

The lifetime prevalence of low back pain is reported as over 70% in industrialized countries. One-year prevalence is 15% to 45% where adult incidence rate is 5% per year. Peak prevalence occurs ages between 35 and 55 years (Andersson, 1999). An epidemiology community health study stated that the most affecting age group was 30 to 39 aged people where men were 39.9% and women were 38.9% (Ozguler et al, 2000). A Swedish studies showed that, among 41% of the participants reported having low back pain and of these 55% were women and 45% were men (Dijken et al, 2008). In the US the lifetime prevalence of LBP is 60% to 90%. The measurement of life-time prevalence of low back pain varies between 49% and 90% in western countries and the lifetime prevalence of LBP in western countries to be between 25% and 30%. The yearly prevalence of LBP in western countries varies between 30% and 40% and the point prevalence varies between 12% and 30%.The LBP world-wide prevalence time is between 15% and 30% (Naidoo, 2009).

Low back pain was defined by Kravitz and Andrews (2007) as pain in the lumbosacral area of the spine encompassing the distance from the first lumbar

vertebra to the first sacral vertebra. This definition covers a small area of the lower back and might exclude a vast number of cases that may present symptoms higher or lower than the area specified (Kravitz & Andrews, 2007). Low back pain (LBP) is posterior trunk pain between the ribcage and the gluteal folds. It also includes lower extremity pain that results from low back disorder (sciatica/radiating low back pain), whether there is trunk pain or not. Sciatica is radiating, lowers extremity pain and may not be associated with back pain. Sciatica should be clearly distinguished from axial low back pain. Low back pain is a symptom and not a disease. The low back pain is considered to include dorsal pain located anywhere between the twelve thoracic vertebrae and lower buttock up to glutial fold or anus (Sarker & Rahman, 2011).

Acute low back pain is usually defined as the duration of an episode of low back pain persisting for less than 6 weeks; sub-acute low back pain persists between 6 and 12 weeks; chronic low back pain as low back pain persisting for 12 weeks or more. In this guideline, recommendations are related to both acute and sub-acute low back pain unless specifically stated otherwise. Recurrent low back pain is a current bout of pain of less than three months, having experienced previous attacks (Tulder et al, 2004). Chronic low back pain is a continuous pain that persists for more than three months it may cause pain and disability that persists for more than three months (Naidoo, 2009).

Establishing the source of pain is important to specific interventions for low back pain is to be developed. Sources of chronic low back pain confirmed by controlled studies include the zygapophysial joints, the intervertebral discs and the sacro-iliac joints. Both local and referred pain have different patterns of symptom. Patterns of local and referred pain have also been recorded including injection of 6% saline into the lumbar interspinous ligaments and interspinous spaces. The lumbar back muscles are very important source of pain. The characteristic of referred pain pattern is varied from each to other. Muscles are sometimes creating the most valuable signal source which is informed and identify the muscular origin of pain. Each lumbar muscle therefore has a specific pattern of local and referred pain that may be used for diagnosis (Cornwall et al, 2006).

Robin McKenzie has described mechanical LBP has three relatively simple categories as follow as postural, dysfunction and derangement syndrome. Few patients feel pain

or discomfort and different sign-symptoms related to pain that suggest a more ominous source of pain also suggest which types of treatment are applied. McKenzie has categorized mechanical back pain into seven possible derangements based upon the clinical presentation (McKenzie, 1981). The Canadian back institute based initial treatment direction on five distinct pattern of pain. In this system it is recognized that the dominant pattern determines the appropriate therapy (Hall et al, 1994).

The first four patterns are physical; the fifth is a pattern of abnormal, pain-focused behavior. Two of the physical patterns are back-dominant which means regardless on any peripheral referral, pain is most severe in the back and on buttock. Pattern I and II and their variants account for 90% of pattern recognition. The remaining 10%, pattern III and IV have leg dominant pain. Leg dominant pain with signs of root irritation and or a conduction deficit is indicative of disc protrusion with nerve root compromise (Hall, 1992).

Pattern-I: is a pain distribution felt most significantly in the back and/or buttocks. The symptoms are aggravated by lumber flexion and intensity with repeated forward bending on a sustained forward flexion posture. There can be pain radiation to the leg and ankle. Pattern II: the dominant pain in pattern is again in the back and on buttock. Leg symptoms are common but secondary complaint aggravated by the lumber extension. Pattern III: Leg dominant pain associated with back pain is unusual. The leg symptoms are clearly pre dominant. Pattern IV: Pain or discomfort felt primarily in the legs is also the mark of pattern IV. Symptoms are produced with activity, classically by walking and occur within minutes. They are relieved by rest and subside as rapidly as they appear. Pattern V: Reflects an abnormal pattern of behavior (Hall et al, 1994).

The causes of low back pain can be occurred due to various pathological conditions such as lumbar disc herniations, spondylolisthesis, sciatica, spondylosis etc. trauma is also cause of LBP. It has been found that a large number of patients present with non-specific low back pain, that is pain due to unknown origin. One research reported that 85% of the populations are classified as having non-specific low back pain. This was mainly due to inability to reach a definitive diagnosis via radiological methods. Various authors agree that the cause of chronic low back pain remains unknown or

non-specific in origin there is underlying pathophysiological or anatomical defect can be attributed to the pain (Naidoo, 2009). Clinical instability is an important cause of low back pain (Panjabi, 2003).

The predisposing factors for low back pain and its recurrences are mostly related to position and the short and long term consequences of maintaining them. Movement and activity may precipitate low back pain and therefore contribute to its incidence and recurrence. It is often the unexpected and unguarded 'movement', that causes a sudden episode of low back pain. Lifting produces a strain, which is often a precipitation factor, especially when heavy, prolongs and repeated 'lifting', is involved (McKenzie, 1981). Low back pain is the most common disabling musculoskeletal symptoms and there is little understanding of regarding risk factors of low back pain. The most common risk factors for LBP are heavy physical workload including lifting, awkward posture and body vibration. Life style factors including smoking behavior, lack of physical exercise and short sleep hours are also increases LBP. Working period less than 8 hours also risk population of LBP and common ages of affected over 40 years (Tomita et al, 2010).

Low back pain is associated with physical activity at work and leisure time, certain lifestyle factors and demographic characteristics (Dijken et al, 2008). Mechanical low back pain starts suddenly and it may be associated with occupations that involved heavy weight lifting, bending or twisting forces (Kumar & Clark, 2002) and heavy physical work, static work posture, pushing and pulling (Cox, 1999). The severity of low back pain sometimes depends on the gender. Both male and female may have to chance for developing low back pain. Ratio found that low back pain is more common 6% of female within 4% of male (Ozguler et al, 2000). Female have equal generalized low back pain complains when compared with males (Malanga et al, 2003).

Maximum people are experience acute low back pain in their whole life. The first attack of low back pain usually occurs between 20 and 40 years of age. For an adult acute low back pain may be the first reason to seek medical care. Pain may be moderate to severe, debilitating and causing anxiety. However, 31 percent low back pain will not fully recover within six months but it will improve. Recurrent back pain

occurs in 25 to 62 percent of patients within one to two years, when 33 percent is moderate and 15 percent is severe pain (Brian & Casazza, 2012).

Usually disability seems to be one of the most important determinants for seeking healthcare in patients with chronic LBP. In 1980, the WHO defined disability as 'any restriction is performing an activity in the manner of within the range considered normal for a human being'. The International Classification of Functioning, Disability and Health (ICF), a bio psychosocial model currently used in rehabilitation and disability perspectives. In this classification, disability is defined as an umbrella term for impairments, activity limitations and participation restrictions. It denotes the negative aspects of the interaction between an individual (with a health condition) and that individual's contextual factors (environmental and personal factors). Patients with CLBP may be impaired in body functions and structures, limited in performing activities and restricted in participation (Geertzen et al, 2006).

The point prevalence of low back pain 33%, 1- year prevalence is 65% and 84% for lifetime prevalence (Walker, 2000). Age may affect the prevalence of back pain but there is no accurate observation. Low back pain usually occur around one-third of the UK adult population in every year. Of these, around 20% (1 in 15 of the population) will consult their GP about their back pain (Macfarlane et al, 2006). These results in 2.6 million people in the UK, seeking advice about back pain from their GP each year. Patients with persistent or fluctuating pain that lasts longer than three months are defined as having chronic low back pain. Patients with chronic low back pain are more likely to see a family physician (65.0%) for their pain compared with orthopedists (55.9%), physical therapists (50.5%), and chiropractors (46.%) (Haldeman & Dagenais, 2008). Acute low back pain is one of the most common reasons for adults to see a family physician and most patients improve quickly with treatment but proper evaluation is important to identify the rare and severe cases (Brian & Casazza, 2012). The economic impact of chronic low back pain can cause loss of function, loss of working activity, treatment costs, and disability payments so the estimates costs range is from $12.2 to $90.6 billion per year (Allen et al, 2009).

Literature shows that 90% of low back pain resolved spontaneously within one month. One year after a first episode of back pain 62% of people still have pain and

16% of those initially unable to do work after one year (Hestbaek et al, 2003). Patients presenting with a new episode or exacerbation of low back pain considerately they have a specific cause for their pain. The objective of the early management of non-specific low back pain is to ensure that an example of low back pain does not result in long-term withdrawal from normal activities; including sickness does not from paid employment. It is improving by faces pain, disability and distress that are the focus for the prevention of non-specific low back pain and thus the focus of this guideline. More severe pain and back pain occurs disability, and psychological distress shows a poor long term results for people with non-specific back pain (Pincus et al, 2008).

The chronic pain is very complex in nature so the single medical treatment may not be effective, and multidisciplinary treatment is much benefited (Wand & Hanter, 2009). There is no specific treat in low back pain. Many of the individual applies the different treatment approaches which have good therapeutic benefit. The result of both the specific treatments varied from each to others. Broadly speaking the treatments that have been used for low back pain are: Education or information, posture correction. Exercise Including group and individual supervised exercise both land and water based. Manual therapies including: manipulation, massage, mobilization. Other non-pharmacological interventions: Including, interferential, laser, lumbar supports, transcutaneous electrical nerve stimulation, traction, ultrasound. Pharmacological interventions: Including antidepressants, non-steroidal anti-inflammatory drugs (NSAIDs), opioids, and paracetamol (Savigny et al, 2009).

The treatment of low back pain remains controversial though a developing number of treatments to evaluate various numbers of interventions and clinical guidelines (Andersson et al, 1999). In acute low back pain the treatment is only for relieving pain, but also improve functional ability, and to prevent recurrence and chronicity. The outcome of acute low back pain are pain intensity, overall improvement, and back pain specific functional status, impact on employment, generic functional status, and medication use. Intervention-specific results may also be relevant, for example coping and pain behavior for behavioral treatment, strength and flexibility for exercise therapy, depression for antidepressants, and muscle spasm for muscle relaxants (Tulder et al, 2004).

In medical management many type of medications are used such as non-steroidal anti-inflammatory drugs (NSAIDs) that can be helpful for relieve pain and reduce associated inflammation. Narcotic pain medications and muscle relaxants are often used to lead solved the symptoms of low back pain. Considering the above things a physiotherapist uses an active approach towards patient with low back pain. The most important intervention is patient's education and exercise therapy. Bed rest is not useful in acute LBP (Bekkering et al, 2003). Acetaminophen and non steroidal anti-inflammatory drugs are first-line medications for chronic low back pain. Tramadol, opioids, and other medications are also important for some patients who do not respond to non steroidal anti-inflammatory drugs. Acupuncture, exercise therapy, multidisciplinary rehabilitation programs, massage, behavior therapy, and spinal manipulation are effective in certain clinical situations. Patients with radicular symptoms may benefit from epidural steroid injections, but studies got mixed results. Normally chronic low back pain will not benefit from surgery. Surgery may be considered for select patients with functional disabilities or refractory pain despite multiple nonsurgical treatments (Allen et al, 2009).

Physiotherapist plays an important role in the treatment of low back pain. Postural correction is the common treatment for all syndromes. It allows the release of end stress loading in posture and dysfunction syndrome and maintenance for reduction in a derangement syndrome (Poulter, 1996). For improving pain restoration motion and strength to a painful lumbar spinal muscle is very important. It is true that exercise should be both aerobic as well as specific to the spine. Aerobic exercise are walking, jogging, swimming, bicycling etc. physiotherapist use mobilization, ultrasound, laser, or heat treatment (Wand & Hunter, 2009). Exercise therapy, focusing on strengthening and stabilizing the core muscle groups of the abdomen and back, appears to produce small improvements in pain and functioning in patients with chronic low back pain (Tulder et al, 2004). Acupuncture massage and pressure point massage are mildly helpful for reducing chronic low back pain, and the benefits last for up to one year. Massage appears to be most effective when combined with exercise, stretching, and education. Spinal manipulation prevents short- and long-term of back pain, helps in psychologically, and increases functioning. Behavior therapy is effective as like as exercise therapy for short-term relief of chronic low back pain.

Cognitive behavior therapy and progressive relaxation worked for short-term improvement, whereas biofeedback techniques had produced mixed results. Combining behavior therapy with other modalities has not any additive effect (Allen et al, 2009).

Treatment also can be including electrotherapy and manual therapy and postural advice. In manual therapy mobilization, manipulation, massage can be applied. Mobilization is a gentle form of physical treatment where the joint is moved as much as possible within the existing range of motion. Manipulation is a more forceful movement of a joint, possibly beyond what it could normally do. Both of these can help to improve the range of movement and reduce pain, allowing increased exercise and activity. Massage is a gentle, hands-on treatment which can help muscles to relax and can distract you from the pain. The effects of massage may only be short term, but may help you get over a difficult period (Brukner & Khan, 1993).

CHAPTER-III METHODOLOGY

The major aim of the study was to answer the question of 'behavior of pain among the low back pain patients attending at the CRP. This research setting in which the study was carried out including research methods used in the study design, study population, sampling method, instrumentation and data collection etc.

3.1 Study design

A quantitative cross sectional design was used to explore the behavior of pain among low back pain. A quantitative research design was used so that there were used large number of participants and therefore to collect data.

The cross sectional survey study carried out among patients who were suffering from mechanical low back pain in Centre for the Rehabilitation of the Paralyzed (CRP) at musculoskeletal unit. This study was conducted to determine the extent of behavior of pain with LBP. The study questionnaire included items about the subject's socio demographic feature and pain related feature.

3.2 Study area

Data were collected from the outdoor and indoor Musculoskeletal Physiotherapy unit of Centre for the Rehabilitation of the Paralyzed (CRP). The researcher thought that it is the most suitable place because there has the availability of the desired sample.

3.3 Study sampling and population

The study populations were patient with low back pain who attended in CRP for treatment. The sample was chosen convenience sampling and developed a mixed structured questionnaire for identifying the inclusive behavior of pain of subjects and then used to purify the members of the population, especially those subjects who were suffering from low back pain with considering the inclusion and exclusion criteria according to close guidance of respected supervisions.

3.4 Sample size

The equation of sample size calculation are given below-

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

Here,

$Z(1-\frac{\alpha}{2})$= 1.96

P= 0.65 (Here P=Prevalence and P=65%)

q= 1-p

=1-0.65

=0.35

d= 0.05

According to this equation the sample would be more than 350 people but due to lack of opportunity the study was conducted with 130 patients attending at physiotherapy department.

3.5 Inclusion criteria

- Both male and female were included.
- Medically diagnosed low back pain.

3.6 Exclusion criteria

- Patients who were medically unstable.
- Patients who are not diagnosed low back pain by physician.

3.7 Sampling technique

One-thirty participants with low back pain were selected through convenience sampling technique due to the time limitation and as it was the one of the easiest, cheapest and quicker method of the sample selection. Data was collected from outdoor and indoor musculoskeletal Physiotherapy unit of CRP. Participants were selected from CRP because they were easily accessible for the researcher. Data was taken from the patients (medically diagnosed low back pain) who came at CRP to take Physiotherapy treatment or continuing their treatment.

3.8 Materials of data collection

Data was collected by using a mixed questionnaire paper set, developed by the investigators and validated by a jury of experts involved in the management of LBP (clinical physiotherapists), by conducting a face to face interview to collect information. The questionnaire included into identification demographic information and pain behavior related information. For the data collection tools were pen and pencils, approved forms and consent forms, reflex stick.

3.9 Data collection procedure

All patients who diagnosed as low back pain by the Physician and came at CRP for first time or continuing their Physiotherapy treatment were asked to participate in the study. There was a developed mixed type questionnaire after reviewing literature for asking to the participants. In the questionnaire participant's demographic information including age, sex, marital status, level of education, occupational history including types of job, and low back pain related information was asked.

3.10 Questionnaire

The question types were mixed (structured and both closed ended and open ended) to purify the participants and for collecting the date for the findings of the study, therefore the researchers was not predict or influence results with the research.

3.11 Data Analysis

Descriptive Quantitative data were analyzed by using SPSS 16 software. Descriptive statistics was used for data analysis. The coded responses on the questionnaire were then entered on the computer general coding forms. They were analyzed using Statistical Package for the Social Science (SPSS) windows version 16.0. The results were presented with the use of simple percentage (%). The collected data was illustrated with tables, bar charts and pie charts also.

3.12 Ethical issues

The proper guidelines were followed in research which is given by local ethical review committee according to rules and guidelines of WHO and BMRC. The permission was taken from the academic authorities and then got permission from the research supervisor to conduct this study. The questionnaire with consent form was developed and approved by supervisors of the researcher. Each copy was filled by researcher himself with respondents' signature willingly. All the data was reviewed in strict secure and maintained confidentiality.

3.13 Informed consent

Written consent (appendix) was given to all participants prior to completion of the questionnaire. That was explained to the participants about his or her role in this study and received a written consent form every participants including signature. So the participant assured that they could understand about the consent form and their participation was on voluntary basis. The participants were informed clearly that their information would be kept confidential and harmful occur. It was explained that there might not a direct benefit from the study for the participants but in the future cases like them might get benefit from it. The participants had the rights to withdraw consent and discontinue participation at any time without prejudice to present or future treatment at the musculoskeletal (MS) unit of CRP. Information from this study was anonymously coded to ensure confidentiality and was not personally identified in any publication containing the result of this study.

3.14 Rigor

This study was conducted in systemic way. All the steps of research were followed by the researcher sequent. It is ensured that during data collection and analysis the values and biasness were avoided. When conducting the study the researcher took help from the supervisors and physiotherapists. The researcher never influenced the participants by her own perception during data collection. A trustful relationship with participants was always maintained and the documents were kept confidential. Biasness was avoided during data analysis.

3.15 Limitation of the study

This was a small study which needs to be replicated with larger numbers of participants. The sample size was limited due to scarcity of length of research project and major problems with recruitment and retention of the sample on a given period of research project. Moreover there was a major problem with same sample who received physiotherapy treatment as a regular patient on a given time. The shortage of selective patients' attendance resulted in a reduction of statistical power to estimate the empowerment of the research results.

With regard to the questionnaires used, ethical considerations and a lengthy questionnaire led to researcher using a single items measurement procedure that placed limitations on this finding. The questionnaires took approximately 20 to 25 minutes to complete. Time taken to complete the questionnaires was affected by factors such as explanation, asking relevant questions, in case of unable to realize the questions, there is brief explanations, measurements etc.

All relevant information was analyzed by SPSS v.16 software. In this survey, variables were socio-demographic, nature of pain, aggravating movement, relives, radiation, associated symptom ,response of medication, affects activity of daily living, previous intervention, Response of previous. The socio-demographic variables include the information about age, gender, marital status, religion, education status, living area, and occupation. The researcher collected the descriptive data and calculated as percentages by using the Microsoft excel SPSS 16.0 version software programmed and presented by using table, bar charts and pie charts.

4.1 Sex

Among all participants the number of female was 78 (60%) and the number of male was 52 (40%). Result shows that female are more affected by Low back pain than male.

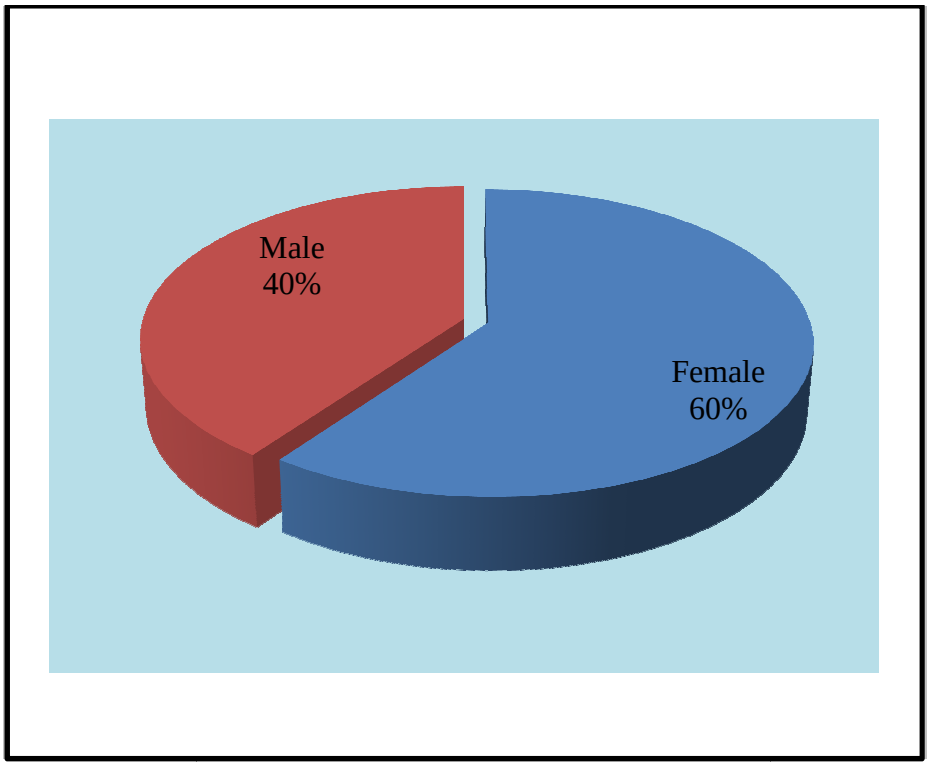


Figure-1: Sex

4.2 Age range

Ages are grouped into 3 categories that found in this study such as 20-29 were 36 (27.7%) and 30-49 were 78 (60%), 50-60 were 16 (12.3%).

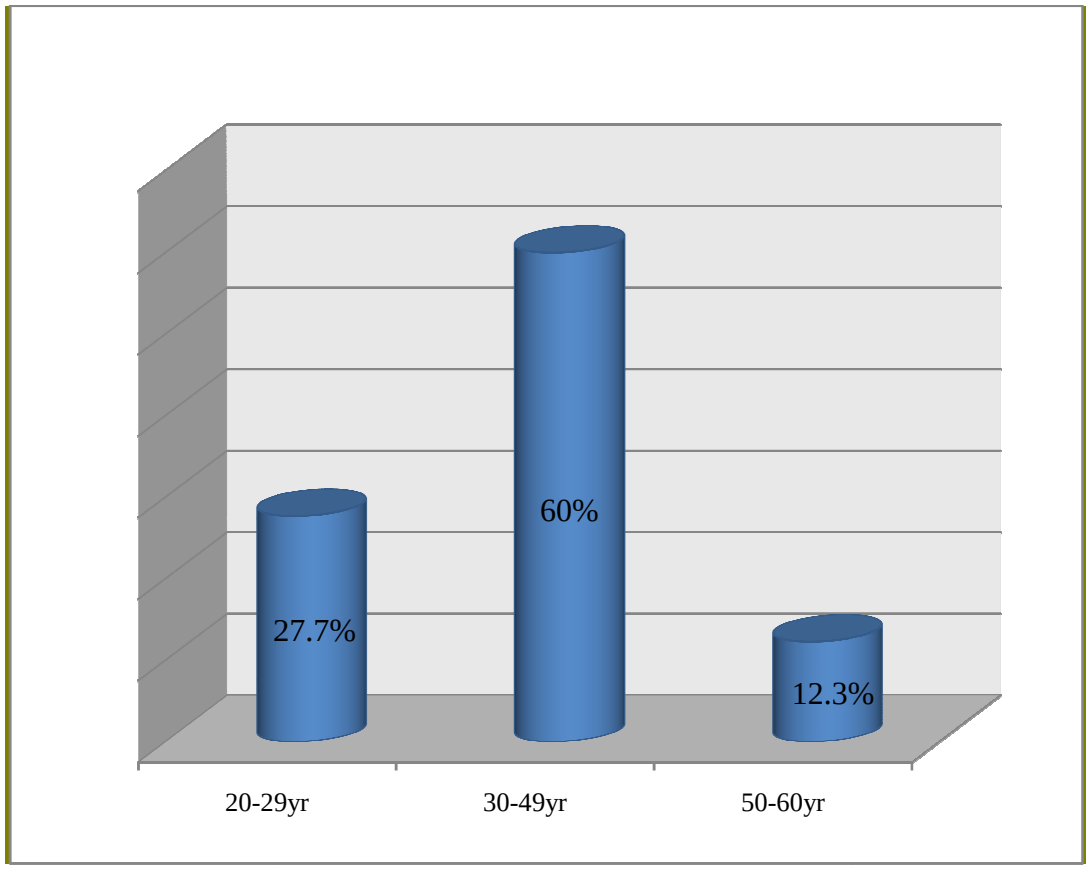


Figure-2: Age range

4.3 Occupation

The result of the study focused that 46% (n=60) were house wives, 19% (n=24) were service, 4% (n=5) were unemployed, worker, Business, farmer and students were each of 6% (n=8), 7% (n=9) and 12% (n=16). There is a equal parcentage of worker and Business.

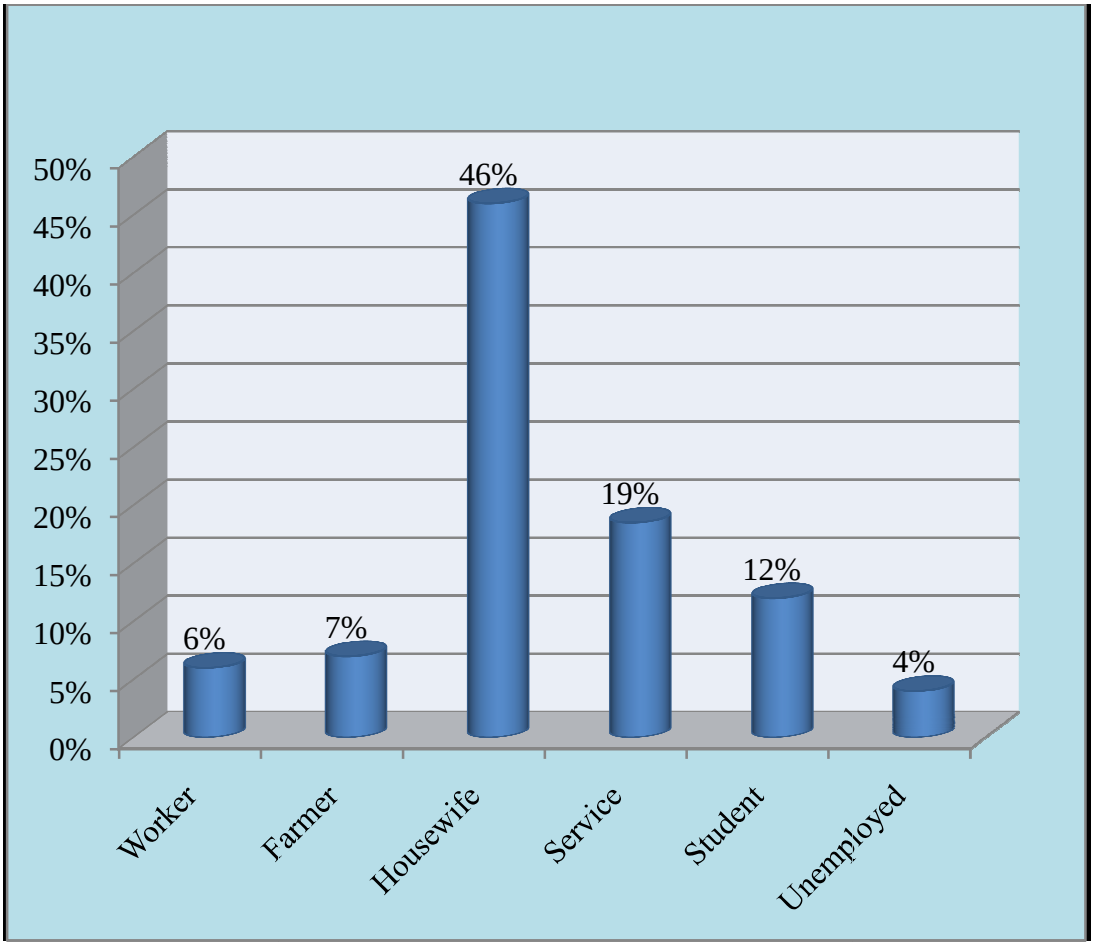


Figure-3: Occupation

4.4 Education level

In this study, it was found that illiterate level were 7%, primary level were 34%, SSC were18%, HSC were 22%, and bachelor or above were 19%.

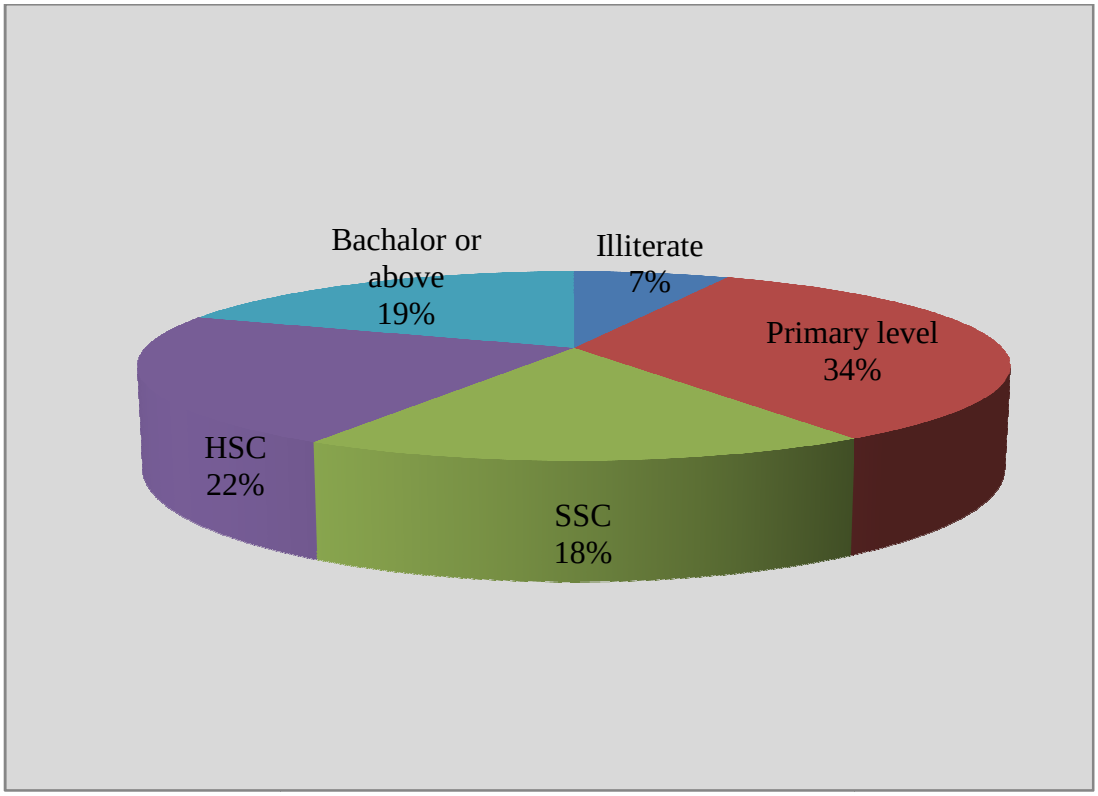


Figure-4: Educational level

Demographic characteristic

In the table represent that the more affected age group is 30-49 year were 78 (60%). Female were 78(60%) and male were 52(40%). Married were 106(81.5%), unmarried were 21(16.2%).

	Number (%)
Age Group	
20-29	36 (27.7%)
30-49	78 (60%)
50-60	16 (12.3%).
Sex	
Male	52 (40%)
Female	78 (60%)
Marital status	
Married	106(81.5%)
Unmarried	21(16.2%)
Divorced	2(1.5%)
Educational Status	
Illiterate	9(7%)
primary level	44(34%)
SSC	23(18%)
HSC	29(22%)
Bachelor or above	25(19%)

Table-1: Demographic characteristic of the participants

4.5 Onset of pain

The chart shows the result that suggest, 64% (83) patients were gradual pain and 36% (47) were sudden pain.

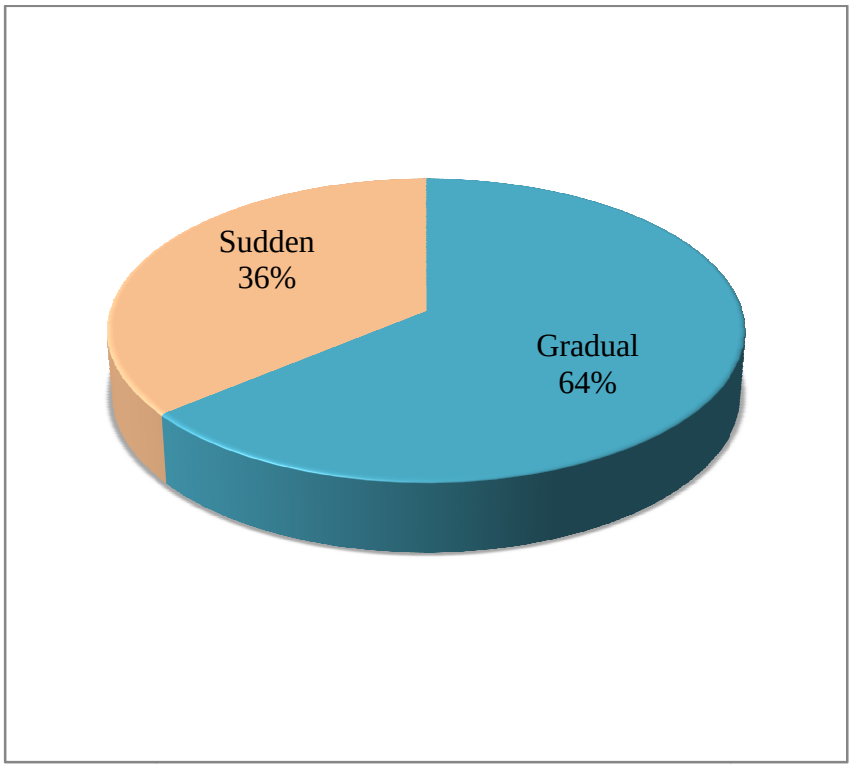


Figure-5: Onset of pain

4.6 Severity of Pain

Among all participants 2 (2%) patients pain was mild pain, 102 (78%) patients pain was moderate and 26 (20%) was severe.

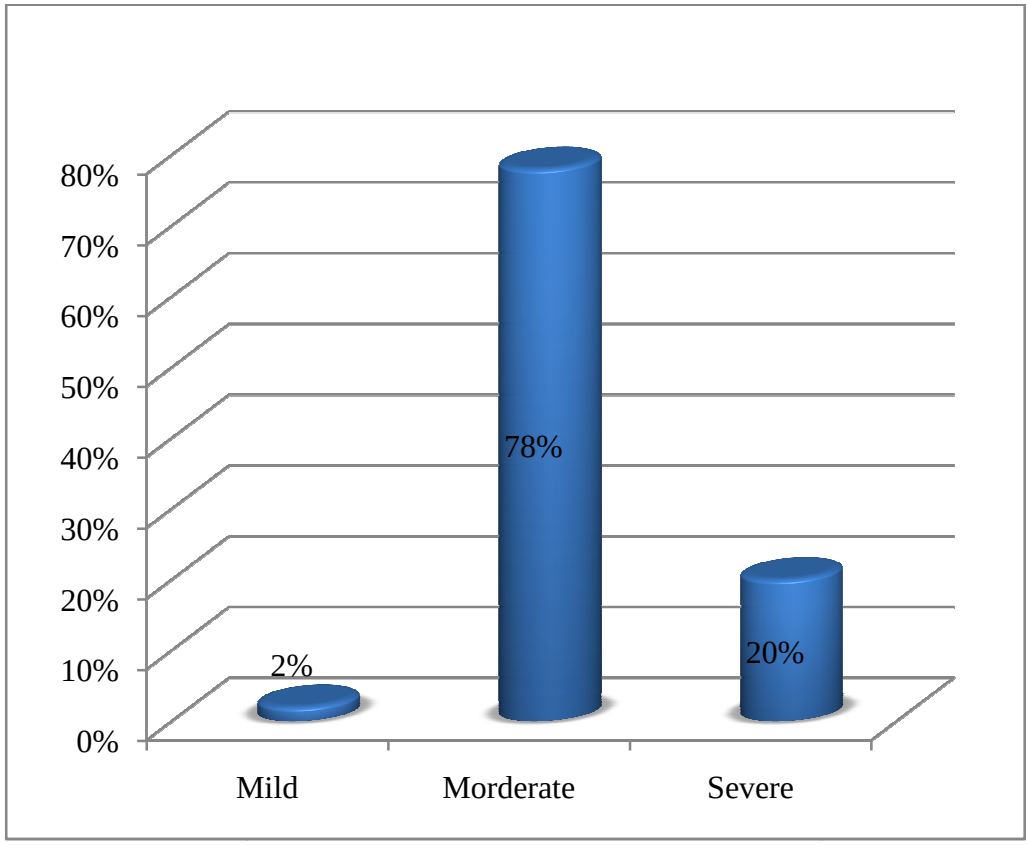


Figure-6: Severity of pain

4.7 Nature of pain

In this study, it was found that n=28 (22%) were suffer from constant pain and n=102 (78%) were suffered from intermittent pain.

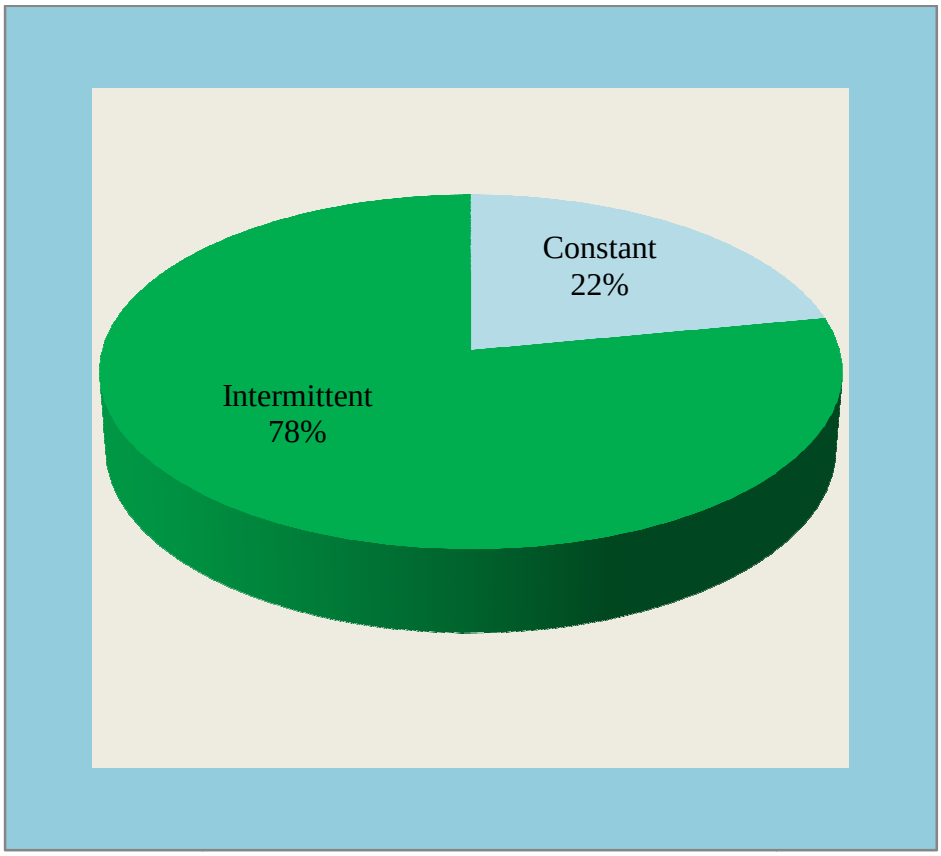


Figure-7: Nature of pain

4.8 Radiation of pain

Among 130 participants the radiation on pain 57 (44%) were leg, 28 (22%) were thigh, 23 (18%) were back. There was equal percentage in buttock and no radiation were (8%).

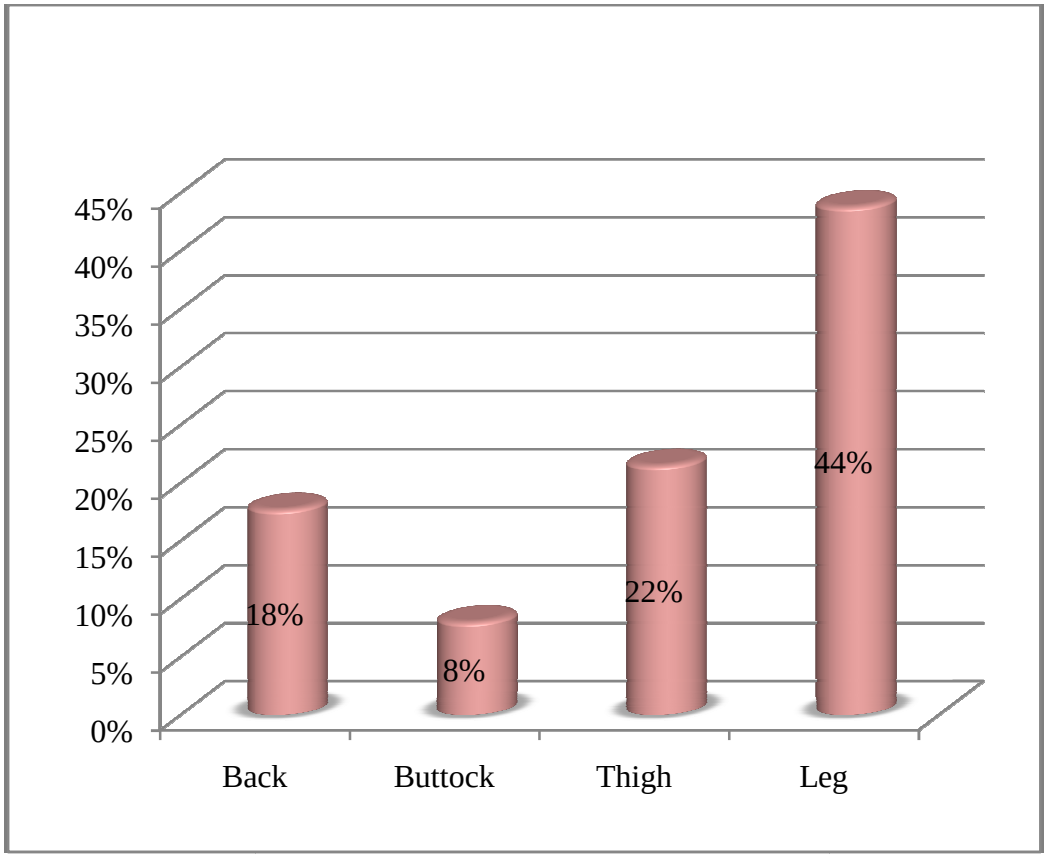


Figure-8: Radiation of pain

4.9 Relevant symptom

Out of 130 participants 55.4% of had parasthesia, 10.8% of patients had numbness, 16.2% of had tingling pain, 10% of had pins and needles and 7.7% of patients had no relevant symptoms.

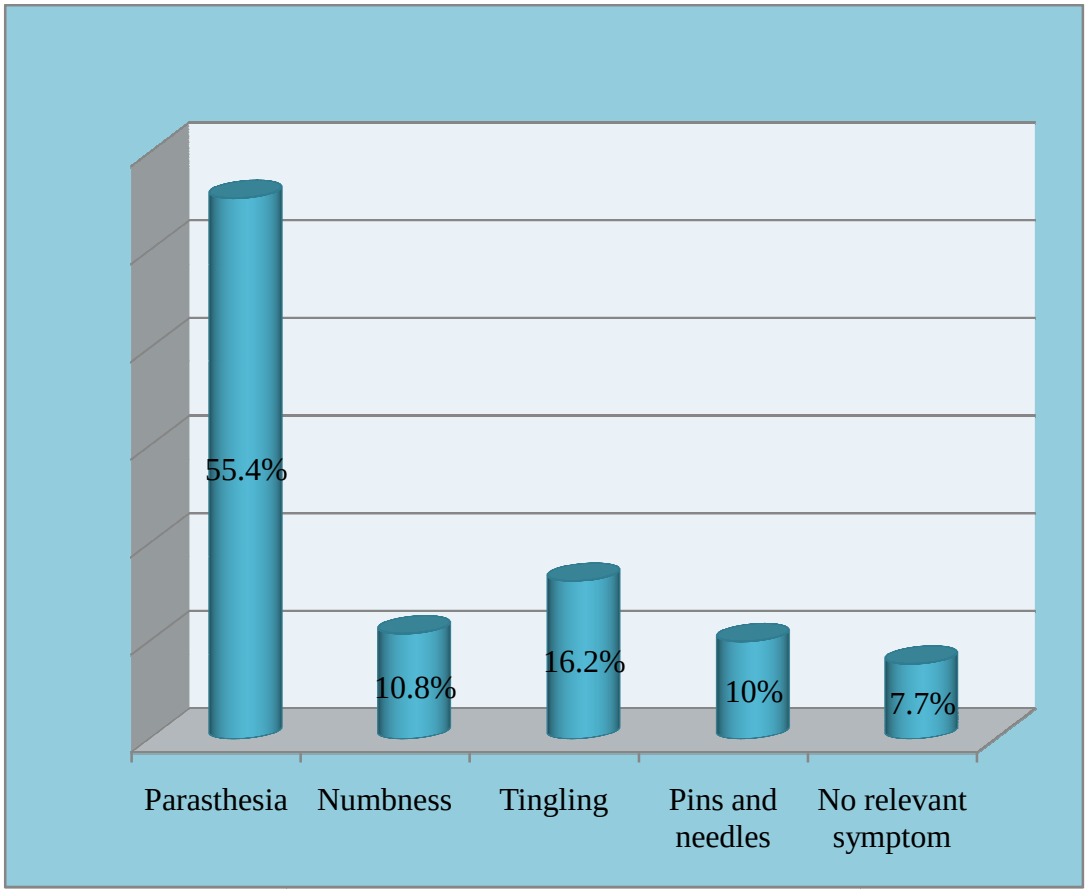


Figure-9: Relevant symptom

4.10 Aggravating movement

Among 130 participants 97% (126) of patients with low back pain was aggravated by flexion movement, 2% (3) were rotation movement, and 1% (1) were extension movement.

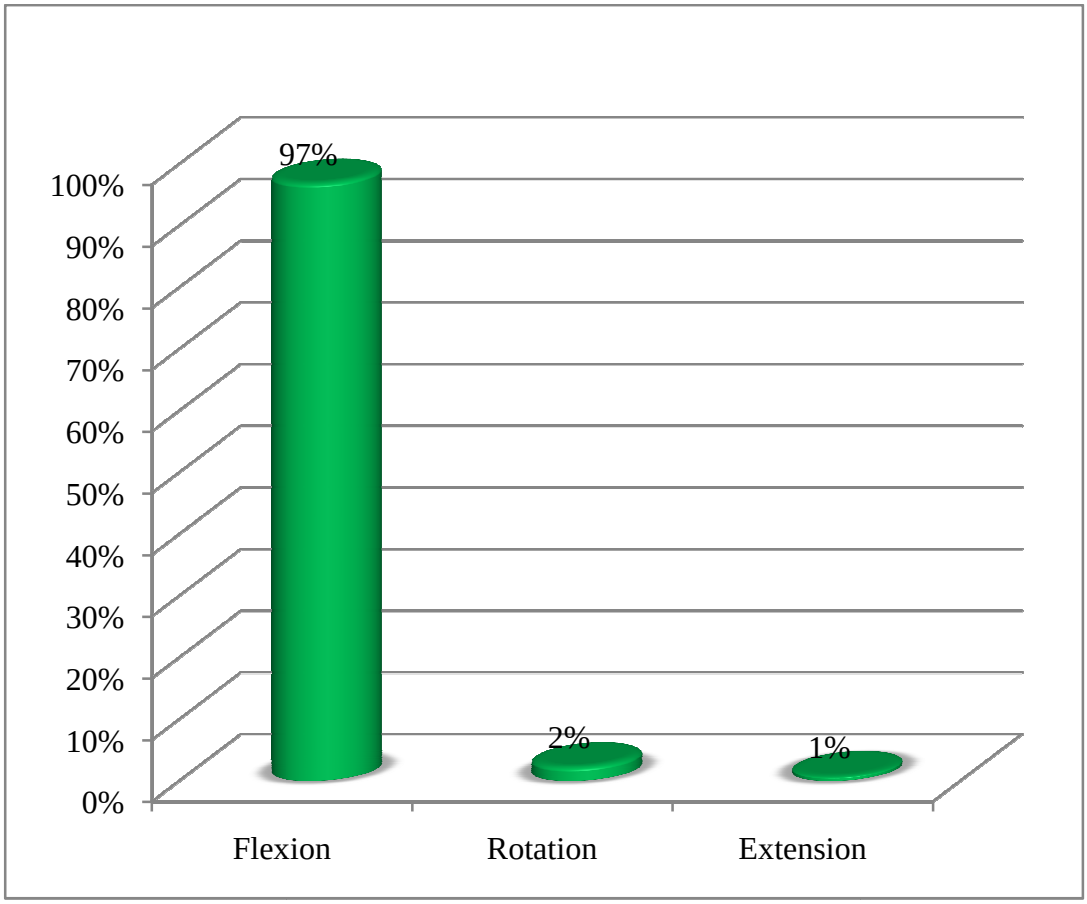


Figure-10: Aggravating movement.

4.11 Relives of pain

About 91% of patients with low back pain relieved from symptom by taking rest and 9% were relieved by movement.

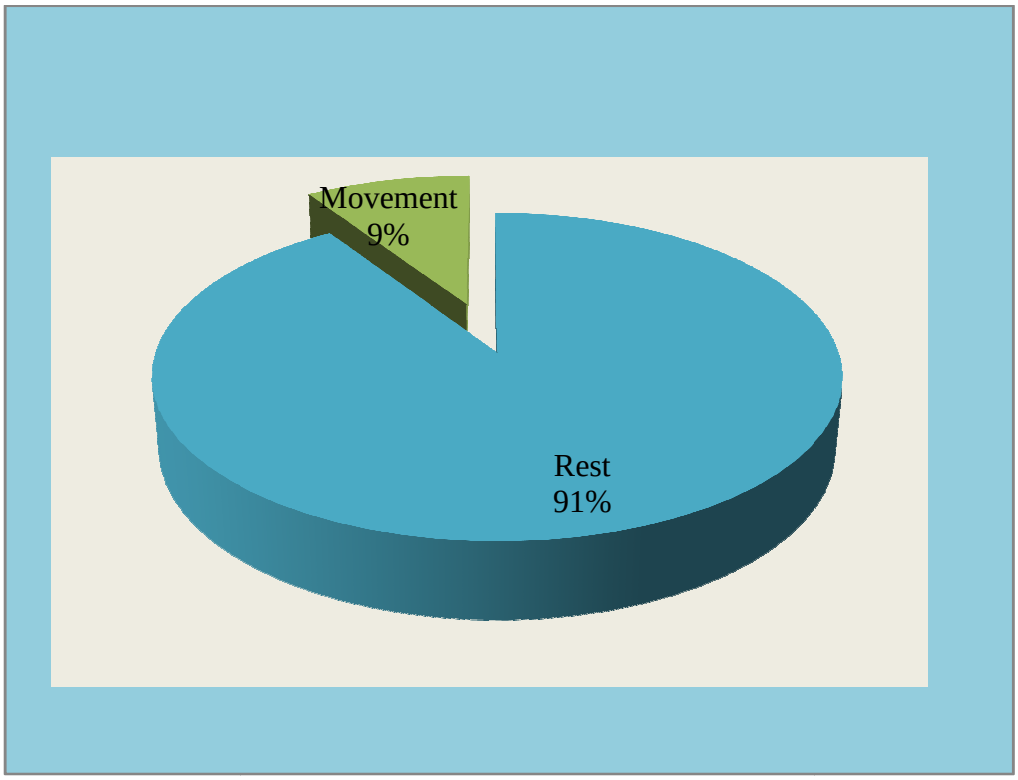


Figure-11: Relives of pain.

4.12 Affect ADL

The findings of the study represented that 116 (89%) people were affected on ADL due to pain and 14 (11%) people were not affected due to pain.

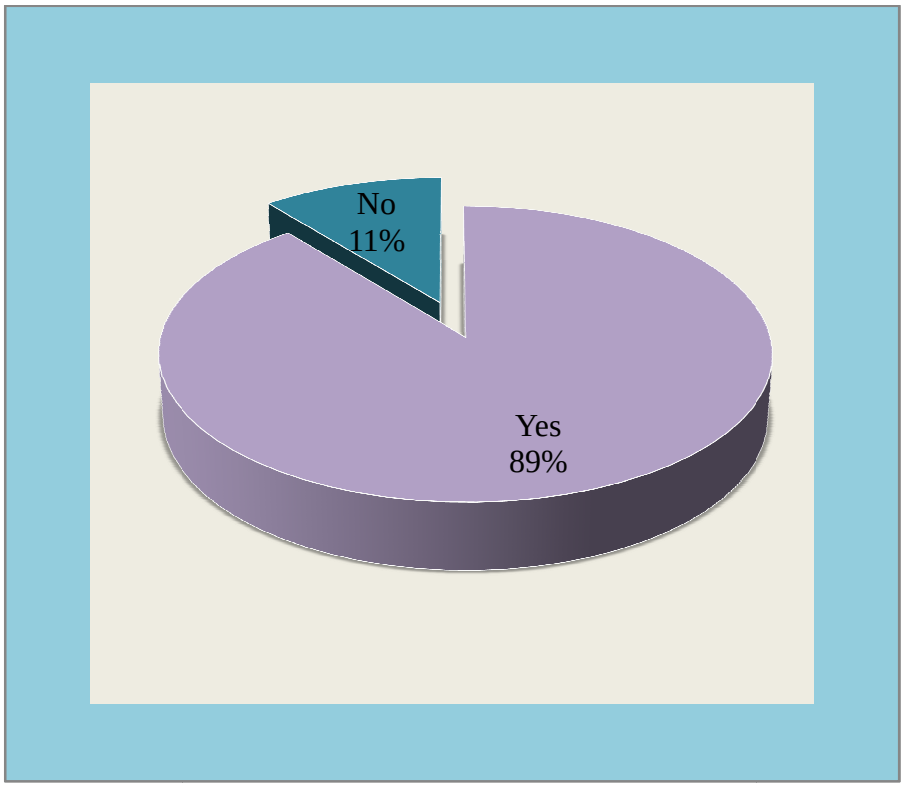


Figure-12: Affect ADL

4.13 Response of medication

The results of the study focused that 100% patients were take medication. 95% (n=124) were response to medication and 5%(n=6) were not respose to medication.

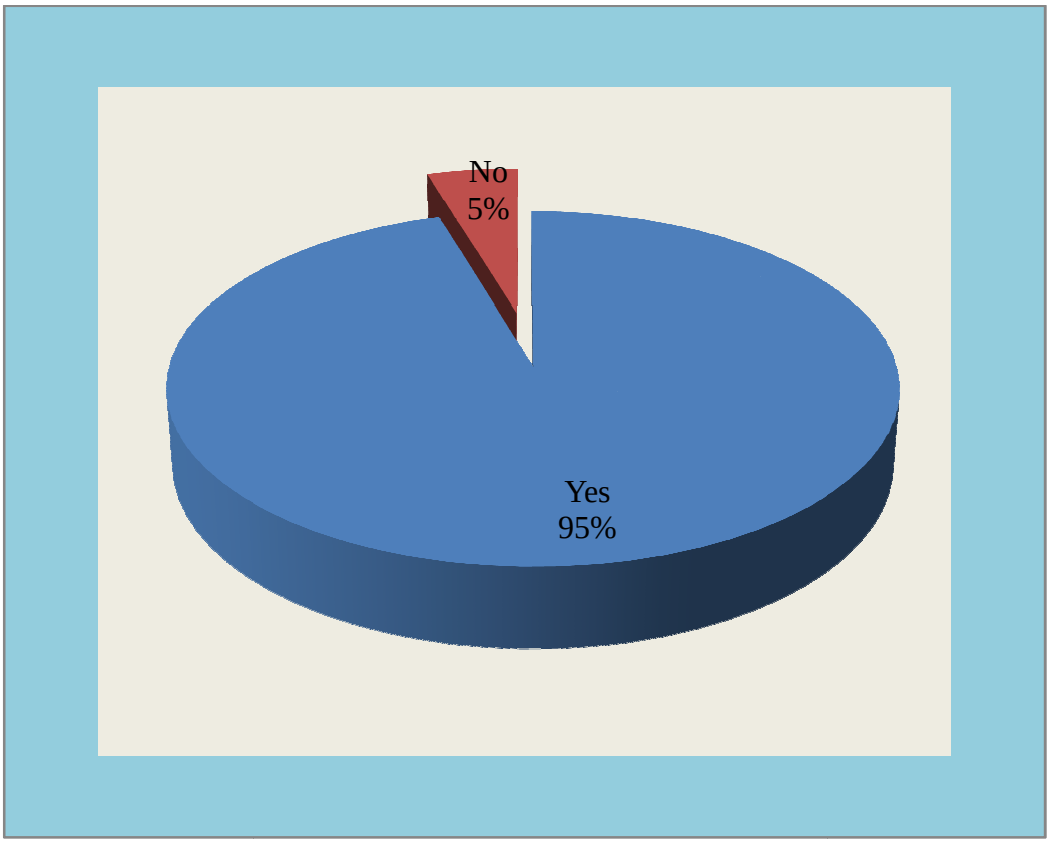


Figure-13: Response of medication

4.14 Intervention

Among the 130 participants n=105 (81%) patients were take previous intervention and n=25 (19%) patients were not take any previous intervention.

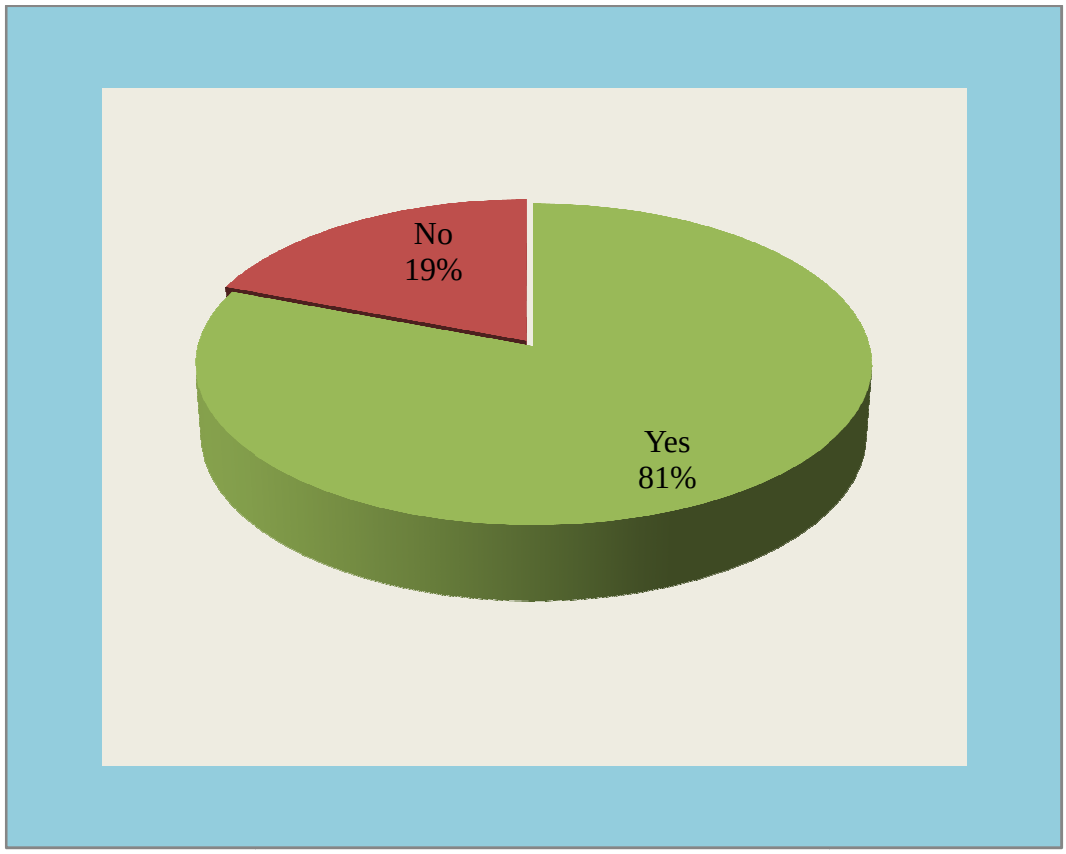


Figure-14: Previous intervention

Interventions before Physiotherapy

The results of the study focused that Among the 130 participant with low back pain, 44.6% were goes to general practitionar, 27.7% were goes to Orthopedics, 6.2 % were goes to physiotherapy, 2.3% were goes to traditional holder and 19.2% patient were not take any previous treatment.

Treatment take or not	Type of treatment	Number	percent	total
Yes	GP Orthopedic Physiotherapy Traditional- holder	58 36 8 3	44.6 27.7 6.2 2.3	81.8%
No		25	19.2	19.2%

Table-2: Various interventions

4.16 Relationship between sex and nature of pain

Among the total participants it was found in female 61 has intermittent pain and 17 had constant pain, and in male 41 had intermittent pain and 11 had constant pain.

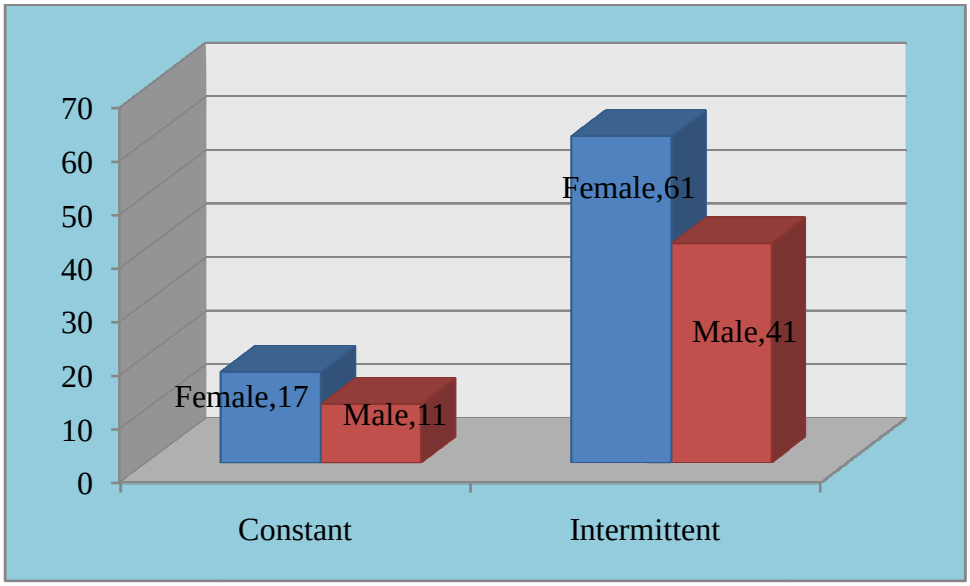


Figure-16: Relationship between sex and nature of pain

CHAPTER-V DISCUSSION

The aim of the study was to explore the behavior of pain among the low back pain patients attending at the centre for the rehabilitation of the paralyzed (CRP). A variety of behavior had been found from the selected samples whether it is acute, sub acute or chronic type mechanical low back pain by a categorized variable outcome that are socio demographic and pain behavior related.

The study based on data gathered from low back pain patients who came to CRP for receive treatment. This was a prospective type of survey on 130 participants who were complained of mechanical low back pain where 78 (60%) was female and 52 (40%) was male. A Swedish studies showed that, among 41% of the participants reported having low back pain and of these 55% were women and 45% were men (Dijken et al, 2008). Taucer et al (2009) found that 39.9% female were suffered from low back pain where man were 34.9%. In research highest age group were 30-49 years that is 60% of the participants, and most commonly affected group were 20-29 that is 27.7% and 50-60 age group were 12.3%. An epidemiology community health study stated that the most affecting age group was 30 to 39 aged people where men were 39.9% and women were 38.9% (Ozguler et al, 2000).

In recent study the percentage of various occupation, 46% were house wives, 19% were service, 4% were unemployed, worker, farmer and students were each of 6%, 7% and 12%. So its indicated that housewives are more affected in low back pain. A turkish study claimed that about 31.2% housewives are suffered by lumber pain (Taucer et al, 2009). The researcher found that most of the LBP patients were less educated about primary level were 34%, SSC were18%, HSC were 22%, and bachelor or above were 19%. A Thai study stated that 46.1% were at educated as primary level (Tomita et al., 2010). In this study recommend that most participants are married about 81.5% where a French study claimed that about 72.2% married people are suffered by low back pain (Perrot et al, 2009).

Out of 130 participants intermittent pain had (78%), and constant pain had (22%). The findings in this study most of the patient experienced moderate type of pain at

back in case of low back pain.1.5% patients suffered from mild pain, 78.5% patients suffered from moderate pain and 20% patient's pain was severe. A Survey of chronic pain in Europe claimed that 46% had constant pain, 54% had intermittent pain. And also shows that, 66% patient suffered by moderate pain, 34% suffered by severe pain (Breivik et al, 2006). The study recommended that, among 130 participants 97% of patients with low back pain was aggravated by flexion movement, 2% were rotation movement, and 1% were aggravated by extension movement. An Australian study, The self reported aggravating activities of chronic non specific low back pain patients do not demonstrate a consistent directional pattern: an observational study shows that pain was aggravated on flexion (69.6%), extension (29.5%) and unilateral directed (0.9%). That means flexion movement was more aggravated the pain (Wand & Hunter, 2009). The study also shows that 90.8% of patients with low back pain relief from symptom by taking rest and 9.2% were relief by movement.

In this study about 95.4% were response to medication and 4.6% were not respose to medication. A European study also shows that, almost half were taking non-prescription analgesics, NSAIDs (55%), paracetamol (43%), weak opioids (13%). Two-thirds were taking prescription medicines, NSAIDs (44%), weak opioids (23%), paracetamol (18%). Medication was response in majority of people. 40% had inadequate management of their pain (Breivik et al, 2006).

In present study shows 80.8% patients were take previous intervention and 19.2% patients were not take any previous intervention. About patients with low back pain 44.6% were goes to general practitionar, 27.7% were goes to orthopedics, 6.2 % were goes to physiotherapy,2.3% were goes to traditional holder and 19.2% patient were not take any previous treatment. Literature shows that Patients with chronic low back pain are more likely to see a family physician 65.0% for their pain compared with orthopedists 55.9%, physical therapists 50.5%, and chiropractors 46.7 % (Savigny et al, 2009). The result is varied due to difference in the sample size. In this study also shows that, in previous treatment 4.6% were effective, 42.3% were partially effective, and 32.3% were not effective.

In this study, about 64% patients had gradual symptom and 36% had sudden symptom. Location of pain present, 91% was in back, 7% was in buttock, and both

leg and thigh were in 1%. It was also suggest that the location of pain commonly in back. Pain radiates 43.8% was leg, 21.5% are thigh17.7% was back, 8.7% was buttock. And 8.7% was no radiation. In this study showed that the radiation on pain commonly in leg. And relevant symptoms of pain of the participants are 55.4% patients had parasthesia, 10.8% of patients had numbness, 16.2% of had tingling pain, 10% of had pins and needles and 7.7% of patients had no relevant symptoms. For which 89.2% people were affected on ADL due to pain and 10.8% people were not affected.

CHAPTER-VI CONCLUSION

Low back pain is a very common musculoskeletal condition in the developing country where Bangladesh is not out of range. Most of them suffered from mechanical deformation of the spinal musculoskeletal structures and complain about pain. In this study the researcher explored the behavior of pain among the low back pain among the low back pain. So the results of the study shows that female are most vulnerable than male. From the study it can be concluded that the most vulnerable age range is 30 to 49 years for low back pain. Household and bending activities are aggravating factors to develop low back pain and relief by rest. Nature of pain is mostly intermittent in low back pain patient. Most of the Patient experienced moderate type of pain at back in case of low back pain and good response to medication. The onset of pain is more gradual than intermittent. Location of pain is back, buttock, and both leg and thigh. In this study showed that the radiation on pain commonly in leg and. The relevant symptoms of pain are parasthesia, numbness, tingling pain, pins and needles. Study shows maximum patients were take previous intervention. Maximum patient were goes to general practitionar at first and it was pertially effective. The researcher gratefully acknowledges the participation in this survey study of all the staff and patients who took part. Finally praise to my merciful Allah, as I completed my research project successfully in time.

The recommendation evolves out of the content in which the study was conducted. The aim of the study was to find out the behavior of pain among the low back pain, therefore main recommendation would be made. Further research of the different perspectives emerged from the study, is recommended: In Bangladesh, as a new profession physiotherapy practice should be strong evidenced based so that can develop a interrelationship with other professionals' standard in comparison with the support of the global evidence of rigorous. This type of study should be considered that need to be collected adequate resources that knowledge on this area could be extended and later result can obtain to generalize to the population. During further research it is recommended to take more samples with adequate time to solve the recent problems areas for better result and perspectives.

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APPENDIX

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Avwg Avcbv‡K AeMZ KiwQ †h, GUv Avgvi Aa¨q‡bi Ask Ges Ab¨ †Kvb D‡Ï‡k¨ GUv e¨eüZ n‡e bv| M‡elK mivmwi GB Aa¨q‡bi mv‡_ AšZf~©³ bq| ZvB GB M‡elYvq AskMÖnY Avcbvi eZ©gvb Ges fwel¨r wPwKrmvq †Kvb cÖfve †dj‡e bv| Avcwb †h me Z_¨ cÖ`vb Ki‡eb Zvi †MvcbxqZv eRvq _vK‡e Ges Avcbvi cÖwZ‡e`‡bi NUbvcÖev‡n GUv wbwðZ Kiv n‡e †h, GB Z‡_¨i Drm AcÖKvwkZ _vK‡e| GB Aa¨q‡b Avcbvi AskMÖnY ‡¯^”QvcÖ‡bvw`Z Ges Avcwb †h †Kvb mgq GB Aa¨qb †_‡K †Kvb †bwZevPK djvdj QvovB wb‡R‡K cÖZ¨vnvi Ki‡Z cv‡ib| GQvov †Kvb wbw`©ó cÖkœ AcQ›` n‡j DËi bv †`Iqv Ges mv¶vrKv‡ii mgq †Kvb DËi bv w`‡Z PvIqvi AwaKvi Avcbvi Av‡Q|

GB Aa¨q‡b AskMÖnbKvix wn‡m‡e hw` Avcbvi †Kvb cÖkœ _v‡K Zvn‡j Avcwb M‡elK gvwR©qv dviyKx A_ev ‡gvt mwdKzj Bmjvg, cÖfvlK, wdwRI‡_ivcx wefvM, evsjv‡`k †nj_ cÖ‡dmÝ Bbw÷wUDU, wm Avi wc, mvfvi, XvKv-1343 G †hvMv‡hvM Ki‡Z cv‡ib|

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CONSENT STATEMENT

Assalamualaikum / Namasker, my name is Marzia Faruki, I am conducting this study for a Bachelor project study titled “Behaviour of pain among the low back pain patient attended at CRP.” from Bangladesh Health Professions Institute (BHPI), University of Dhaka. I would like to know about some personal and other related questions about low back pain. This will take approximately 10 - 15 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 Musculoskeletal area, so your participation in the research will have no impact on your present or future treatment in Musculoskeletal area. All information provided by you will be treated as confidential and in the event of any report or publication it will be ensured that the source of information remains anonymous. 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 Marzia Faruki, researcher and/ or Md. Shofiqul Islam, Lecturer, BHPI, CRP, Savar, Dhaka-1343.

Do you have any questions before I start?

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

YES ☐

☐

Identification no:		
Name of the Patient:		
Date:		
Consent Taken :	Yes	No

NO

Signature of the Patient/Respondent ……

Signature of the Interviewer……

Questionnaire

"Behavior of pain among the low back pain patient attended at CRP"

Section 1: Socio demography Information

1.	Age	|__|__| yrs
2.	Sex / Gender	Female =1 Male =2
3.	Marital status	Married/living with partner =1 Unmarried/single =2 Divorced =3 Separated =4 Widow =5
4.	Religion	Islam =1 Hindu =2 Christianity =3 Buddhist =4
5.	Living area	Rural =1 Urban =2
6.	Educational status	Illiterate =1 Primary level =2 SSC =3

		HSC =4 Bachelor or above =5
7.	Occupation	Daily Labor =1 Farmer =2 Housewife =3 Business =4 Driver =5 Van/ Rickshaw Puller =6 Service =7 Student =8 Electrician =9 Unemployed =10 Helper of Motor Vehicle =11 Tailor =12 Job at Abroad =13 Carpenter =14 Boat Man =15 House maid =16 Other (Specify): _____ =17

Section 2: pain related question

8.	Onset of pain	Gradual =1 Sudden =2
9.	Duration of pain	DD / MM / YY
10.	Number of episode	Times
11.	Location of pain (present)	Back =1 Buttock =2 Thigh =3

		Leg =4 Other =5
12.	Severity of pain	Mild =1 Moderate =2 Severe =3
13.	Affected limb	Right =1 Left =2 Both side =3 Other =4
14.	Nature of pain	Constant =1 Intermittent =2
15.	Radiation	No =1 Back =2 Buttock =3 Thigh =4 Leg =5
16.	Relevant symptom	Parasthesia =1 Anesthesia =2 Numbness =3 Tingling =4 Pins and needles =5
17.	Sensory loss	No =1 Yes =2
18.	If yes	Level
19.	Motor loss	No =1 Yes =2
20.	If yes	Level
21.	Reflex	Present =1 Absent =2 Diminish =3
22.	Effects of pain on reflexive work	Cough =1

		Sneeze =2 Swallow =3
23.	Aggravating factor	Flexion =1 Extension =2 Rotation =3 Left side bending =4 Right side bending =5
24.	Reliving factor	Movement =1 Rest =2
25.	Progression	Worsening =1 Improving =2 Remain unchanging =3
26.	Affect activity of daily living	Yes =1 No =2
27.	Level of disability (Personal care, social life, travelling, employment / homemaking)	No pain in activity =0 Pain in activity but no restriction =1 Pain and unable to continue long term activity (1 hour) =2 Pain and unable to continue short term activity (1/2 hour-10 min) =3 Pain and full restriction in any activity =4
28.	Response of medication	Yes =1 No =2
29.	Previous intervention	Yes =1 No =2

30.	If yes	Traditional holder =1 GP =2 Orthopedic =3 Physiotherapy =4 Surgery =5 Other =6
31.	Response of previous treatment	Effective =1 Strongly effective =2 Partially effective =3 Not effective =4