CO-RELATION BETWEEN RADIOLOGICAL FINDINGS AND PATIENTS COMPLAIN OF LOW BACK PAIN AT CRP

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

CO-RELATION BETWEEN RADIOLOGICAL FINDINGS AND PATIENTS COMPLAIN OF LOW BACK PAIN AT CRP

Submitted by **Tania Mansura,** for the partial fulfillment of the requirements for the degree of Bachelor of Science in Physiotherapy (B. Sc. PT).

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Declarations

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 the physiotherapy department.

Signature-   **Date-**

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Contents

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Acronyms

ADL	Activities Of Daily Living
BHPI	Bangladesh Heath Professions Institute
BMI	Body Mass Index
BP	Back Pain
CRP	CentereFor The Rehabilitation Of The Paralysed
LBP	Low Back Pain
ODI	Oswestry Disability Index
SPSS	Statistical Package Of Social Science

Abstract

Purpose: To identify the "Co-relation between Radiological findings and patient complain of Low back pain" for low back pain patients. *Objectives:* To explore socio-demographic (age, gender, educational status, occupation) characteristics of patients with low back pain. To co-relate the complain of pain among the x-ray report of patient. *Methodology:* A quantitative cross-sectional study design was chosen to accomplish the objectives of the study. A structural questionnaire was developed through searching related literature. The participants were requested to answer according to the developed format of the question. The answers were entered into SPSS 16 software and analyzed as descriptive statistics. This study was conducted by . Data was collected by using Oswestry Disability Index questionnaire to evaluate disability level and pain measured by Orebro Back Pain questionnaire. SPSS was used for data analysis.*Conclusion:*This study concluded that similarity between radiological finfings specially x ray report and patient complain of LBP.

CHAPTER-1:	INTRODUCTION

1.1 Background

Low back pain is a most common exchusting disease of human being.The pain has a varies imaging protocol to specific identify.physician may order lumbo-sacral x-ray in the initial radiologic assessment of the patient.The aims of this study determine the frequency of occurrence of radiographic findings in patients reporting low back pain including the presence of osteophytes, spondylolisthesis and degenerative disc diseases and determine the relationship with patients' features including age, sex, marital status, level of education, body mass index and other radiographic findings.

Low back pain (lumbago) is a common musculoskeletal disorder complaint that can originate from many spinal structures including ligaments, facet joints, the vertebral periosteum, the paravertebral musculature and fascia, blood vessels, the annulus fibrous and spinal nerve root. The pain can be severe enough to cause debilitation. The incidence of LBP is such that over 80% of people will have complain of LBP over a life time.Non-specific LBP is the most common cause of LBP and is generally due to a sprain or strain in the muscle of the back and soft tissues. In Africa the average life-time prevalence of LBP among the adolescents was 36% and adult 62% while the mean LBP point prevalence among adolescents was 12% and adults 32%.

LBP is the too much common,complex and difficult codition to manage.At the initial moment of the LBP may b control by conservative therapy but in chronic low back pain LBP still frequently leads to expensive intervention(Janneke et al,2009).

The treatment and diagnosis of LBP are consist of identifying the cause and by the no speficity of the pain in the many cases. On the other hand radiological investigation is very necessary.Modern radiological imaging test such as x-ray have improved the diagnosis and detection of the cause of LBP.there are expensive imaging modalities or machine are not ususally available in many area.radigraphy is the beginning statement or assessment of treatment of physician.Easy to identify patient diagnosis or problem.

The investigative management for LBP range from X-ray. Plain radiographs of the lumbar spine are routinely ordered in patients with acute mechanical and neurogenic

pain of the lower back. Despite the availability of CT and MRI in some centers in Nigeria, it is the authors' observation that the use of plain radiography in the evaluation of LBP is very high. Unfortunately the yield is low, for instance disc herniation (the commonest surgically remediable cause of LBP) cannot be diagnosed on plain.

An X-ray is a useful test for many conditions. It can help your doctor understand the cause of back pain or view the effects of injuries, disease, or infection. Your doctor may order a lumbar spine X-ray to diagnose:

In order to get a true picture of your spine, your physician may order weight-bearing images. These are X-rays that are taken while you are standing up rather than lying down. By having the X-rays taken while you are standing, your doctor can get a better picture of the forces that affect your spine that may   cause pain. Additionally, in some cases your physician may order X-rays taken while you are stretching or bending to better determine the cause of your pain. Lateral flexion and extension (bending forward and backward) X-rays may be taken to assess the degree of motion between the vertebrae.

Diagnostic imaging is indicated for patients with low back pain only if they have severe progressive neurologic deficits or signs or symptoms that suggest a serious or specific underlying condition. In other patients, evidence indicates that routine imaging is not associated with clinically meaningful benefits but can lead to harms. Addressing inefficiencies in diagnostic testing could minimize potential harms to patients and have a large effect on use of resources by reducing both direct and downstream costs. In this area, more testing does not equate to better care. Implementing a selective approach to low back imaging, as suggested by the American College of Physicians and American Pain Society guideline on low back pain, would provide better care to patients, improve outcomes, and reduce costs

Most of us occasionally suffer from lower back pain due to typical triggers such as pinched nerve, incorrect posture, physical exertion, sports related sprains and strains or even a bad flu. That kind of back pain is usually transitory and is commonly alleviated by over-the-counter medication, bed rest and time. In most cases, even a visit to the doctor is unnecessary. Within a few days, the pain is gone and we can resume our normal lives.

But lower back, or lumbosacral spine, pain has no obvious cause, is unrelenting and it impedes your ability to function in everyday activities, a visit to a back specialist is imperative in order to correctly diagnose the source of the pain and to receive proper treatment.

At your appointment, you will assess your condition by asking about your general health, lifestyle, activity level and history of the pain. He or she will conduct a thorough physical examination that will most likely include the testing of nerve function and muscle strength in certain parts of the leg or arm and the testing for pain in certain positions. All this will help him to pinpoint the source and scope of the pain and to formulate a diagnosis and treatment plan.

However, in cases where a clear diagnosis is not attained after this type of preliminary clinical investigation or if the specialist suspects that you may be suffering from a specific condition such as a herniated disc or degenerative disc disease (DDD), a much more involved study, including the use of more advanced diagnostic tools, will be prescribed. It is important to understand that receiving a correct diagnosis is necessary in order to allow the back specialist to formulate the most effective treatment course for the patient.

There are several relatively painless tests a specialist can prescribe to help formulate as accurate a diagnosis as possible. These tests include x-rays (your back specialist will most likely request an x-ray or MRI to diagnose your lower back pain), discography, bone scans, electromyography and lab tests.X-ray examination can be a useful screening tool to assess any bone abnormality of the spine.

1.2 Rationale

The target of this study correlation between radiological findings and patient complain of LBP in CRP.

Day by day low back pain increase in our country vastly.For the treatment,assessment,diagnosis radiological report specially for this study x-ray report is very important.And many of them don't know what is the relation x-ray report with the patient complain of low back pain.By this findings identify specific problem of structure of spine then making up treatment procedure accurately.They could have chance to develop low back pain and they suffer from low back and it is the common age of degeneration.Therefore it is required to know how radiological findings and patients complains are related. Degenerative changes of the spine include disc degeneration, facet joint osteoarthritis, vertebral body degeneration, ligament degeneration. This type of degenerative change cause low back pain. In village people, their main occupation is agriculture and female are housewife. They do not maintain their posture and doing different type of loading, bending and squatting type of activity. The spine has three functional roles firstly load bearing, secondly provision of movement, and finally protection of neural elements. Disc degeneration directly affects the first two roles of the spine and because of their activity most of them feel low back pain. These types of activities that may cause chronic low back pain in various work place. It may also decrease productivity and the quality of products and services.

1.3 Research Question

What is the correlation between radiological findings and patient complain of LBp

1.4 Objectives

1.4.1 General Objectives

To find out there is any correlation between the radiological findings and patient complain of LBP

1.4.2 Specific Objectives

- To calculate the number of participant with low back pain among the people who had x-ray report
- To assess the behavior of pain.
- To determine the educational level of the participant.
- To evaluate the possible cause that might responsible for developing LBP.
- To explore socio-demographic (age, gender, educational status, occupation) characteristics of patient with low back pain.

1.5   List of variables

Conceptual framework

Dependent variables   Independent Variables

Socio demographic variables
• Age
• Sex
• Educational status
• Living areas
• Occupations
• Family income

Lifestyle related variables
• Smoking
• Health status
• Regular physical exercise
• Sleeping posture
• Sleeping mattress
• BMI

➢Work and posture related variables

- Postural status
- Period of sitting posture
- Period of standing posture
- Period of bending posture
- Period of squatting posture
- Period of walking posture
- Lifting heavy objects
- Employment period
- Previous episodes of LBP
- Types of back injury

1.6   Operational Definition

Low back pain

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

Age

The number of years that a person has direct lived or a think has existed.

Heavy weight lifting

farming,swifting and any kind of heavy objects.

Back trauma

Any kind of accident, trauma that directly affect the back

CHAPTER-2 :	LITERATURE REVIEW

Back pain is the pain occur in the back that may come from bones ,muscles ,nerves joints and another structures of the spine .Mainly pain has various type like burning sensation, tingling , sharp .And pain is permanent and intermittent .First of all pain started from spine or back then gradually reffered to buttock ,leg, knee.The cause may be muscle strain or trigger point, instability due to weak postural muscles, hypomobile spinal facet joints, or degeneration or herniation of spinal disks. LBP perhaps more precisely called lumbago or lumbosacral pain occurs below the 12th rib and above the gluteal folds (Sikiru&Hanifa, 2010).

According to the anatomical view, the term LBP refers to pain in the lumbosacral area of the spine surrounding the distance from the 1st lumbar vertebra to the 1st sacral vertebra. This is the area of the spine where the lordotic curve forms. The most frequent site of LBP is in the 4th and 5th lumbar segment (Kravitz& Andrews, 1984). Low back pain may be postural, dysfunctional or derangement syndrome. Medical terms used to describe low back pain are PLID (prolapsed intervertebral disc), disc lesion, spondylolisthesis, spondylolysis and degenerative disc diseases. According to the European guidelines for management of acute nonspecific back pain in primary care, LBP (also known as lumbosacral pain) is defined as "pain and discomfort, localized below the costal margin and above the inferior gluteal folds, with or without leg pain" (Kuritzky&Samraj,(2012).

Mary & Ann (2006) stated that vertebrae that make up the spinal column through which the spinal cord passes. When these muscles or ligaments become weak, the spine loses its stability, resulting in pain. Because nerves reach all parts of the body from the spinal cord, back problems can lead to pain or weakness in almost any part of the body. Shiel (2009) explained that low back pain is pain and stiffness in the lower back. It is one of the most common reasons which people miss work. Low back pain is usually caused when a ligament or muscle holding a vertebra in its proper position is strained. According the anatomical view, pain in the lumbosacral area of

the spine encompassing the distance from the 1st lumbar vertebra to the 1st sacral vertebra is termed as LBP. This is the area of the spine where the lordotic curve forms. 4th and 5th lumbar segment is the most frequent site of LBP (Kravitz& Andrews, 1984).

A systematic literature review of population prevalence studies of low back pain between 1966 and 1998 was conducted to investigate data homogeneity and appropriateness for pooling. Fifty-six studies were analyzed using methodologic criteria that examined sample representativeness, data quality, and pain definition. Acceptable studies were assessed for homogeneity and appropriateness for pooling. Thirty were methodologically acceptable. Of these there were significant differences in study design, patient age, mode of data collection, potential temporal effects, and prevalence results. Point prevalence ranged from 12% to 33%, 1-year prevalence ranged from 22% to 65%, and lifetime prevalence ranged from 11% to 84%. A limited number of studies were left for analysis, making the pooling of data difficult. A model using uniform best-practice methods is proposed.

The low back consists of vertebral bodies, vertebral discs (cushions between the bones), cartilage (lines the bones that connect with other bones), supportive structures surrounding the spine, such as muscles, tendoOveruse of imaging for LBP is common in clinical practice . Though overuse of imaging for LBP has long been noted as a problem, yet the use of imaging [particularly computed tomography (CT)/magnetic resonance imaging (MRI)] continues to increase. Despite numerous published guidelines for the management of LBP, one US study shows a substantial inappropriate increase in advanced diagnostic imaging for LBP during the 12-year period from January 1999 to December 2010. Some of the key challenges to implementing good practice for LBP imaging include short consultation times, clinicians' misconceptions about clinical guidelines, fear of litigation in the event of missed rare serious pathologies and a desire to maintain harmonious relationships with patients . It has been shown that implementation of recommended guidelines needs regular repetition or to be continuous to effectively change the practice for LBP . To be effective, efforts to reduce imaging overuse should be multifactorial and

address clinician behaviours, patient expectations and education and financial incentives . The examples from USA and UK showed that good supports can change clinical practice, such as the use of a special radiograph requisition form that allowed only guideline-appropriate indications, which led to a 36.8% reduction in lumbar spine imaging , and the addition of short educational messages to all reports of lumbar spine MRIs reduced imaging rates by 22.5% . This review describes the recent guidelines of imaging for LBP and updates the available evidences on relevance of degenerative spine abnormalities for LBP.ns (connecting muscle to bone), ligaments (connecting bone to bone) (Integrative pain medicine

Buckwalter et al. (1993) has also been suggested that metabolic disorders may be detrimental, combined with its co-morbidities of diabetes and hypertension may alter the pathophysiology of diseases of the tendons and ligaments during the process of aging thus potentially leading to LBP. Intervertebral discs begin deteriorating and growing thinner by age 30 and increases the risk for disc herniation. As people continue to age.

Pain in the lower back area that can relate to problems with the lumber spine, the discs between the vertebrae, the ligaments around the spine and discs, the spinal cord and nerves, muscles of the low back, internal organs of the pelvis and abdomen, or the skin covering the lumbar area.

LBP is one of the commonest cause of disability in the working population. Disability due to LBP has been defined as restricted functioning, involving limitation of activities and restriction of participation in life situations. Disability usually accompanies LBP, varies in extent and will be temporary or perhaps permanent. (Waddel, 2004).

In the International Classification of Functioning (ICF), the emphasis was changed to activity and activity limitation meaning difficulty in the performance, accomplishment, or completion of an activity. Difficulty in the performing activities occur when there is a qualitative or quantitative alteration in the way in which

activities are carried out. Difficulty encompass all the ways in which the doing of activity may be affected (WHO, 2001).

LBP is one of the commonest cause of disability in the working population. Disability due to LBP has been defined as restricted functioning, involving limitation of activities and restriction of participation in life situations. Disability usually accompanies LBP, varies in extent and will be temporary or perhaps permanent. (Waddel, 2004).

Low back pain is one of the most common reasons for an outpatient visit. The evaluation for low back pain should include a complete, focused medical history looking for red flags, which include, but are not limited to: severe or progressive neurologic deficits (e.g., bowel or bladder function), fever, sudden back pain with spinal tenderness, trauma, and indications of a serious underlying condition (e.g., osteomyelitis, malignancy). It is also important to rule out nonspinal causes of back pain, such as pyelonephritis, pancreatitis, penetrating ulcer disease or other gastrointestinal causes, and pelvic disease. Fractures are an uncommon cause of back pain; they are associated with risk factors such as osteoporosis and steroid use.

Back pain is one of the most common conditions for which patients seek out medical advice. Greater than "85% of patients who present to primary care have low back pain that cannot reliably be attributed to a specific disease or spinal abnormality" (Chou et al., 2007, p. 479). Non-specific low back pain (LBP) is usually "benign and self-limiting" (Jarvik&Deyo, 2002, p. 586); however, occasionally serious conditions can be the cause. Thus, the job of healthcare practitioners is to determine if serious conditions are plausible and if imaging is warranted. Over-imaging of LBP has long been identified as a problem across the medical profession (Chou et al., 2011; Flynn, Smith, & Chou, 2011).

Due to the high costs associated with LBP, multiple agencies worldwide have funded and researched a solution to the growing problem (Davis et al., 2009). The Quebec Task Force on Spinal Disorders was one of the first studies to investigate the issue in 1987 (Atlas et al., 1996). The purpose of this literature review is to determine how

over-imaging of LBP can be avoided and promote evidenced-based Nurse Practitioner (NP) practice. While identifying and providing a definitive diagnosis for patients may seem like the best care management, imaging can cause more harm than good. Researchers have consistently identified abnormal findings in asymptomatic patients, yet imaging is still being ordered to diagnose the cause of non-specific LBP. Imaging of LBP should be driven by history and physical examinations, as skillful exams can identify the vast majority of patients who do not require imaging (Jarvik&Deyo, 2002). Despite multiple clinical guidelines that aim to aid practitioners in the diagnosis, treatment, and management of LBP, imaging of LBP has continued to rise even though evidence substantiates that it is not associated with improved patient outcomes (Flynn et al., 2011). Patient education is important to ensure there is shared.

Most patients with radicular symptoms will recover within several weeks of onset. The majority of disc herniations will regress or reabsorb within eight weeks of onset. In the absence of progressive neurologic deficits or other red flags, there is strong evidence to avoid CT/MRI imaging in patients with non-specific low back pain.

Studies have shown that patients with no back pain often show anatomic abnormalities on imaging.Risks associated with routine imaging include unnecessary radiation exposure and patientlabeling.The labeling phenomenon of patients with low back pain has been studied and shown to worsen patients' sense of well-being. In addition studies have linked the increase rate of imaging with the increase rate of surgery. A study by Webster et al showed that patients with occupation-related back pain who had early magnetic resonance imaging (MRI) had an eightfold increased risk of surgery.A study by Jarvik et al showed that patients with low back pain who had an MRI were more than twice as likely to undergo surgery compared with patients who had plain film imaging.

A medical history provides major clues to a potential diagnosis. Up to 85% of patients cannot be given a definitive diagnosis because of weak associations among symptoms, pathological changes, and imaging results. Diagnosis consists of physical examination and laboratory investigation.There are mainly x-ray examination is prominent to relate between patient complain and low back pain.Low back pain patient diagnosis and treatment depend on x-ray radiological findings.That is very important for treatment and assessment of LBP patient.

The lumbar pain is relatively easier to diagnose than pelvic pain. Pain on palpation of paraspinal muscles, hypo mobility and weakness in the back signifies muscle insufficiency in the lumbar spine. There could also be decrease range of motion of lumbar spine, with pain reproduced on lumbar flexion (Cart, 2010). Besides these some special test should be done, these special tests include: X-rays.

3.2 Study design

Target of this study to correlate the radiological findings and patient complain of low back pain patient..For this reason, here chooses a cross sectional survey study because that was the best way to determine correlation.

3.2 Study area

Data was collected from the outpatient, Musculoskeletal Physiotherapy unit of Centre for the Rehabilitation of the Paralysed (CRP), Savar. Because these patients are come to CRP from all over the Bangladesh from all economic groups for comprehensive rehabilitation, so it reflects the entire population.

3.5 Study sample

Musculoskeletal unit. For this study, the researcher was selected the participants who were suffering Sample selection depends on the research question or hypothesis and the researcher's choice of location and characteristics. The sample was collected from the centre for the rehabilitation of the paralyzed at from mlow back pain according to the inclusion and exclusion criteria.

Sample size

Sampling procedure for cross sectional study done by following equation-

Here

$$n = \frac{z2 \; p(1-P)}{d2}$$

$$\frac{1.96^2\{10(1-10)\}}{(.5)^2} = 1382.976$$

Here,Z=level of confidence

     P=Prevalence of LBP in Bangladesh

     d=precission

The actual sample size for this study was calculated as 1382.976,but due to large number of sample we take 50 sample for this study.included exclusion and inclusion criteria.

3.3 Study Population

A population refers to the entire group of people or items that meet the criteria set by the researcher. The populations of this study were chronic low back pain patients.

3.4 Method of data collection:

To conduct this study, the researcher was collected data through using different types of data collection tools. The researcher was used Orebro back pain Questionnaire for pain and functional activity measurement. Oswestry Low Back Pain Disability Questionnaire was used for disability measurement.

3.5 Data collection tools

The organized material was questionnaires, consent forms, paper, pen & a pencil. All questionnaires designed to conduct the interviews. Here took permission from each participant by using a written consent form in Bangla and English.

3.6 Measurement tools

3.7 Questionnaire

The questionnaire was developed under the advice and permission of the supervisor following certain guidelines. There were twenty close ended questions with numeric pain rating scale with some objective questions which were measured by examiner and each question was formulated to identify the pain with functional ability and Oswestry Disability Index Questionnaire for measures disability score.

3.8 Orebro Back Pain Questionnaire

The Orebro Back Pain Questionnaire has 20-item instrument to assess pain and functional ability. The inverting of some items such as chance working, light work, walk, household work, shopping and sleep that higher ratings always indicate higher levels of risk. Consequently, outcome for pain was assessed with items Average of pain and Frequency or episodes of pain. The outcome of function was assessed using the 5 activity items light work, walk, household work, Shopping and sleep. The each item was scored with 0-10. This questionnaire slightly modified for suitable this study. Scale extremities are labeled with specific words. For every specific question, the patient marks the point on the scale which represents his/her condition.

3.9 Oswestry disability Index

Oswestry disability index (ODI) was included 10 sections of questions. The ODI was domains the following: pain intensity, personal care, lifting, walking, sitting, standing, sleeping, Travelling and social life, Employment/Homemaking.

3.10 Data analysis

Data was analyzed with the software named Statistical Package for Social Sciences (SPSS) Version 22.0. Data will be numerically coded and captured in Microsoft Excel, using an SPSS 22.0 version software program. Microsoft Office Excel 2007 was used to decorate the bar graphcharts.

3.11 Informed Consent

The study and were free to withdraw their consent and terminate participation at any time. Withdrawal of participation from the study would not affect their treatment in the physiotherapy department and they would still get the same facilities. Every subject had the opportunity to discuss their problem with the senior authority or administration of CRP and have any questioned answer to their satisfaction.

The researcher obtained consent to participate from every subject. A signed informed consent form was received from each participant. The participants were informed that they have the right to meet with outdoor doctor if they think that the treatment is not enough to control the condition or if the condition become worsen. The participants were also informed that they were completely free to decline answering any question during

3.12 Ethical Consideration

Permission was taken from BHPI ethical committee for research project then permission was taken from the Member of LBP patient who had x ray report for data collection. The participants were explained the purpose and goals of the study.

3.13 Limitations

Regarding this study as below there were some situational limitation or barriers to consider the result of the study:

☐ The samples were collected only from the selected patient of LBP in CRP and the sample size was too small, so the result of the study could not be generalized to the whole population of Bangladesh.

☐ The research project was done by an undergraduate student and it was first research project for her. 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 honorableteacher.

CHAPTER-4:	RESULTS

This study was done or analyzed by the SPSS 22.0 and variables into three main categories like as socio demographic,life style related,posture and working postion related.

Socio demographic variables include the information about age, gender, marital status, religion educational status, family type, living areas, occupations and family income. Life style related variables include the information of smoking, health status, regular physical status, sleeping posture, sleeping period, sleeping mattress, and BMI. Work related variables containing information of postural status, lifting heavy object, employment period, episodes of back pain, back injury and back surgery etc.

4.1 Percentage of Gender

Among all participents In this survey we can see that more then 66.7% male <60% like 68% and female 31% of Low back pain patient.

Gender of the participants

Among 50 participants 68 %(n=31) were male and 32 %(n=19) were female.

From the above pie chart we can easily realize that both male and female patients came with low back pain. There was tendency for more men to report low back pain than women, but this difference generally was not statistically significant .This pie chart shows that 50participants were collected by using purposive sampling.
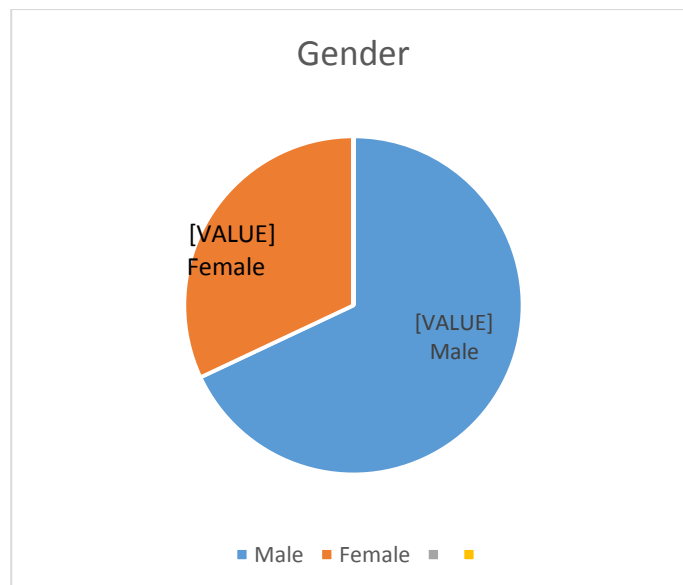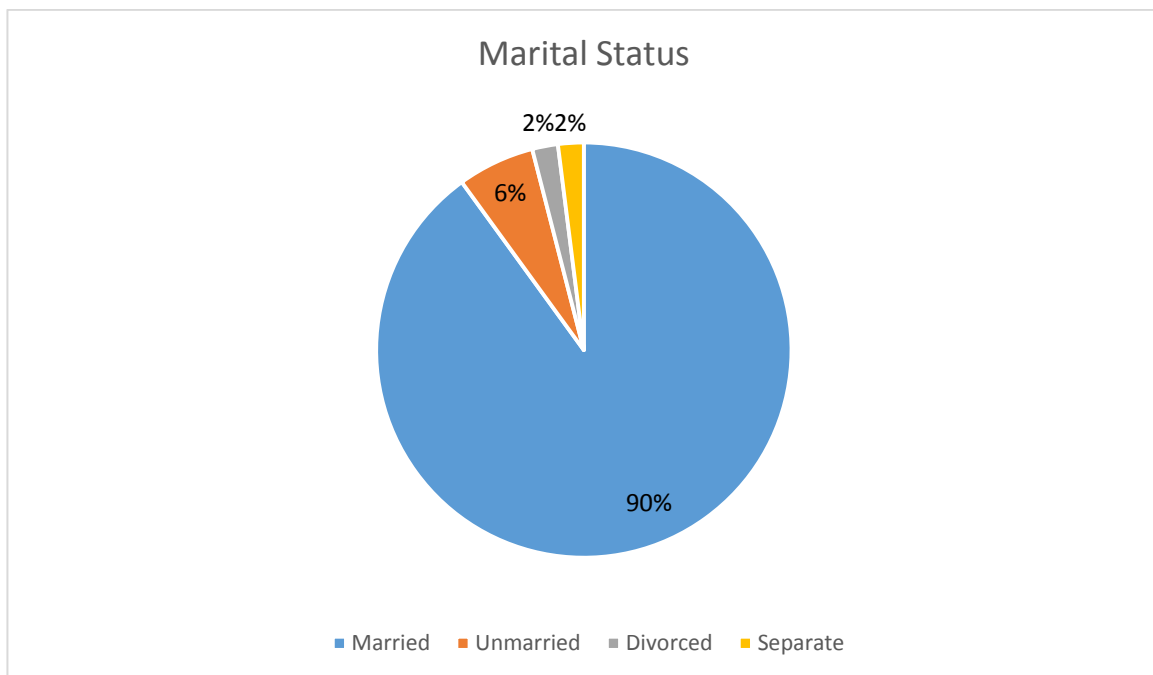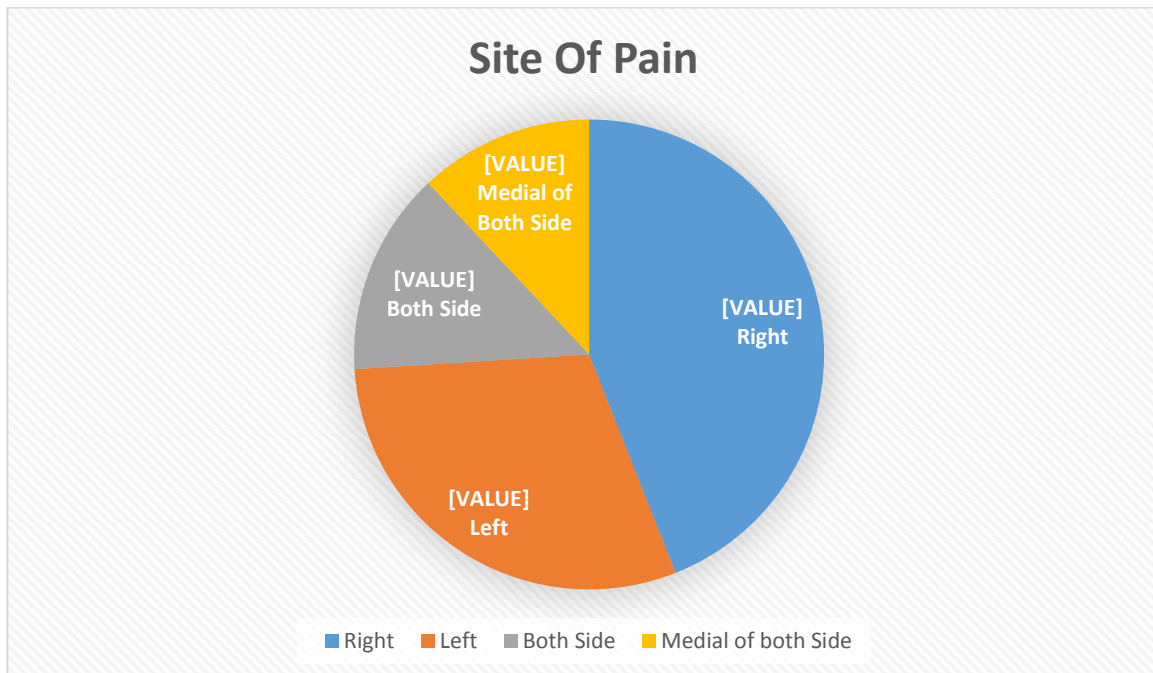

Figure-1: male & female percentage of the participants

Marital status

Among 50 particpents most of the patients were married 90%(n=45)Followed by unmarried 6%(n=3),Seperated 2%(n=1),Divorced 2% (n=1)

Site of the pain of patients

Among 50participents left side pain 30%(n=15),right side 44%(n=22),Medial of both side 12%(n=7),both side pain 14%(n=6)

Site Of Pain

[VALUE]
Medial of
Both Side

[VALUE]
Both Side

[VALUE]
Right

[VALUE]
Left

■ Right ■ Left ■ Both Side ■ Medial of both Side

Radiological view of patient X-ray report

Among 50 participents, Large(36cm) sacral perinural cyst 4%(n=2), Imaged pre &pera-vertibral soft tissue appear normal 4%(n=2),Lumber spondylosis 12%(n=6), Osteoarthitic changes in vertrbrae 10%(n=5), Degenerative signal change is moted involving L3-L4, L4-L5 & L5-S1 discs 22%(n=11) variable disc desiecations are noted at multiple levels 4%(n=2), Degenerative changes noted at lumber spine 4%(n=2), The lumber lordosis is straightened 10%(n=5) Degenerative disc disease 4%(n=2),Broad based disc herniation at central and paracentral L4 –S1 levels causing mild thecal sac indentation 26%(n=13).
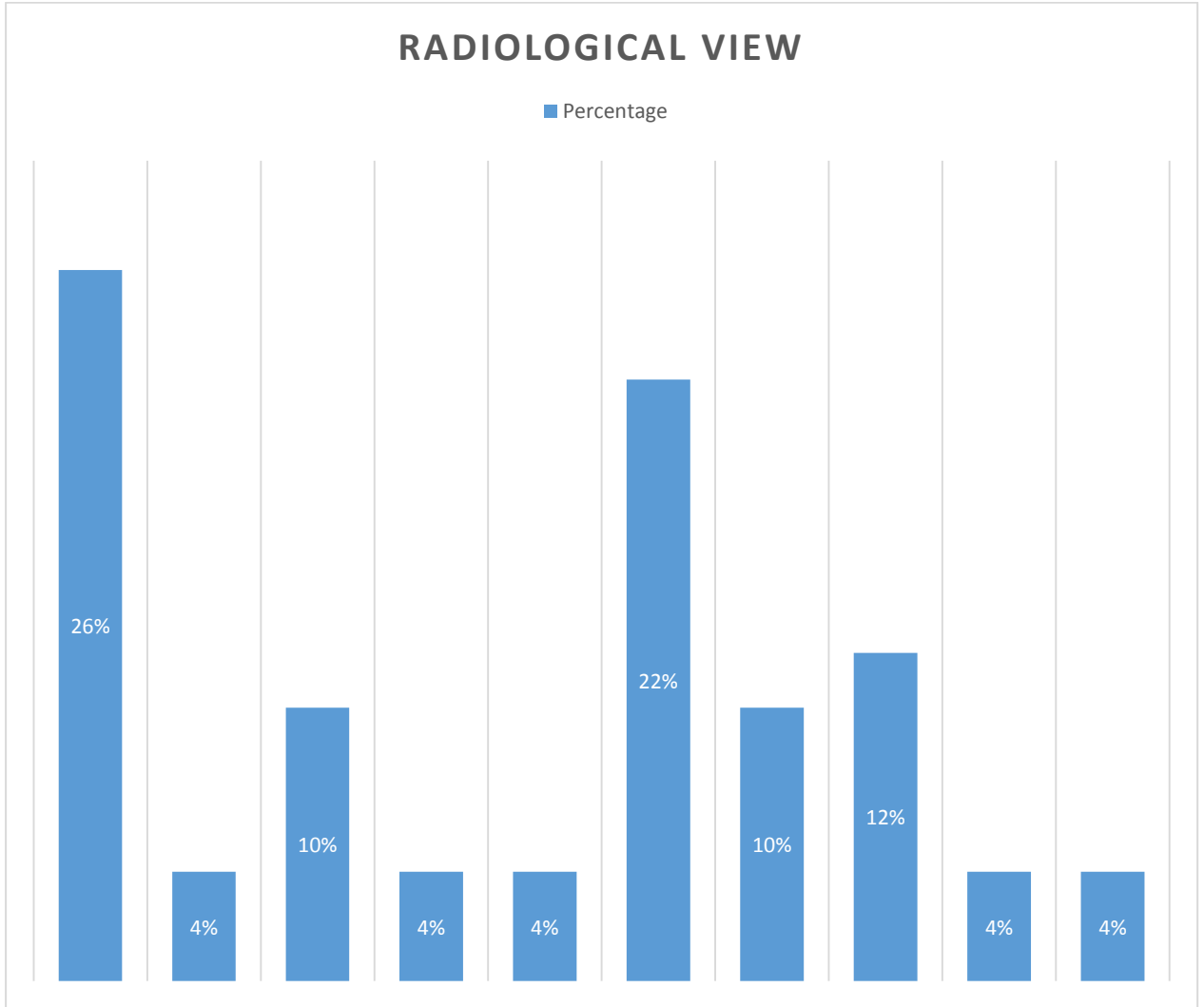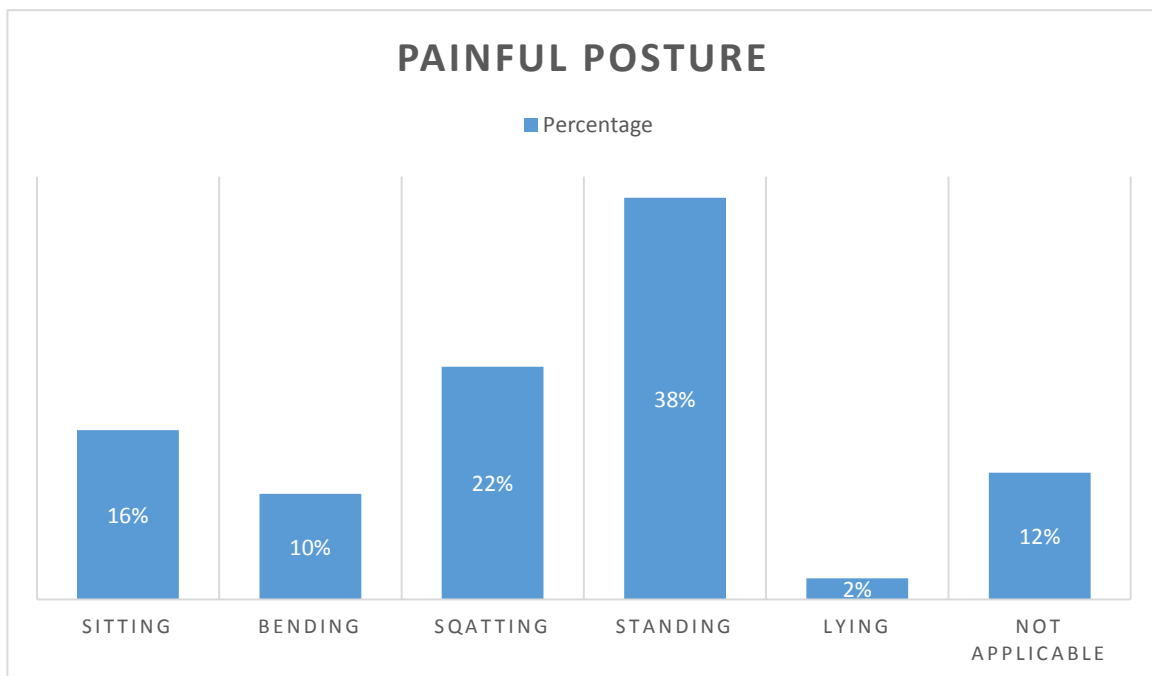
Figure:Radiological view of patient (X-ray)

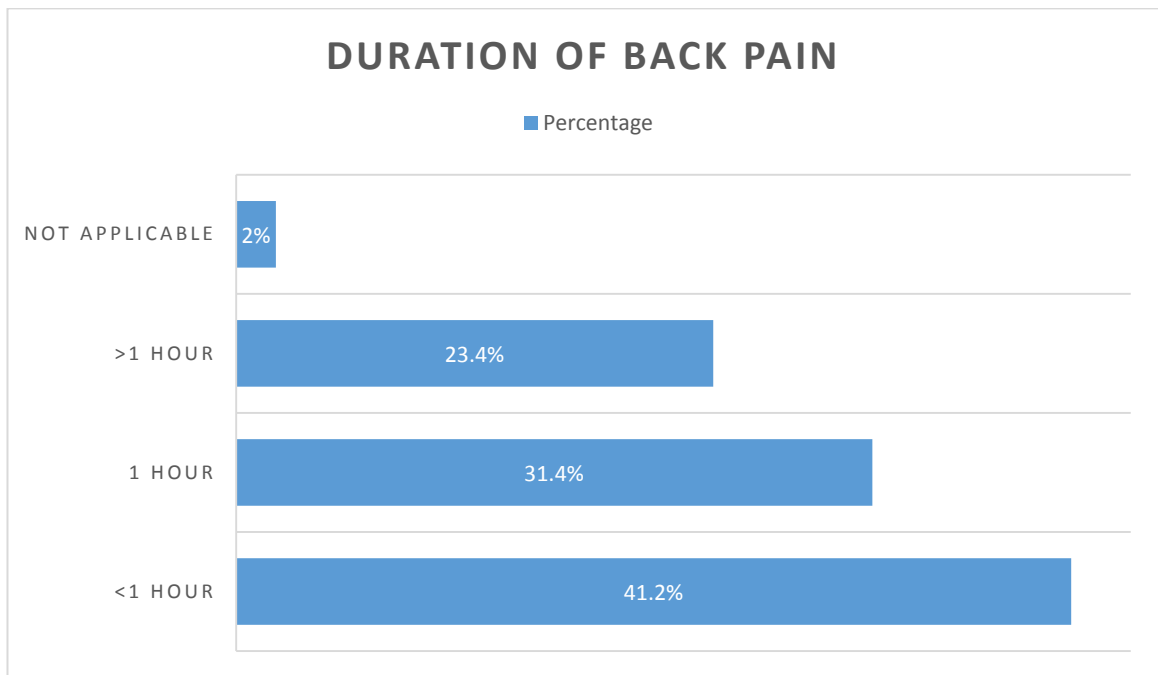| | | Gender of the participant's | | |
		female	male	Total
Radiological view of the participant's	Central & both paracentral disc bulging at L5-S1 level with corresponding bilateral nerve root compression	5	8	13
	Degenerative disc disease	0	2	2
	The lumber lordosis is straightened	3	2	5
	Degenerative changes noted at lumber spine	0	2	2
	variable disc desiecations are noted at multiple levels	2	0	2
	Degenerative signal change is moted involving L3-L4, L4-L5 & L5-S1 discs	1	10	11
	Osteoarthitic changes in vertrbrae	2	3	5
	There is mild left paracentral disc bulge resulting anterior thecal sac indentation	2	4	6
	Imaged pre &pera-vertibral soft tissue appear normal	1	1	2
	Large(36cm) sacral perinural cyst	0	2	2
Total		16	34	50

Which posture patient or participents feel tha pain most

Among the participants who affected low back pain Mean was 3.36,standard deviation was 1.481 and mode .At standing 38%(n=19), sitting 16%(n=8),Bending 10%(n=5),Lying 12%(=6),Squating 22%(n=11),

**PAINFUL POSTURE**

■ Percentage

SITTING	BENDING	SQATTING	STANDING	LYING	NOT APPLICABLE
16%	10%	22%	38%	2%	12%

Duration of back pain

Among 50 participents,the participant of patient not applicable 2%(n=1),greater then one hour 23.4%(n=12),less then one hour 41.2%(n=21),Exackt or up to one hour 31.4%(n=16).
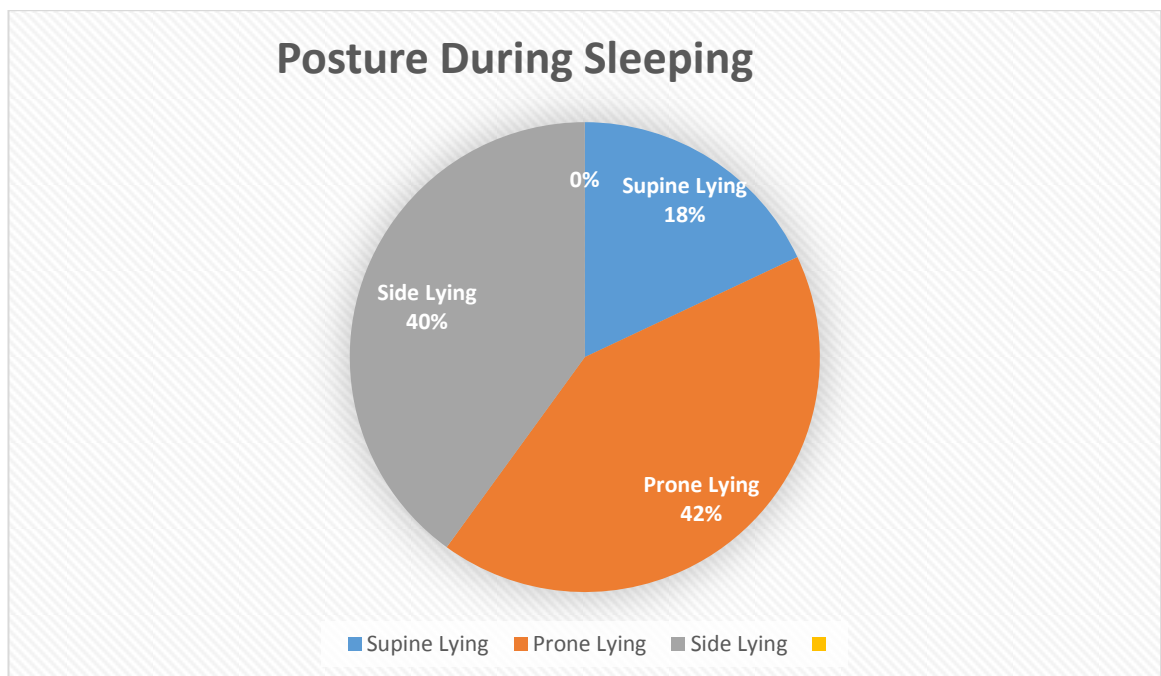
Pain during work time

Among the participents who affected low back pain and complain they are feel pain during work time that yes 24%(n=

Pain During Work Time

0, 0%

[VALUE]
No

[VALUE]
Yes

Yes   No   ▪   ▪
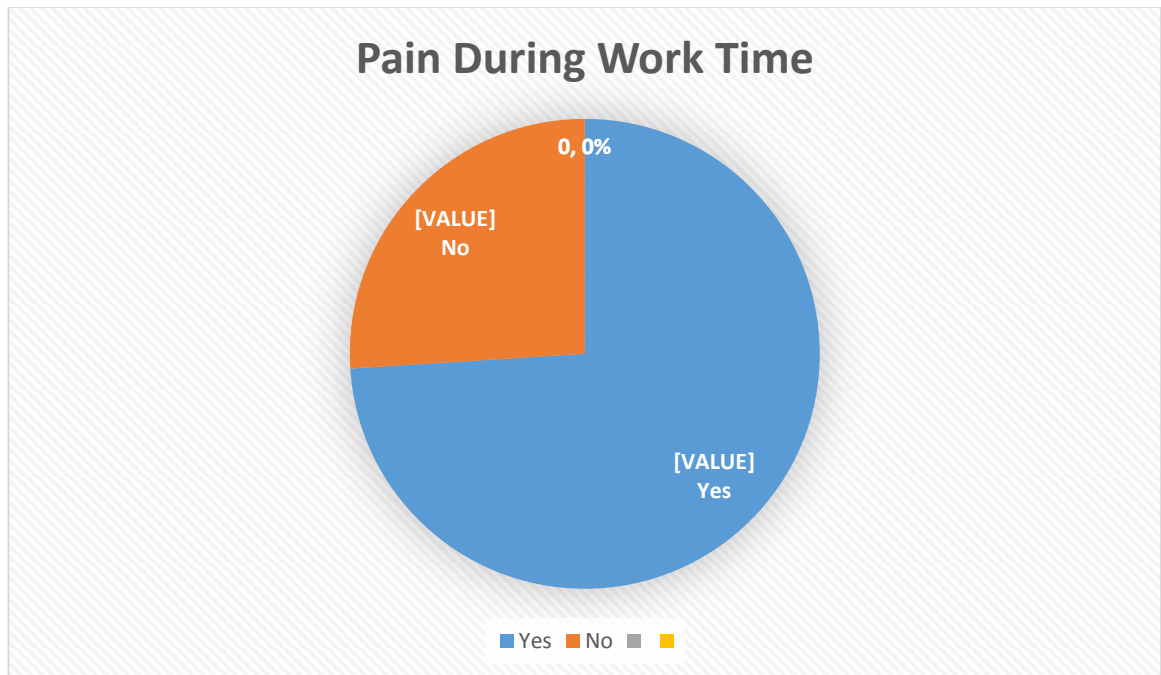
Posture during Sleeping

Among the low back pain patient who were participant this study,40%9(n=20)patients sleeping lying,supine lying pattern 18%(n=9),and prone lying were 42%(n=21).

When participate notice Pain

Here patients were 50 who had affected by low back pain.In which paient notice pain during work time was 46%(n=23),after work 32%(n=16),During rest 20%(n=10).and no pain patient percentage was 2%(n=1).
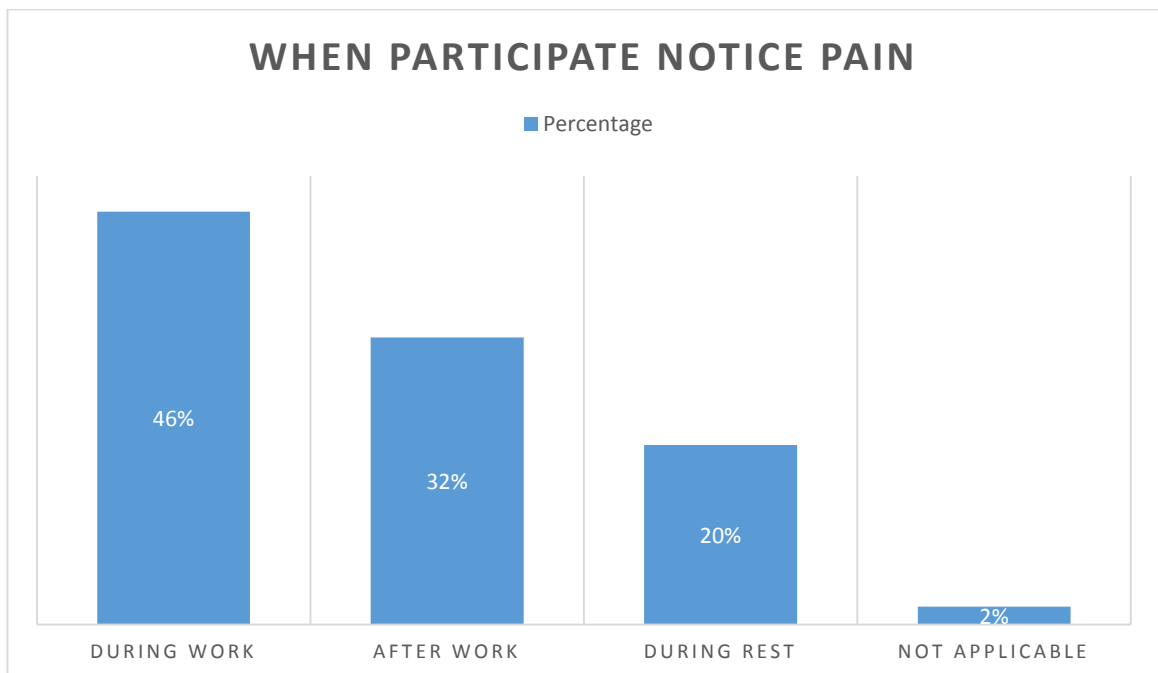
Type of Mattress use during sleep
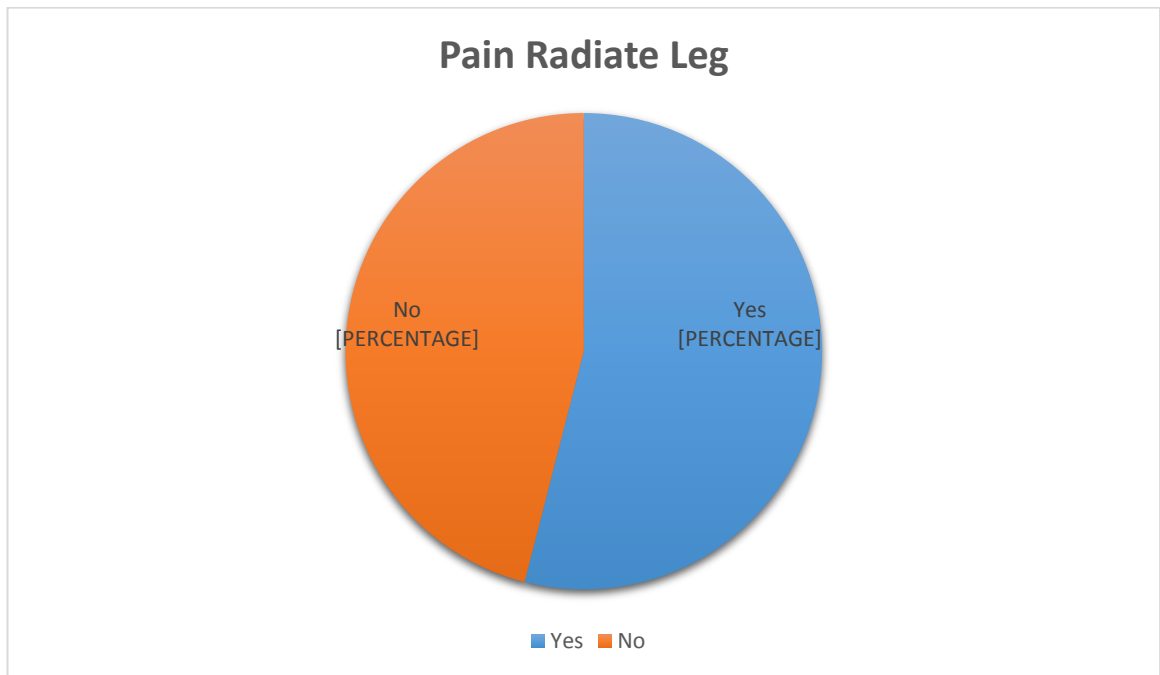
Among 50 participent or patients of low backpain.they were 82% (n=41)usedFirn/normal mattress,14%(n=7) patient used soft/cushioned Matress,and 4%(n=2)were used wooden/Hard bed.
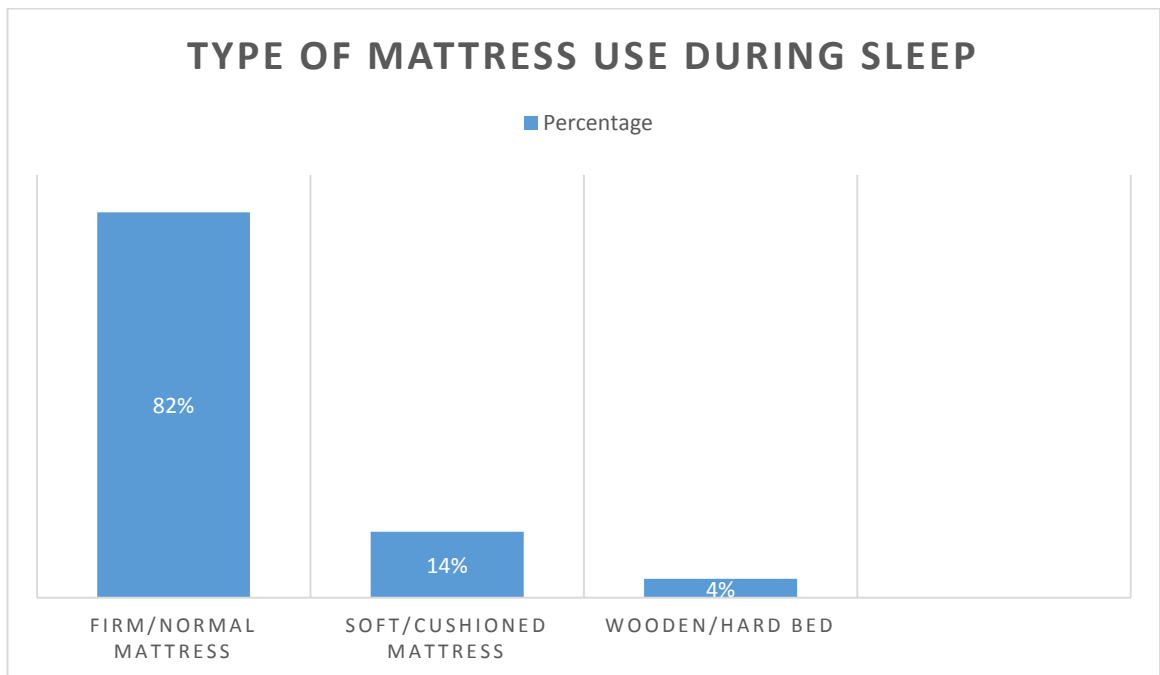
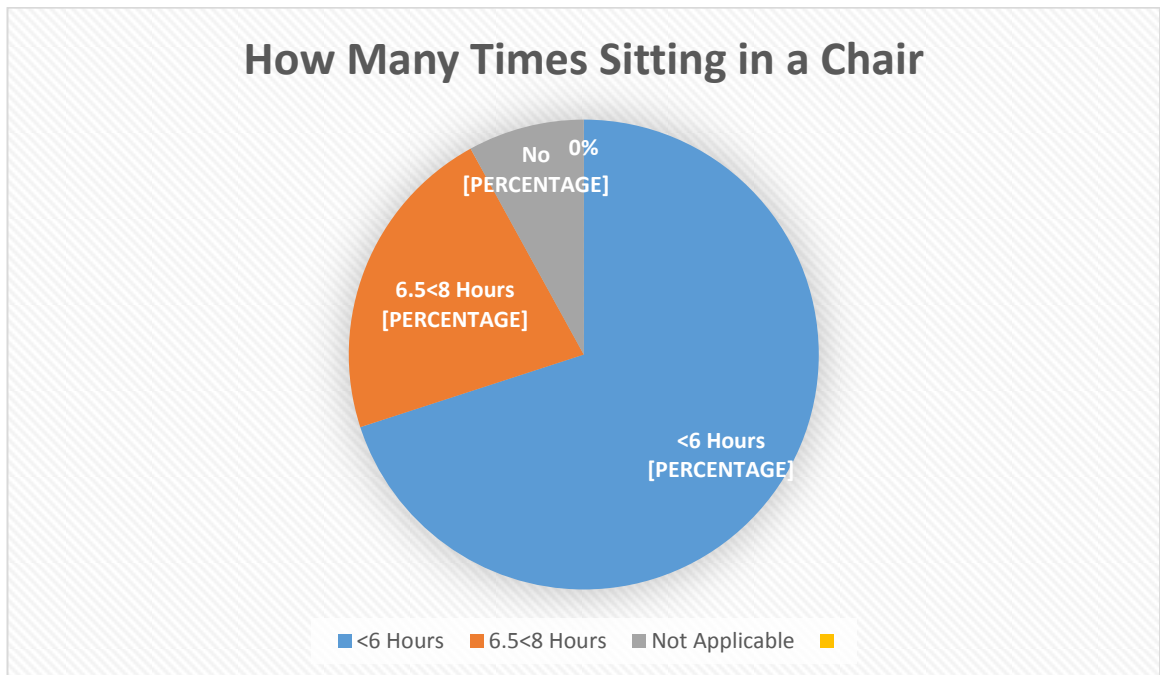## Pain Radiate leg

This study shows that 46%(n=23) of patient had no radiated pain and 54%(n=27) had radiate the pain to the leg.

Pain Radiate Leg

No
[PERCENTAGE]

Yes
[PERCENTAGE]

■ Yes ■ No

How many times patients sitting in a chair

50 low back pain patients had less then 6 hour was 70%(n=35),more then 6 hour or between 6.5 and 8 hours was 22%(n=11).

Pain severity on neumeric scale

Pain measurement scale is neumeric shows that(1-3) mild pain of low back pain patient 2%(n=1),(4-6)moderate pain was 54%(n=27),and(7-10) severe pain was 44%(n=22).

PAIN ON NUMERIC SCALE

■ Percentage

54%	44%
2%	
MILD PAIN(1-3)	MODERATE PAIN (4-6)	SEVERE PAIN (7-10)
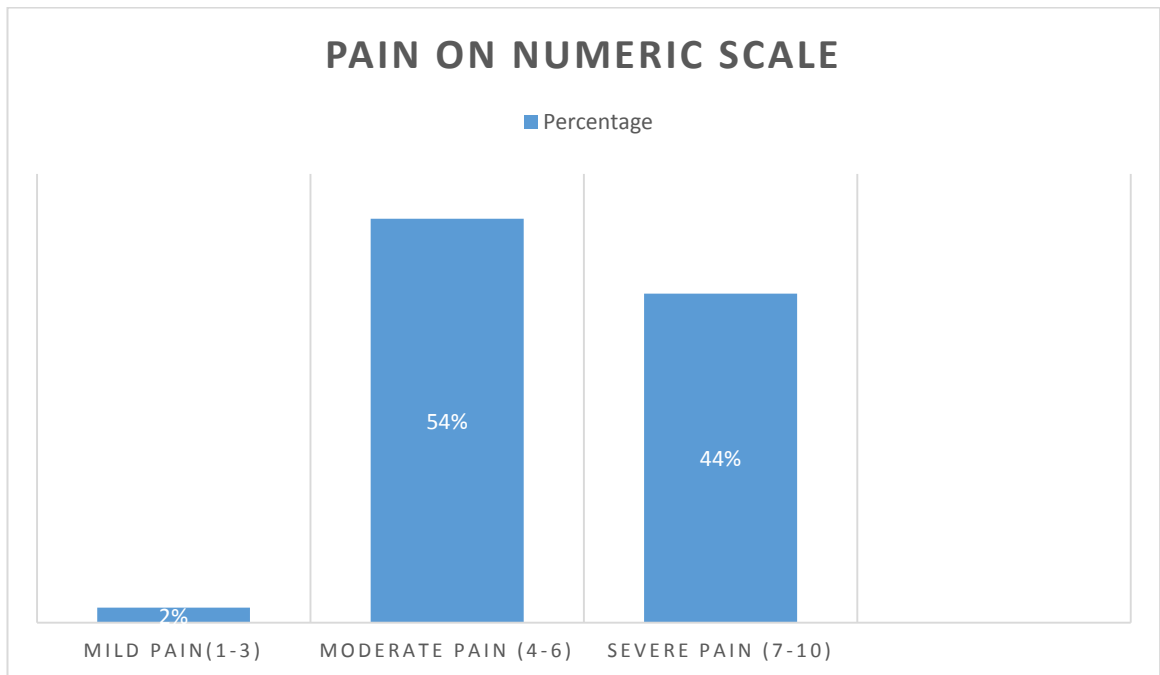
Suffering Duration of patients

Among the 50 patient of this study less then 6 month 42%(n=21),more then 6 month but less then 1 year 42%(n=21),more then 1 year was 16%(n=8).
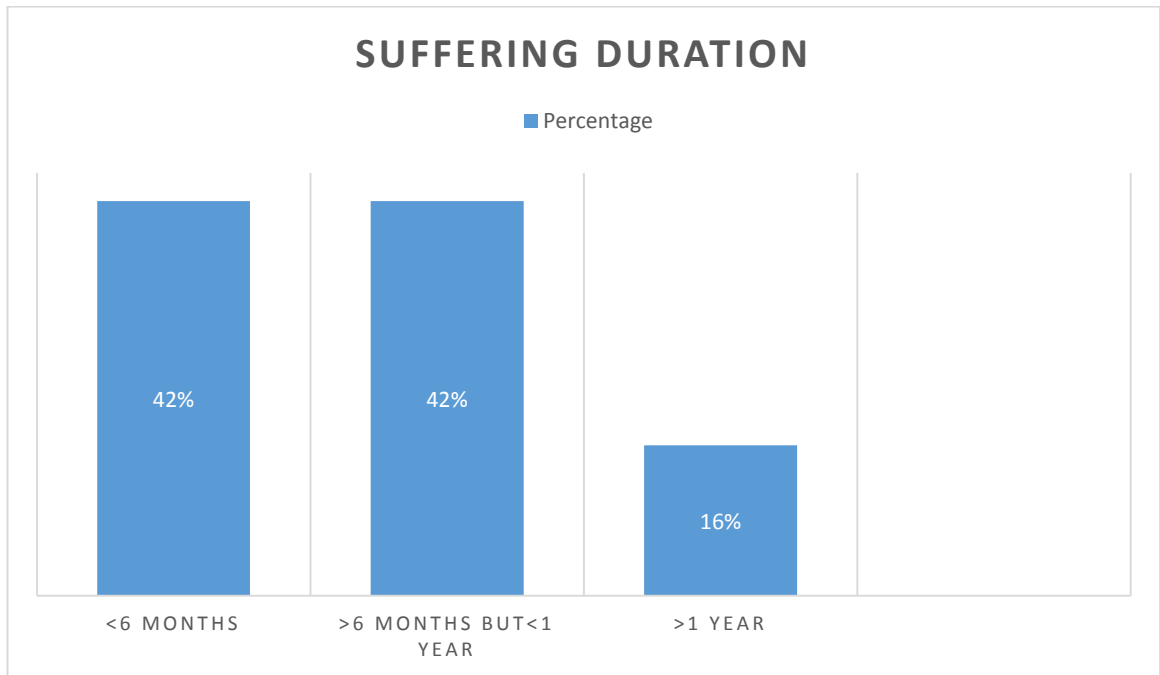
Smoking of patients

Affected people of low back pain current smoker of participents32%(n=16),Ex-smoker 16%(n=8),and never smoked 52%(n=26).

Do The Participant's Smoke

0%

Current Smoking
[PERCENTAGE]

Never Smoked
[PERCENTAGE]

Ex-Smoker
[PERCENTAGE]

■ Never Smoked ■ Ex-Smoker ■ Current Smoking ■
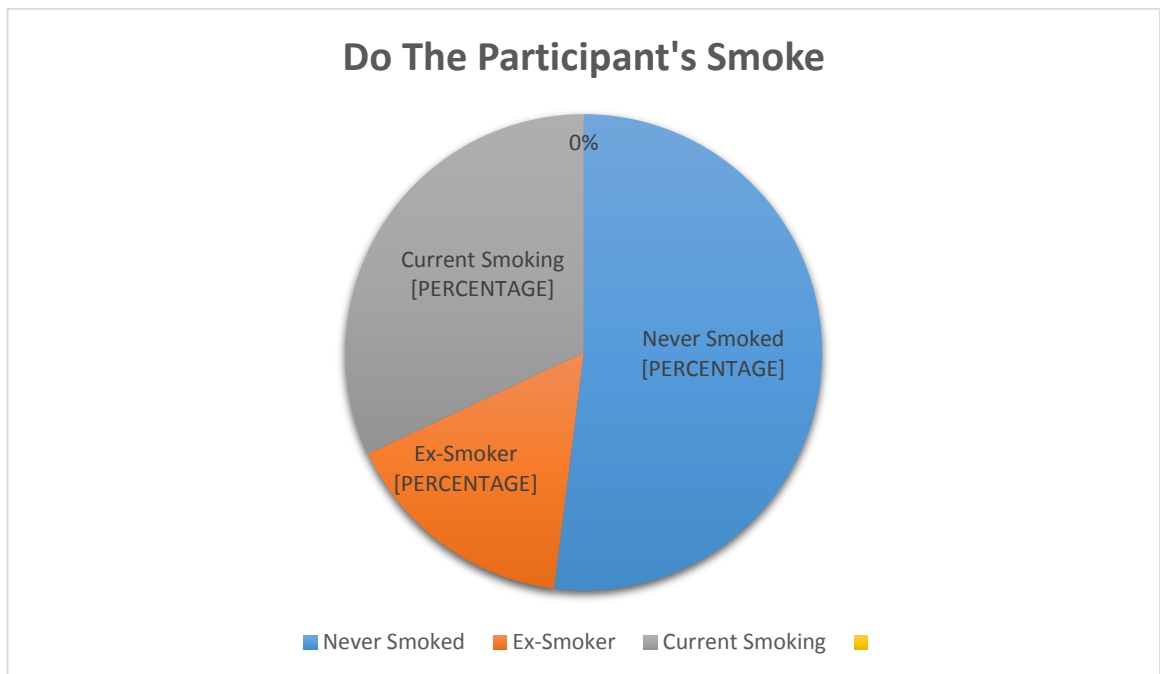
Response of pain during heavy weight lifting

Among the 50 participants, Yes 25.5%(n=13),No 37%(n=72.5%)feel pain during heavy weight lifting.

Pain during heavy weight lifting	Number	Percentage
Yes	13	25.5%
No	37	72.5%
Total	**50**	**100%**

Table-: Response of pain during heavy weight lifting

Behavior of pain

Among the affected participants who were suffering from LBP, 60.8% (n=31) participants felt occasional, 29.4% (n=15)felt intermittent and 7.5% (n=4) felt constant LBP.

Behavior of pain	Number	Percentage
Occasional	31	60.8%
Intermittent	15	29.4%
Constant	4	7.5%
Total	**50**	**100%**

Table: Behavior of pain among the participant

Do You have Diabetes

Patient who had suffering low back pain.among them which were participate there ,25.5% (n=13) were affected by diabetes and 72.5%(n=37)who had no diabetes.

Patients have diabetes	Number	Parcentage
Yes	13	25.5%
	37	72.5%
No		
Total	**50**	**100%**

Occupation of the patients

Result showed that among 50 participant who had low back pain 5.9% (n=3) were farmer, 2% (n=1) were driver, 23.5% (n=12) were businessman,2% (n=1) were day laborer, 2% (n=1) were unemployed, 21.6% (n=11) were house wife, 9.8% (n=5) were teacher and 3.9% (n=2) were employed.

And among the 34 participants 41.2 % (n=14) were farmer, 5.9% (n=2) were driver, 2.9% (n=1) were businessman, 5.9% (n=2) were day laborer, 0% (n=0) were unemployed, 20.6% (n=7) were house wife, 11.8% (n=4) were teacher, 11.8% (n=4) were employed.

Occupation	affected participants (n=34)	
	Number	Percentage
Farmer	3	5.9%
Factory/Garments worker	6	11.8%
Driver	1	2%
Businessman	12	23.5%
Day laborer	1	2%
Unemployed	1	2%
House wife	11	21.6%
Teacher	5	9.8%
Employed	2	3.9%
Total	**50**	**100%**

Table-: Occupation of the participants

Educational level

Among the 50participants having LBP, 3 participants had less than primary school, 24 participants completed primary education, 14 participants completed SSC, 13 participants completed HSC, 9 participants completed Graduate, and 3 participants had masters completed.. The study shows that most of primary completed people affected because ;ackings of awereness.

Educational status	Number	parcentage
Less then primary school	5 5	9.8% 9.8%
Primary complited	14 13	27.5% 25.5%
SSC completed	9 3	17.6% 5.9%
HSC completed	1	2%
Graduated Completed		
Masters Completed		
Others Completed		
Total	**50**	**100%**

CHAPTER-5:	DISCUSSION

The researcher aim was to explore the characteristics of mechanical low back pain among the patients attending 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, sub acute or chronic type mechanical low back pain by a categorized variable outcome that are socio demographic, lifestyle related and posture & work related.

Low back pain (LBP) has a prevalence of 84% in Africa. The commonest form of imaging is plain lumbar spine x-ray. It gives a radiation dose equivalent to 65 times a chest x-ray dose and sends one of the highest doses to the human reproductive organs. The commonest cause of LBP in Africa is degenerative disease. X-ray findings do not change mode of treatment yet most physicians still routinely request for x-rays.

he above situation of over utilization of lumbar spine x-rays for all low back pain by physicians is not any different in African countries like Ghana. Since the prevalence of low back pain in Africa has gradually increased over the years, its management including investigations should be well structured to prevent improper diagnoses, incorrect treatment and hence pressure on the already constrained health care resources in Africa. This review therefore seeks to evaluate guidelines on the use of lumbar spine x-rays as an investigational tool for all low back pain, comparing it to existing guidelines in Ghana.

Radiographic evaluation of LBP plays an important role in the management of patients even when its yield is reputed to be low. Common causes of LBP are muscular and ligamentous injuries and age-related degenerative processes in the intervertebral disks and facet joints. Other problems include spinal stenosis and disk herniation. Acute mechanical pain accounts for over 90% of the causes of LBP.

Disc degeneration occurs from a variety of contributory factors. Apoptosis, collagen abnormality, aging, vascular supply anomaly, mechanical stress, inflammation, abnormal proteoglycan and possible genetic factor all contribute to disc degeneration.

Intervertebral disc degeneration is known to herald osteophytosis by increasing flexibility between the vertebral bodies and consequent mechanical stress on the ossification centers of bones under the cartilage of the vertebral body leading further to sclerotic or hyperplastic changes at the edge of the vertebral body (osteophytes). These osteophytes help in the stabilization of the spine. Osteophytes are age-related phenomenon occurring with increasing frequency with advancing age. This study shows a strong correlation between advancing age and osteophyte formation. Watanabe *et al*[15] documented that the size of osteophyte increases with advancing age, thereby increasing the likelihood of exit foramina impingement by osteophytes with advancing age with consequent LBP and neurological deficit.

Anterior osteophytes are more common than lateral and posterior osteophytes. This is because the anterior part of the vertebral body is the most mobile and therefore the most unstable part of the vertebrae.

The standard, conventional radiographic views obtained when a patient has hip pain from osteoarthritis are the anteroposterior (front-to-back) and lateral (outer side) view. At Hospital for Special Surgery, a view of the pelvis is usually ordered as part of the initial examination to visualize other potential sources of hip pain, such as the low back or sacroiliac joints.
Positioning for these views is very specific, as reproducibility is invaluable to follow progression of the condition, response to treatment and/or for preoperative planning.

Optional radiographs are obtained fairly routinely by HSS joint replacement surgeons. They include the Lowenstein lateral, cross-table lateral, false-profile and elongated femoral neck views. All of these help to identify the precise site where early joint space narrowing/or bony changes occur and are either responsible for, or secondary to, osteoarthritis.

Degenerative changes are commonly found in spine imaging but often occur in pain-free individuals as well as those with back pain. We sought to estimate the prevalence, by age, of common degenerative spine conditions by performing a systematic review studying the prevalence of spine degeneration on imaging in asymptomatic individuals.

CHAPTER-6:   CONCLUSION &RECOMMENDATIONS

There is strong evidence indicating very little benefit from routine lumbar spine x-rays for all LBP. Low back pain is a very common musculoskeletal condition in the developing country where Bangladesh is not out of range. Everyday a lot of patients of low back pain come to the physician's. Of them, most suffered from mechanical deformation of the spinal musculoskeletal structures, caused by a enormous surrounding factors whether it may low socioeconomic condition, harder labour activity, inadequate nutrition, lack of physical strength, prolong abnormal postural habit, lifting of heavy loads, stressful occupations, inadequate resting periods, recurrent number of back pain and sudden direct trauma by fall from height, fall of heavy objects, fall on slippery floor, road traffic accident or the normal aging process may precipitating factors for low back pain. This study concluded that similarity between radiological finfingsspecially x ray report and patient complain of LBP.

So we shows that Large(36cm) sacral perinural cyst 4%(n=2), Imaged pre &pera-vertibral soft tissue appear normal 4%(n=2), There is mild left paracentral disc bulge resulting anterior thecal sac indentation 12%(n=6), Osteoarthitic changes in vertrbrae 10%(n=5), Degenerative signal change is moted involving L3-L4, L4-L5 & L5-S1 discs 22%(n=11) variable disc desiecations are noted at multiple levels 4%(n=2), Degenerative changes noted at lumber spine 4%(n=2), The lumber lordosis is straightened 10%(n=5) Degenerative disc disease 4%(n=2), Central & both paracentral disc bulging at L5-S1 level with corresponding bilateral nerve root compression 26%(n=13)

Imaging findings of spine degeneration are present in high proportions of asymptomatic individuals, increasing with age. Many imaging-based degenerative features are likely part of normal aging and unassociated with pain. These imaging findings must be interpreted in the context of the patient's clinical condition.

Low back pain has a high prevalence in industrialized countries, affecting up to two-thirds of adults at some point in their lifetime.[1] Back pain is associated with high

health care costs and has substantial economic consequences due to loss of productivity from back pain–associated disability.[2] Advanced imaging (X-ray) is increasingly used in the evaluation of patients with low back pain.[3] Findings such as disk degeneration, facet hypertrophy, and disk protrusion are often interpreted as causes of back pain, triggering both medical and surgical interventions, which are sometimes unsuccessful in alleviating the patient's symptoms.[4] Prior studies have demonstrated that imaging findings of spinal degeneration associated with back pain are also present in a large proportion of asymptomatic individuals.

Given the large number of adults who undergo advanced imaging to help determine the etiology of their back pain, it is important to know the prevalence of imaging findings of degenerative disease in asymptomatic populations. Such information will help both clinical providers and patients interpret the importance of degenerative findings noted in radiology reports. The aim of this study was to systematically review the literature to determine the age-specific prevalence of various imaging findings often associated with degenerative spine disease in asymptomatic individuals. We studied the age-specific prevalence of the following imaging findings in asymptomatic individuals: disk degeneration, disk signal loss, disk height loss, disk bulge, disk protrusion, annular fissures, facet degeneration, and spondylolisthesis.

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The recommendation evolves out of the content in which the study was conducted. The aim of study is to find out the predisposing characteristics of mechanical low back pain' therefore main recommendations 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.

For better understanding of orthopedic problems in elderly people, we conducted the present study and tried to investigate the relationship among pain characteristics, functional testings, physical activities, various parameter from radiographic examination, and social activities. The results revealed that the L1/L2, L2/L3, and L3/L4% disc heights had a significant relation to knee pain. And among the above discs, there was especially a strong relation between the L2/L3 disc height standardized by the L3 vertebral height and the medial knee space in this study.

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