



Faculty of Medicine

University of Dhaka

**Outcome of Physiotherapy Interventions among Patients
having Post-Surgical Lumbar Disc Herniation Attended at
CRP**

By

Kazi Md. Amran Hossain

Master of Science in Physiotherapy

Registration no: 866

Roll no: 119

Session: 2017-18



Department of Physiotherapy

Bangladesh Health Professions Institute (BHPI)

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Submitted in Partial Fulfillment of the Requirements for the
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We the undersigned certify that we have carefully read and recommended to the Faculty of Medicine, University of Dhaka, for acceptance of this thesis entitled, **“Outcome of Physiotherapy Interventions among Patients having Post-Surgical Lumbar Disc Herniation Attended at CRP”**, submitted by Kazi Md. Amran Hossain, for the partial fulfillment of the requirements for the degree of Master of Science in Physiotherapy.

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Declaration Form

- This work has not previously been accepted in substance for any degree and isn't concurrently submitted in candidature for any degree.
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List of Abbreviations or Symbols

BHPI	Bangladesh Health Professions Institute
CRP	Centre for the Rehabilitation of the Paralysed
ERC	Ethical Review Committee
FABQ	Fear avoidance belief questionnaire
IRB	Institutional Review Board
L 1-5	Level of lumbar vertebrae (number indicates level number)
LDH	Lumbar Disc Herniation
ODI	Oswestry low back disability index
PHQ	Patient health questionnaire
PLID	Prolapsed lumbar intervertebral disc
ROM	Range of movement
S 1	1 st Sacral vertebrae
SBI	Sciatica Bothersome index

Abstract

Background: Conservative approaches are evident to be gold standard management protocol for lumbar disc herniation (LDH), however surgery of LDH is essential in case of certain specification and failed cases of conservative care. As there is no multidisciplinary practice and existing evidence based guideline in the health sector in Bangladesh, referral to physiotherapy for LDH is limited. LDH cases are being treated with surgical approach very often and the post-surgical lumbar disc herniation cases are increasing with a predominance of recurrence within shorter duration.

Aim: The aim of the study is to determine the outcome of physiotherapy interventions in post-operative recurrent cases of lumbar disc herniation at CRP; a renowned rehabilitation centre in Bangladesh.

Methodology: A mixed study design has been applied, the quantitative analysis has been done by one arm prior and post experimental study design with hospital randomization. The qualitative analysis has been conducted by qualitative content analysis (QCA).

Results: From November 2018 to April 2019, 42 respondents were employed, and 30 were analysed for quantitative outcome determination; 6 participants by QCA prior to open ended recorded interview according to algorithmic process. Outcome of physiotherapy in ICF components has been evaluated through comparison of mean difference between pre and post-test evaluation complying statistical significance, 95% CI and effect size. Significant difference has been noted in body structure and functions by pain and disability; in current pain mean 3.63 ± 1.95 , 95% CI (2.92, 4.38), $P = .00$, effect size 1.86; highest pain state mean 4.23 ± 2 , 95% CI (3.47, 4.97), $P = .00$, effect size 2.11 and lowest state mean 2.44 ± 1.79 , 95% CI (1.78, 3.11), $P =$

.00, effect size 1.36. In disability ODI mean was 16.93 ± 7.53 , 95% CI (14.12, 19.76), $P = .00$, effect size 2.25. The respondents improved in activity limitations by FABQ fear due to pain mean 8.06 ± 3.87 , 95% CI (9.51, 11.39), $P = .00$, effect size 2.08, fear in work mean 11.53 ± 4.93 , 95% CI (6.61, 9.68), $P = .00$, effect size 2.33, and in total mean 21.36 ± 14.23 , 95% CI (16.05, 26.68), $P = .00$, effect size 1.50. There were changes in bothersome episodes in participation towards livelihood activities in leg pain ($z -2.838$, $P = .005$, $r = -.3$), leg paraesthesia ($z -4.51$, $P = .00$, $r = -.5$), Leg weakness ($z -4.06$, $P = .00$, $r = -.5$) and sit to stand ($z -3.86$, $P = .00$, $r = -.49$). The participants depression due to recurrence that has been reflected by personal factor in ICF had significant changes ($z -4.79$, $P = .00$, $r = -.6$) in post-test form baseline evaluation. In all the results the effect size was medium to large. The respondents had mixed responses regarding experience of surgery or Physiotherapy, but they admired physiotherapy as a cost-effective treatment approach and recommended to employ the treatment before the decision of surgery for person suffering from LDH.

Conclusion: Till now, this is the maiden study having mixed analysis of outcome for physiotherapy interventions in post-surgical cases of Lumbar disc herniation. The study found significant improvements in recurrent cases of LDH following surgery based on almost all of the parameters of International classification of functioning, disability and health (ICF) with larger impact. Implementation to the findings in imperial phases is recommended to elevate the disability adjacent life years in patients having LDH with or without surgery.

Key words: *Lumbar Disc herniation, Surgery, Physiotherapy, ICF*

1.1 Background

Low back pain is a prominent musculoskeletal condition that affects health and impacts upon social and economic status of any populations worldwide (Woolf & Pfleger, 2003). Hoy, Brooks, Blyth and Buchbinder (2010) avowed more than three fourth of global populations suffer low back pain anytime in their life. Petersen, Laslett and Juhl (2017) explored low back pain is manifested by several structural involvements of lumbosacral spine as, the intervertebral disc, facet joint, sacroiliac joint, spinal body and arches, neural tissues and surrounding soft tissues. Among all the structures, intervertebral disc is proven to be mostly responsible for creating compression to neural tissues causing pain and neurological impairments.

The term “Lumbar disc herniation” has been explained by Kreiner, et al (2014) as localized translation of disc content beyond the normal limit of the intervertebral disc space occurring pain, weakness, or numbness in a motor or sensory distribution. Junaid, Rashid, Afsheen, Bukhari and Kulsoom (2016) avowed the reason behind the phenomenon can be described as, the fibrous content of vertebral disc named annulus fibrosus undergoes some physiological and structural changes imposed by mechanical or degenerative causes leading to displacement. The level of displacement varies, however Fardon and Milette (2001) documented lumbar disc herniation transpires by displacement of disc material beyond limit and is the maximum predator causing lumbar radiculopathy.

The prevalence of back pain reported by numerous investigations validates the high recurrence of back pain in the general populations globally. 70– 85% of global

populations have back pain or associated events any episode at least once; throughout everyday life. The yearly pervasiveness of back pain varies from 15% to 45%, with point prevalence averaging 30%. In the USA, back pain is the most normal reason for movement impediment in individuals more youthful than 45 years, the second most continuous purpose behind visits to the physician, the fifth-positioning reason for admission to medical clinic, and the third most normal reason for surgery (Meucci, Fassa & Faria, 2015).

Diagnosing the extent of displacement and involvement of neural tissues depends upon several physical, radiological and clinical examinations. Poiraudau, et al (2001) and Rabin, et al (2007) revealed manual muscle testing, sensory examinations to subsequent lumbar and sacral nerve roots and straight leg raise is the preliminary diagnostic tools for disc herniation. In addition lasegue sign and crossed lasegue sign has been recommended. A strong recommendation for straight leg raise in lying has been avowed rather than sitting; subsequently emphasized on the cough impulse test, Bell test, hyperextension test, femoral nerve stretch test, slump test, lumbar range of motion, or absence of reflexes for diagnosing lumbar disc herniation with radiculopathy. Pfirrmann et al. (2004) explain there is a general scarcity of excellent examinations for patients having lumbar disc herniation. The assessment of the clinicians compiling patient's history, physical examination and radiological and imaging findings can contribute to diagnosis. Magnetic resonance imaging (MRI) is an investigation of choice to confirm the displacement of disc materials; for the patients where MRI is either contraindicated or on the other hand uncertain, Computed tomography (CT) or CT myelography can be prescribed to affirm the nearness of lumbar disc herniation.

Luchtman and Firsching (2016) stated indications of a lumbar disc herniation are low back pain and radicular symptoms, just as sensorimotor deficiencies. Moreover, in extreme cases a total transverse segment cauda equina disorder (CES) - might be noted including bladder, as well as sexual disorders.

Following diagnosis conventional management as medication, physical therapy and non-invasive interventions are considered as the gold standard treatment for lumbar disc herniation. Universal evidences support that, surgery should possibly be offered when the radicular pain and other symptoms in lower limbs remains despite a specific time of non-surgical management (Machado, et al., 2016).

The rate of surgeries varies according to geographical context, however rates of spinal surgery contrast crosswise over and inside countries. In the United States the rate of surgery are almost quarter of cent percent higher than in the Netherlands, 50 to 60% upper than in Canada, and 8 out of 10 higher than in the United Kingdom. Several studies suggests, Recovery from the surgeries are thought to be categorized in different manners, as rate of recovery after micro discectomy might be 66% at about a month, and 75% at about two months pursue up have been reported, and come back to work rates of 15% at 2 months follow-up (Rasmussen,et al., 2008). Recent reviews by Machado, et al. (2016) reflects, Patients with sciatica experience minimum to moderate dimensions of pain and impairments leading to disability that even 5 years after surgical procedure. Schoeggl, Reddy and Matula. (2003) reports up to 60% of patients underwent surgery reports troublesome clinical signs, complications and recurrences in lumbar disc herniation.

1.2 Justification

There is a scarcity of quality data either baseline or on prevalence on lumbar disc surgery in Bangladesh. The overall prevalence of low back pain is yet to be established reported to global consensus. Shakoor, Islam, Ullah, Ahmed and Hasan (2007) reported 102 patients of low back pain in a specialized medical university in Bangladesh having more than half women having such symptom and one third having lumbar radicular pain. Rahman, Uddin, & Ahsanulla (2008) stated distinguishing lumbar radicular pain and neurological sign clinical evaluation and MRI are a common interpretation among practitioners of Bangladesh now a days.

Though there are available local studies revealing MRI not be incorporated with clinical signs and extend of injuries or compression. Rahman, et al. (2016) from Bangobondhu Sheikh Mujib Medical University states, there remains opposing reports on the discoveries of MRI in lumbar intervertebral disc herniation.

Atlas, Keller, Wu, Deyo and Singer (2005) reviewed long-term results of surgical and conservative treatment for sciatica resulting from lumbar disc herniation for 10 years in accessible 477 patients; 217 (85%) patients treated surgically, and 183 patients (82%) treated conservatively. Patients experiencing surgical procedure had more extreme baseline indications and useful status than those at first treated conservatively. By 10 years, one fourth of surgical patients had experienced somewhere around one extra lumbar spine surgery, and one fourth of nonsurgical patients had somewhere around one lumbar spine operation. At 10-year study, 69% of patients at first treated surgically revealed improvement in short term versus 61% of those at first treated non-surgically with statistical significance. But in 10 years there was similar improvement of disability status in both group.

Another study by Bhuiyan, Bhuiyan, Sultana and Jahan (2019) reporting 75 cases of lumbar disc herniation operated by an orthopedic surgeon in majority of the level L5-S1. The study concluded significant reduction of radicular symptoms and disability after surgery but a more or less half of them provided excellent result after one year. In this study 8% of the respondent had complications and poorer outcome. There was no mention of rehabilitation management for the patients.

A review by Bangladesh College of Physicians and Surgeons (BCPS) avowed that no differences has been noted between conservative and surgical approaches in 2 years of initial incidence of sciatica. The surgery can be indicated in case of existence of symptoms for moreover 6-8 weeks despite of conservative treatment or major neurological involvement including cauda equina syndrome (Rahman, Uddin & Ahsanulla, 2008).

There was no relevant studies proving efficacy of physiotherapy interventions or conventional approaches in post-surgical PLID cases having related recurrence or complications in the country context in Bangladesh. Moreover, the global studies reports mixed responses on the efficacy but the client's perspective has yet been not taken into accounts. Hereby, the aim of the thesis is to evaluate the outcome of Physiotherapy interventions in post-surgical cases of lumbar disc herniation. The study will emphasize on the outcome of interventions as well as perception of the patients having post-surgical recurrence of PLID and their experiences receiving the Physiotherapy interventions.

1.3 Hypothesis of the Study for Quantitative Analysis

Alternative Hypothesis

Outcome of structured physiotherapy interventions are significant upon the impairments associated with biopsychosocial aspects in post-surgical lumbar disc herniation patients.

Null Hypothesis

Outcome of structured physiotherapy interventions are no longer significant upon the impairments associated with biopsychosocial aspects in post-surgical lumbar disc herniation patients.

Null Hypothesis

$H_0 = \mu_1 - \mu_2 = 0$ or $\mu_1 = \mu_2$, where the posttest and pretest initial and final mean difference is same.

$H_a = \mu_1 - \mu_2 \neq 0$ or $\mu_1 \neq \mu_2$, where the posttest and pretest initial and final mean difference is not same.

1.4 Quantitative Objectives of the study

- Analyze the baseline characteristics of impairments related to lumbar disc herniation in post-surgical recurrences
- Explore socio-demographic characteristics of post-surgical PLID cases
- Accentuate the medical and economical statement related to surgery
- Evaluate the outcome of physiotherapy interventions related to impairments in pain, disability, activity limitations and psychological aspect.

1.5 Qualitative Objectives of the study

- Scheme patient's experience of surgery
- Illustrate Perception on receiving physiotherapy interventions
- Conceptualize the cost effectiveness between two interventions

1.6 List of Variables

Independent Variable

Dependent Variable

Socio-demographic variable

Age, Sex, BMI, Occupation
Inhabitant, Education, Financial status

Medical Issues

Medication type, Ploy pharmacy
Duration of Medication, Systemic Illness
Work environment, stress, and sleep
Working duration, Type of work

Surgical History

Type of Surgery, Duration of Surgery
Specialty of Surgeon, skill of care
Level of surgery, lifestyle, Cost
Post-surgical management

Physiotherapy outcome

In Post-Surgical PLID

Impairments

Pain intensity, Disability, Bothersome
Daily activity, Psych-social status

Physiotherapy Intervention

Instrument of intervention, duration of
intervention, standard of care,
Qualification of Professional, Home
exercise, education, lifestyle, cost

1.7 Operational Definition

Lumbar Disc Herniation or PLID

Lumbar disc herniation comprises of displacement of the substance of the intervertebral disc through its outer layer, for the most part in its postero-lateral area. Contingent upon the volume of herniated material, there might be pressure and irritating of the lumbar nerve roots and the dural sac, represent clinically known as sciatica. The herniation has been clinically diagnosed according to history, presenting complaints and physical examination, moreover evident in Magnetic Resonance Imaging (MRI).

Post-Surgical Lumbar Disc Herniation

The previously diagnosed cases of PLID and underwent surgical procedure once or more than once in the lifetime having recurrence of previous symptom or even worse.

Physiotherapy Interventions

Interventions are broadly used for an approach being tested by a systematic procedure while treatment is the practical approach of an element of intervention. Also, intervention can be titled as an applied approach or material to manipulate or change of an element, state or condition. In medical research, the term used as a single or group of treatment process to be tested as effective to cure or manage a certain illness or disease process (Kendall, 2003). Physiotherapy interventions in the study describes as a series of non-invasive procedure such as manual therapy, exercise, electrotherapy, thermotherapy, education and home exercises for managing the impairments related to post-surgical cases of lumbar disc herniation. The approaches

are described as a conventional protocol of the Department of Physiotherapy of Centre for the Rehabilitation of the Paralysed (CRP).

2.1 Lumbar Disc Herniation

Lumbar disc herniation (LDH) is a local dislodging of intervertebral disc exceeding the physiological margin of the intervertebral disc space that manifests as low back pain, radicular symptoms, motor deficiency, numbness, as well as paresthesia in a single or branch of myotomal and dermatomal appropriation (Fardon & Milette, 2001). North American Spine Society (2012) work group consensus statement avowed, majority of patients with PLID improves independently without treatment as a consequence of spontaneous recovery by automated shrinkage of disc. There are strong evidences that, with the improvements noted in clinical examinations relates with the morphological decrease of the size and extend of herniation.

2.2 Epidemiology of Lumbar Disc Herniation

New episodes of low back pain are twice as common in people with a history of low back pain. They mentioned, lifetime prevalence is 58 to 84% and the point prevalence ranging from 4 to 33% (Woolf & Pfleger, 2003). Lumbar disc herniation leading to sciatica has an annual prevalence varying from 2.2 to 34% in several levels of compression, mechanics and symptomatic presentations (Verwoerd, Luijsterburg, Jacobs, Koes & Verhagen, 2013). There is scarcity of data related to lumbar disc herniation; an observational study of a neurosurgery unit of tertiary hospital in Pakistan states some related demographics. Here, the dimension of disc prolapse was affirmed on MRI scan of lumbosacral spine. The relative frequencies of different intervertebral disc spaces reflects as most usually occurred herniation lies in L5/S1 (34.6%), L4/L5 (33.4%) and both L4/L5, L5/S1 (19.5%). The vast majority of the

patients, almost half (47.2%) were treated conservatively. The other half of the patients, (52.8%) experienced some sort of surgery, as discectomy combined with fenestration (32%), discectomy combined with hemilaminectomy and facetectomy, transpedicular screw fixation utilizing polyaxial titanium pedicular screws and rods (3%). Surgical complications have been noted in 9% of respondents; were recurrences of symptom, residual pain and symptoms, implant failure and infections within 1 year (Junaid, et al., 2016). Lumbar radicular symptoms due to disc herniation majorly affect medical services usage and expenses. In the Netherlands, 16 million occupants have the yearly expense of immediate and backhanded medical care for herniated lumbar disc was U.S. D 1.6 billion in the mid-1990s; and in the United Kingdom, those 1% of all patients with low back pain who experience medical procedure represent roughly 30% of healthcare services costs for spinal disorders (Koes, an Tulder, Ostelo, Burton, & Waddell, 2001). Estimates on the occurrence of lumbar disc herniation surgeries go from 25 to 40 operations per 100,000 patients in Europe to 70 in the US, subsequently (Jansson, Nemeth, Granath, & Blomqvist, 2004).

2.3 Complaints of Lumbar Disc Herniation

Disc herniation in lumbar segment patients commonly however not reliably represent to confined low back pain that increments under strain and loading. Consequently sitting for a long time and erect standing are commonly more incapacitating than staying in a leaning position. Most of the time medially herniated disc result in transcendent lumbago with no radicular pain. Lateral herniation of discs, be that as it may, can prompt radicular pain with or without the low back pain (Jordon, Konstantinou & O'Dowd, 2009).

The introduction of radicular pain or related symptom is distribution of symptoms of low back pain along the dermatome distribution. The most widely recognized type of referred pain is sciatica, which indicates to a pain that transmits from the lower spine along the gluteal area and the back of the upper thigh and cuff, and towards the foot. Hacking and sniffing commonly lead to an expanded pain sensation. Lasegue's sign is affirmative in about 95% of all patients experiencing lumbar disc herniation (Poiraudau, et al., 2001).

With the seriousness of nerve root pressure, pathological reflexes, hypesthesia, hyperalgesia and motor deficits can happen. Variations in sensory status and motor deficits are found in more than half of all disc herniated cases of lumbar spine. The areas of the tactile or motor loss or any neurological impairments are not sensitive enough to decide the accurate dimension of the radiculopathy. Other problems as cauda equina disorder (CES) can also be evident. The CES corresponds with the conus medullaris disorder. It alludes to a functional impairment, that more often not including saddle anesthesia, motor deficits, urinary and bowel incontinence. A transverse section of all filaments of the cauda equina manifests in total paresis of the lower limbs and loss of tactile and bladder and bowel capacity (Luchtmann & Firsching, 2016).

2.4 Clinical examination of Lumbar Disc Herniation

North American Spine Society (2012) recommended strong recommendation in favor of neurological examination by Manual muscle testing, sensory examination, straight leg raise in supine position, Lasegue's sign and crossed Lasegue's sign for the diagnosis of lumbar disc herniation with radiculopathy. This criteria has been supported by baseline study of Jensen (1987) and Vucetic and Svensson (1996) later

Rabin, et al. (2007) that avowed similar findings. This is also elicited that, straight leg raise in supine has more sensitivity than straight leg raise in sitting to confirm lumbar disc herniation (Rabin, et al., 2007; Summers, Mishra, & Jones, 2009). Besides, the cough impulse test, Bell test, hyperextension test, femoral nerve stretch test, slump test, lumbar range of motion or changes in reflexes has poor sensitivity and usefulness in diagnosing lumbar disc herniation cases (Togay, Unalan, & Toprak, 2008; NASS, 2012).

2.5 Imaging and Other diagnostic tools

The relative literature and study represents that in the cases with lumbar disc herniation that has been evident in clinical examination, MRI can be considered as the choice of non-invasive tool to confirm the presence of lumbar disc herniation. In case of contraindications of MRI, CT scan or CT myelogram can be another choice of prescription (Pfirrmann, et al., 2004; Bussieres, Taylor & Peterson, 2008).

An investigation was directed on 54 patients utilizing 3 of 4 clinical criteria as low back pain with radiation down to the lower extremities, radicular symptoms along explicit dermatomes, positive straight leg raising test, nearness of neurological indications and signs for lumbar disc herniation. Assessment of MRI of lumbosacral spine was done dependent on degree of disc prolapse, degeneration, nerve root pressure neural foramen compression. The study recommended that dimension of disc prolapse could be accurately analyzed without MRI discoveries. Taking everything into account, clinically determined level incorporates well to have MRI levels, however all MRI variations from the normal don't have any indications to proof the exactness clinical presentations (Rahman, et al, 2016).

2.6 Outcome measurement tools in Postoperative Lumbar Disc Herniation

Veresciagina, Spakauskas and Ambrozaitis (2010) avows, outcome tool for post operative lumbar disc herniations as Visual Analogue Scale, Neumeric Pain Rating Scale for pain, Oswestry low back Disability Index, Ronald Morris Low back pain and Disability Questionnaire for measurement of disability. Weinstein, et al (2008) reported NASS Low Back Disability Questionnaire to be valid questionnaire for measuring disability in lumbar disc herniation cases.

2.7 Conservative Management of Lumbar Disc Herniation

Hahne, Ford and McMeeken (2010) reviewed, conservative management includes medication, exercise intervention as a part of Physical therapy, traction, manipulation, electrotherapy and advice or instructions. They commented exercise intervention has less short term effectiveness in pain reduction than microdiscectomy, but superior long term effect in pain, activity and disability. They found, there is moderate evidence that stabilization exercises are beneficial to no treatment. Also manipulation was more effective than sham manipulation for individuals for patients with acute low back pain and evidence of an intact annulus. There was no difference among traction, laser and ultrasound. One research found that there are a little benefit from adding mechanical traction with medication and electrotherapy with usual care.

2.8 Indication of Surgery of Lumbar Disc Herniation

Studies suggested a gold standard indication as diagnosed disc herniation evident according the guideline by North American Spine Society and patients complained of low back pain and/or sciatica, lasting in most cases for 6 months or more, and tried

conservatively at least for 6 weeks (Bonaldi, 2003; Atlas, et al, 2005; Vik, Zwart, Hulleberg & Nygaard, 2001; Yadav, Parihar, Namdev, Agarwal, & Bhatele, 2013).

2.9 Surgical management of Lumbar Disc Herniation

Luchtman and Firsching (2016) stated more than 8 out of 10 persons with lumbar disc herniation and related radiculopathies has an improvement responding to conservative management within one and half month. In some extend, low back pain with or without radicular pain and without neurological deficit not responding satisfactory to conventional management within 5 weeks have an indication favorable to neuro-surgeons. A consecutive series of three study suggests, the intervention is evident to be statistically significant to be beneficial from non-surgical patients for short and medium term (Peul, et al., 2007; Weinstein, et al., 2006; Weinstein, et al., 2008). Another three studies suggests, long term effect of both surgical and nonsurgical patients with lumbar disc herniation shows somehow similar progression (Atlas, Keller, Wu, Deyo & Singer, 2005; Lequin, et al., 2013; Lurie, et al., 2015)

2.10 Surgical Complications of Lumbar Disc Herniation

Proietti, Scaramuzzo, Schiro, Sessa & Logroscino (2013) reported 60 complications in operating 336 cases of surgery. The complications were transitory neurological deficit in 9 cases, deep venous thrombosis in 2 cases, accidental durotomy in 16 cases, UTI and other infection in 15 cases, radicular pain in 6 cases, pulmonary embolism in one case; others reported as iliac vein lesion, lctus cerebri, deep wound infection, postoperative anaemia, ileus and hematoma.

2.11 Post surgical management of PLID

Early rehabilitation

There is no proof for the adequacy of delayed postoperative rest. Rather, a progressively dynamic postoperative routine under the supervision of expert physiotherapists lead to less transient pain, impairments and disability as contrasted with no treatment (Furlan, et al., 2015). For the initial couple of days, be that as it may, patients ought to be told to abstain from forward stress, lifting, bending, and delayed sitting and standing. Patients are commonly not required or even prompted to wear a brace after microdiscectomy (Danielsen, Johnsen, Kibsgaard & Hellevik, 2000; Kjellby-Wendt, Carlsson & Styf, 2002).

Exercise therapy

A study by Danielsen, Johnsen, Kibsgaard and Hellevik (2000). Has been conducted for early aggressive exercise for postoperative PLID. The exercise began a month after the surgery. The participants took part in a physiotherapy program, thrice a week for about two months. The exercises were solely dynamic and were performed with no manual intercession of a Physiotherapist. Different devices, for example, level and vertical pulleys, loads, and exercise tables were utilized. The reason for the practices was to reinforce the muscles of the back, the muscular strength, and the muscles in the lower limbs. Load and the reiterations of each exercise were changed in accordance with each patient's condition. Each sessions endured for 40 minutes. The study reported to be effective in remission of pain and disability in cases with discectomy in 6 month and one year.

Kjellby-Wendt, Carlsson and Styf (2002) states exercises focused to increase range of trunk movements and extensors of trunk are effective in preventing rate of reoperation for patients with lumbar disc herniation surgery within 7 years.

Choi, et al (2005) reports the isolated lumbar extension exercise with strengthening of lumbar extensors exhilarates the recovery of surgery by diminishing pain, returning to work and strength of back musculature in post-operative PLID cases. The exercise should be started from 6th week after surgery and performed up to 18th week after surgery.

Arts, Peul, Koes and Thomeer (2008) states, two basic choices exist for postoperative management of lumbar disc herniation. The principal choice is referral for early recovery following surgery. The second choice includes the counsel to return back to a functioning way of life. Somehow this has been hypothesized that postoperative Physiotherapy may be required if patients have symptoms endure more than 6 weeks to about two months. An ongoing precise survey examined the viability of restoration following lumbar disc surgery. Ostelo, Costa, Maher, de Vet and van Tulder (2008) avowed in the study that, for exercise programs beginning 4 weeks to about a month and a half after surgical procedure, there is moderate evidence that they are increasingly successful in improving physical capacity, and low-quality proof that they are more compelling than no treatment in diminishing pain symptoms. Additionally, there is moderate evidence that high intensity exercise beginning 4 weeks to previously stated timeline after surgical procedure are more effective in improving physical functioning than low intensity activities, and low-quality proof that they are more successful in diminishing pain and related impairments.

Several studies has been conducted with a series of prospective guide for post-operative physiotherapy management in lumbar disc herniation. The physiotherapy intervention goals of Post-operative lumbar disc herniation differ and progressed according to phases. The physiotherapy intervention has been reported by Erdogmus, et al. (2007). The physiotherapy interventions in early stage containing start of the activity program until the patient had the capacity to perform exercises without pain up to the finish of third week. The interventions were instruction, supervision and preparing in ergonomics by legitimate seating, standing or lifting strategies, and deterrent course reenactments of home conditions. Also reeducating paravertebral muscle activation utilizing neuro-physiotherapeutic procedures by proprioceptive neuromuscular assistance has been performed. Additionally stabilizing spine utilizing static and dynamic activities has been performed by instructing and regulating patients in performing strengthening and endurance exercises for the back and abdominal muscle, the hip muscles and leg muscles, including the paretic leg muscles. In the Intermediate stage the objective was to accomplish pain free activity of the spine. Emphasis has been given on spine range and mobility, strengthening exercise was progressed in various resistances. Additionally, reeducating physiologic development of normal movement has been performed. In the Late stage aim was rebuilding of the physiological movement pattern development and reintegration of patients. Thus, Emphasis was put on improving muscle coordination and programmed trunk muscle exercise, dynamic spine strength, and cardiovascular wellness, maintaining physiologic development designs reducing fear from movements. Ergonomic guidelines were provided encouraging the reintegration of the subjects at the work environment and precaution to prevent work and relaxation time action related injuries. In this multiple group double blinded randomized control trial post-

surgical respondents receiving this protocol of physiotherapy for 12 weeks has been significantly shown greater improvement in pain rating scores initially from other groups; and after 1.5 years significant improvements from baseline.

Another study has been reported by Oosterhuis, et al. (2017) exploring effectiveness of early rehabilitation after lumbar disc operation. The interventions were provided in the first weeks of discharge. More than 6 weeks to about two months, members got a couple of individual face-to-front, underwent physiotherapy sessions of 30 minutes for every week, compatible for an institutionalized treatment protocol dependent on an established national clinical guide of Netherlands. The 6-to 8-week time span mirrored the period before patients counseled their surgeon again as a follow up. The treatment convention depicted the treatment as far as treatment objectives; the fundamental objective of the activity treatment was to steadily broaden exercises of day by day living from individual consideration to household functions errands in the short term and come back to work and get ready for games and recreation exercises in the longer duration. In the one week, physiotherapists tested by physical examinations, and concentrated management on the capacity and plausibility to execute individual customized exercises and perform exercises in the home circumstance. From the second week onwards, exercises were educated with step by step expanding force, focusing on restrictions that were found in the underlying postoperative evaluation. The definite sort of activities was left to the physiotherapists' discretion based on the results of the physical examination and considering, which was in accordance with routine clinical practice. Physiotherapists gave custom fitted exercises on way of life and the execution of exercises of everyday living. Treatment could be ended before 6-to 8-week time frame if the respondents was completely recuperated. At every treatment session, taking part physiotherapy

specialists rounded out an enrollment structure, including other information, treatment objectives on both global and progressively explicit dimension; regardless of whether a home exercise routine was endorsed or not and if relevant, the reason for ending the treatment. The study has not included any manual therapy procedure specialized for spine, and concluded that a post-surgical early referral to physiotherapist and providing treatment for 6-8 weeks, twice a week cannot provide statistically superior effect than only home exercise in surgical cases of lumbar disc herniation. The statement was somehow challenging the previous studies and reporting the ongoing necessity of physiotherapy interventions for post-surgical lumbar disc herniation cases.

Manual Therapy

Santilli, Beghi and Finucci (2006) stated manipulation is a choice of relieving pain and radicular symptoms caused by disc herniation for short term. Burton, Tillotson and Cleary (2000) added mobilization and manipulation as a choice of treatment. Some studies avowed manipulation to be equally effective to microdisectomy in short term relief of symptoms (McMorland, Suter, Casha, du Plessis & Hurlbert, 2010).

Electrotherapy

Unlu, Tascı, Tarhan, Pabuscu and Islak (2008) states insufficient evidence to suggest in favor or against manual or mechanical traction to relieve pain and associated symptom in lumbar disc herniation. The same study also concluded that, transcutaneous electrical nerve stimulation, acupuncture, electrical stimulation or braces finds no such favorable result. The statement has been further supported by the North American Spine Society.

2.12 Prognostic factors for conservative management of Post-surgical PLID

Several studies suggests, age under 40 years, duration of symptoms under 12 weeks and general health are associated with good prognosis for the patients having percutaneous endoscopic lumbar discectomy (Ahn, Lee, Lee, Kim & Liu, 2009; Ahn, et al., 2004).

3.1 Study design

The objective of the study was to elicit the outcome of physiotherapy interventions in post-operative cases with lumbar disc herniation. The study was designed as a mixed method study. To attain the objectives related to the quantitative data, one arm prior and post experimental study has been conducted. Also to analyze the qualitative variables, face to face interview has been obtained and interpreted by qualitative content analysis. The intention of mixed study design was to explore both the qualitative and quantitative outcome together and thus the comprehensive benefits can be achieved. Johnson, Onwuegbuzie and Turner (2007) defined, “Mixed methods research can be avowed as the research when an investigator or team of researchers combines analysis of qualitative and quantitative research approaches by using qualitative and quantitative approaches in data collection, analysis, inference methods for the broad purposes of extensiveness and depth of understanding and substantiation”.

In the study, the quantitative variables has been principally investigated and qualitative components has been added to find out the unexplored views on the basis of perception of patient. So on the basis of classification by Johnson and Christensen (2008), this study is designed as a quantitatively driven concurrent design.

30 subjects has been selected respectively by screening procedure from all the patients with PLID and having surgery attended at CRP in a particular time frame. A baseline pretest has been obtained in the beginning date and a posttest performed after 4 weeks

and 12 sessions with both quantitative outcome and an interview with open ended questions to 10 participants as qualitative outcome.

Such a mixed design has been reported to publish in similar setting and country context by the researcher (Hossain, et al., 2019).

3.2 Study Area

The study was conducted in 2 setting, projected that similar management and skill mix has been employed to treat the similar patients under supervision of the head of the department of Physiotherapy. The setting was outdoor musculoskeletal unit of CRP, Savar and CRP, Mirpur. Thus the similar baseline criteria and similar intervention skills can enhance the similar outcome.

3.3 Study population

The study population was the patients attended at the outdoor department of Musculoskeletal and Orthopedic Unit at the department of Physiotherapy in CRP from November 1, 2018 to March 31, 2019.

3.4 Sample size calculation

For quantitative analysis Sample size has been calculated considering a formula from Miot (2011) as he was stating if a pretest has been obtained in a similar subject to observe the impact of an intervention and conducted posttest than the formula can be used.

$$n = \left(\frac{\left(\frac{z\alpha}{2} + z\beta \cdot Sd \right)}{D} \right)^2$$

Here, the value of $z\frac{\alpha}{2} + z\beta$ is 1.96+.84 considering 5% error, average highest pain can be VAS 8 and lowest pain to be considered as VAS 2, the standard deviation as 4.24 and the minimum level of difference can be considered as change is VAS 2, the calculation explored minimum sample as 35.9.

Alongside, another formula used for sample size calculation of one sample proportion considering either changes between pretest and posttest or remain no change (Hypothesis based on One-Sided Non-Inferiority / Superiority), Centre for clinical Research and Biostatistics (CCRB, 2019) states, the formula can be

$$n = \left(\frac{(z\alpha + z\beta)^2 \theta (1 - \theta)}{(\theta - \theta^o - \delta)^2} \right)$$

Here, the intention is to find the majority of patients change in pain after physiotherapy is at least as good as the reference value, as $\theta^o=50\%$. If we estimate that a difference of 10% in responder rate is considered of no clinical significance, say, $\delta=-10\%$, to test for non-inferiority. Also the true response rate is $\theta=50\%$. According to test level of significance .05 at $\alpha=0.05$, the required sample size for having an 80% power ($\beta=0.2$) is $N=39$.

In the 6 month duration 30 patients has been screened as conducted pretest, treated for 4 weeks, thrice a week and conducted posttest for quantitative analysis.

Flick (2013) avowed the sample size for qualitative study design should be idle as 15, In the study as in qualitative part, 10 person has been interviewed and from 6 onwards there was replicable answer, so 6 participant has been analyzed as face to face interview as a part of qualitative analysis.

3.5 Duration of Study

5 months: November 1, 2018 to April 30, 2019

3.6 Sampling Scheme

All of the patients with a history of surgery and having an evident medical record of PLID in any level and attended at CRP Physiotherapy outdoor from November 1, 2018 to 3march 30, 2019 has been chosen as subject. From the subjects, screening procedure has been performed by qualified Physiotherapist to examine the inclusion and exclusion criteria. From the eligible respondents, consecutive 30 patients has been taken as a sample by hospital randomized sampling. The setting was CRP- Savar and CRP- Mirpur. The setting in CRP-Savar has a connectivity and access to patients from all over the country and CRP-Mirpur has predominantly patients covering the Dhaka city. From both setting, As these patients attained in these CRP randomly without the choice of CRP authority or the researcher's choice, so they may be considered as a random sample entitled as hospital randomization.

3.7 Inclusion Criteria

Inclusion criteria was set up according to the guideline of diagnosing Lumbar disc herniation by Kreiner, et al. (2014)

- 1) Evident medical record of lumbar disc herniation and underwent surgery and any one or more than one criteria from (2-5)
- 2) Alteration in Manual muscle testing and /or sensory testing of lower limb
- 3) supine straight leg raise and / or Lasegue's sign and/ or crossed Lasegue's sign evidences nerve compression in lower limb
- 4) Progressive or residual disability in pelvis and / or lower limb

- 5) Evident lumbar disc herniation in any one or multiple lumbar level in MRI (Rahman, et al, 2016).

3.8 Exclusion Criteria

- 1) Patient with complete bowel and / or bladder incontinence (Atlas, et al., 2005; Lequin, et al., 2013)
- 2) Any sign of Spinal Cord lesion (Lurie, et al., 2015)
- 3) Patient unwilling to receive conservative management
- 4) Uncontrolled state of hypertension (Systolic more than 160 mm/Hg and diastolic more than 120 mm/Hg and/ or diabetes
- 5) Operated with any metal fixation in spine (Proietti, et al., 2013)

3.9 Data Collection Procedure

Quantitative Data Collection

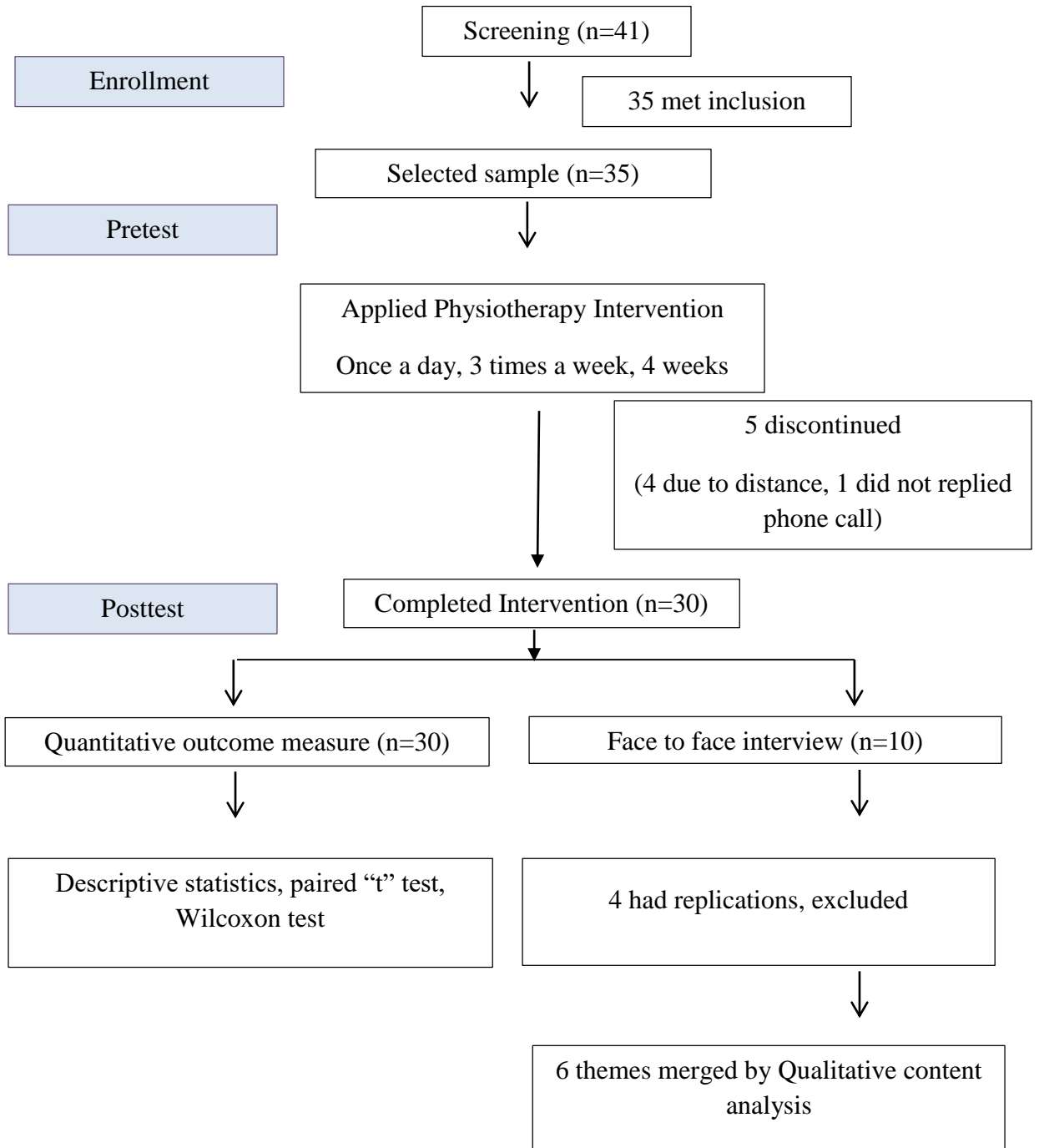
An independent data collector trained to conduct the data in both setting has been employed for 6 months. Screening and interventions has been carried out by respective physiotherapists. When employed and met eligibility, the data collector along with the investigator, one in each setting conducted pretest. The patient has been enrolled in schedule and after 12 session, in 4 weeks the posttest has been carried out by same investigator.

Qualitative Data Collection

After quantitative investigation, the data collector took a face to face interview in a setting far from the treatment room by preset open ended questionnaire and recorded the interview. According to criteria 30 subjects has been enrolled voluntarily in the study among them 10 respondents participated in the interview part according to

completion of quantitative post-test. After 6 respondents, other respondents had almost similar answer in interview so the qualitative data enrollment had been ended.

Flow Diagram



3.10 Data Collection Tools

- Informed Consent
- Structured questionnaire in Bangla
- Mobile recorder
- Reflex hammer

3.11 Measurement Tools

- 10 cm Visual analogue Scale for measuring pain intensity.
- Oswestry low back disability index to measure disability
- Fear avoidance belief questionnaire to measure fear on activities
- Sciatica bothersome index to measure bothersome in activities
- Patient health questionnaire to measure depression

3.11.1 10 cm Visual Analogue Scale for Pain

Visual simple scales (VAS) are psychometric instruments intended to record the pain related manifestation and extend of pain in individual patients and utilize this to accomplish a quick, factually quantifiable and reproducible characterization (Klimek,et al., 2017). Vishwanathan and Braithwaite (2019) recommended VAS to use in lumbar disc herniation patients with radicular pain in lower limb and expressed to be the most responsive in evaluating pain outcome. Ankarali, Ataoglu, Ankarali and Guclu (2018) reported the VAS is a material of choice to measure pain intensity in Bangladeshi respondents.

3.11.2 Oswestry Low back disability Index

The Oswestry incapacity file (ODI) was incorporated 10 areas of inquiries. The segments had chosen from test polls that planned to survey a few parts of day by day living. The ODI areas were the accompanying: pain intensity, individual care, lifting, gait, sitting, standing, sleeping, sexual coexistence and social activity. Each area contained six articulations that were scored from 0 (least level of trouble in that action) to 5 (most extreme level of trouble). On the off chance that more than one explanation was set apart in each segment, the most elevated score ought to be taken. The all out score is acquired by summing up the scores all things considered, giving a limit of 50 points. Niskanen (2002) stated the Oswestry low back pain disability questionnaire is a gold standard questionnaire for determining disability in lumbar disc herniation and associated post-surgical patients. Fairbank and Pynsent (2000) reviewed the tool as valid, vigorous and worthwhile outcome measurement tool. Durlov, et al (2014) reported to use the tool translated to Bangla language for assessing low back related disability in West Bengal population.

3.11.3 Fear Avoidance Beliefs Questionnaire (FABQ)

The Fear-Avoidance Beliefs Questionnaire (FABQ) was a poll dependent on the fear avoidance Model and created constant torment from such conditions. The FABQ measures patients' fear of pain and subsequent evasion of physical action on the grounds that of their fear developed by Waddell in 1993 (Williamson, 2006). Brox, et al (2006) reported to use the tool in lumbar disc herniation patients.

3.11.4 Sciatica bothersome index

Sciatica bothersome index was a list dependent on patients announcing of manifestations which mirrored the inconvenience persistent was proceeding with his/her leg manifestations. Grovle, et al (2010) reported to use the index for self-estimated otherness in sciatica patients.

3.11.5 Patient Health Questionnaire

The questionnaire is a patient reported outcome measure for depression. Kroenke, Spitzer, Williams and Lowe (2010) reviewed that the patient health questionnaire is a valid measurement tool to measure depression in medical conditions. Lowe, Unutzer, Callahan, Perkins and Kroenke (2004) expressed the questionnaire to have appropriate validity and reliability. Tuck et al (2018) stated the use of PHQ in patients with spinal surgeries to evaluate depression state. Moreover, Chowdhury, Ghosh and Sanyal (2004) validate the bangali version of PHQ for using in healthcare setting.

3.12 Treatment Regime

Treatment has been provided by physiotherapist having at least graduation in Physiotherapy and experience of treating musculoskeletal patients for more than 5 years. The treatment protocol was defined by the department of Physiotherapy in Centre for the Rehabilitation of the Paralysed (CRP). The departmental treatment protocol has been developed according to current evidences reviewed by professors and clinician experienced more than 20 years. The intervention protocol were directed as manual therapy by mobilization of spinal segment up to the extreme level of available range in non-graded on-off protocol. The exercise therapy was Mckenzie exercise in flexion or extension protocol, segmental stabilization exercise of lumbar

spine and trunk stabilizing exercise. As progression eccentric and concentric exercise of lower limb by leg extension and curl machine, aerobic exercise by stationary bicycle has been added from the third week. The treatment has hierarchy of education, manual therapy, and progressive low intensity to high intensity exercise. The duration of treatment was not exceeding 30 minutes in a usual session, gym exercise added if necessary beyond the usual treatment session for not more than 20 minutes. The adjunct home exercises were instructed as per Mckenzie protocol. The management was comprehensive to evidences (Choi, et al., 2005; Arts, Peul, Koes & Thomeer, 2008; Santilli, Beghi & Finucci, 2006; Ostelo, et al., 2008).

3.13 Data Analysis

For the study socio-demographics has been presented by descriptive statistics. Statistical analysis has been completed by the statistical package for social science (SPSS) version 20.

In quantitative analysis data has been analyzed by parametric and non-parametric paired test, as there is only one group present in the study. For 10 cm VAS, ODI and FABQ paired t test has been performed as the data has objective measures considering parametric data. The measurement has been taken by centimeter scale measurement. Other parameters (SBI, and PHQ) has been analyzed by W test considering their subjectivisms as non-parametric data. Also, the skewness and kurtosis has been performed to measure the normal distribution of data.

The qualitative studies has been demonstrated by themes representing the experience and opinion of the respondents.

3.14 Quality control and confirmation

The specialist had enough learning in the assigned examination, henceforth the investigation zone also, underneath issues had been acutely investigated by him. The arrangement of the survey was simply basic, accordingly it empowered a complete answer. The survey was created by the review of literature; pursue the universal acknowledged survey and companion explored for dependable poll. The examiner endeavored to keep away from choice predisposition because of carefully kept up incorporation and exclusion criteria.

The examination was stayed away from strife the determination of the members. The information was gathered by experience physiotherapist who was distinguished lumbar plate prolapsed patients as a members. The data has been collected by separate data collector employed for the study.

3.15 Ethical Issues

The whole process of this research project has been done by following the national guidelines and World Health Organization (WHO) Research guidelines. A written approval from Institutional Review Board (IRB) has been obtained. For data collection, a separate approval from Head- Department of Physiotherapy, CRP has been taken. During the data collection procedure- written consent has been taken from the patients. Every participant had to right to proceed or withdrawal from the study anytime.

3.16 Informed Consent

Prior to leading examination and interviews with the respondents, it is important to pick up assent from the subjects. For this investigation, researcher has given informed

consent structure to each members and disclosed to the subject verbally. Data collector has been referenced those respondents who were completely volunteer and they reserved the privilege to pull back whenever. Researcher assured them that secrecy would be kept up. Data may be distributed in the method for introduction or composing group however they didn't be recognized. The examination results might not have any direct impacts on them however the individuals from lumbar disc herniation and seeking Physiotherapy might be profited from the examination in future. Nobody won't be humiliated by the investigation. Also, whenever the researcher would be accessible to address any extra inquiries concerning the examination.

4.1 Baseline demographic variables

Variable	Values
Gender, no (%)	
Male	19 (63%)
Female	11 (37%)
Age (years) \pm SD	41.5 \pm 12.4
Height (cm) \pm SD	160.2 \pm 10.2
Weight (kg) \pm SD	66.2 \pm 10.2
BMI \pm SD	25.7 \pm 6.2
Occupation, no (%)	
Labor	1 (3.3%)
Job	4 (13.3%)
Garments	5 (16.6%)
Business	7 (23.3%)
Housewife	8 (26.7%)
Teacher	1 (3.3%)
Foreign job	2 (6.7%)
Other (Fisherman, Farmer)	2 (6.7%)
Marital status, no (%)	
Married	25 (83.3%)
Unmarried	5 (16.7%)
Job (hours) \pm SD	6.3 \pm 5.2

Domestic work (hours) \pm SD	2 \pm 3.0
Leisure (hours) \pm SD	15.5 \pm 3.8
Education, no (%)	
No formal education	4 (13.3%)
Primary	10 (33.3%)
Secondary	3 (10.0%)
Higher secondary	6 (20%)
Bachelor/Masters/ above	7 (23.3%)
Family Size, no (%)	
Small	19 (63.3%)
Large	11 (36.7%)
Residence, no (%)	
Village	19 (63.3%)
City	11 (36.7%)
Earning Members \pm SD	1.4 \pm 1
Monthly expenses (BDT) \pm SD	28233 \pm 12845
Monthly drug expenses (BDT) \pm SD	3933 \pm 3973
Monthly Physiotherapy expenses (BDT) \pm SD	6143 \pm 6341
Solvency, no (%)	
Solvent	14 (46.7%)
Moderate financial problem	10 (33.3%)
Near poverty state	5 (16.7%)
In poverty	1 (3.3%)

Table 1: Baseline demographic variables

4.1.1 Age of the respondents

Among the respondents, minimum age was 27 and maximum was 68 years. From 27-30 years there was 7 respondents (23.3%), 31-40 years there was 9 respondents (30%), 41-50 years was 5 (16.7%), 51-60 was 5 (16.7%) and 61-68 there was 4 participant (13.3%).

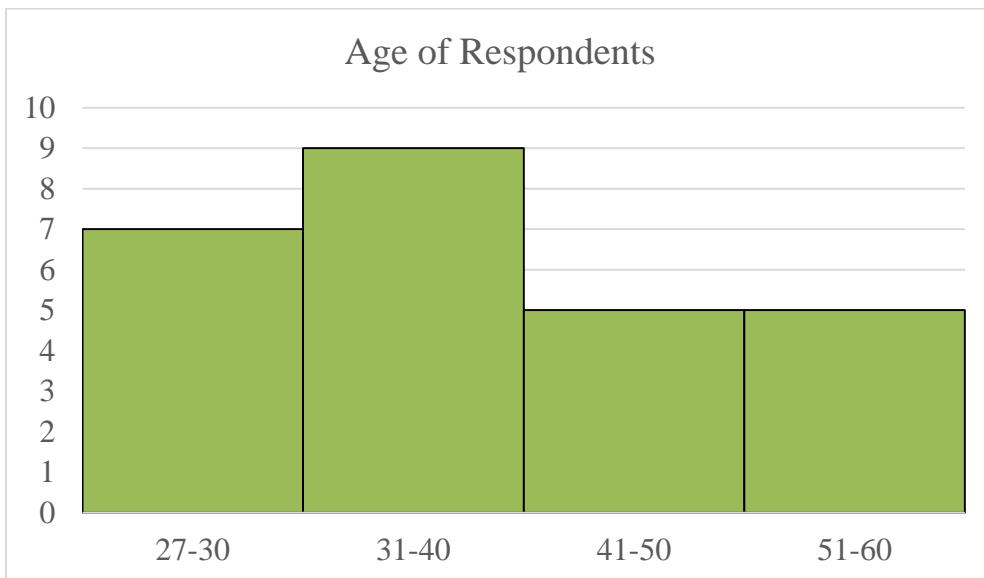


Figure 1: Age of the respondents

4.1.2 Gender of the respondents

Among the patients 19 were male (63%) and 11 were (37%) female.

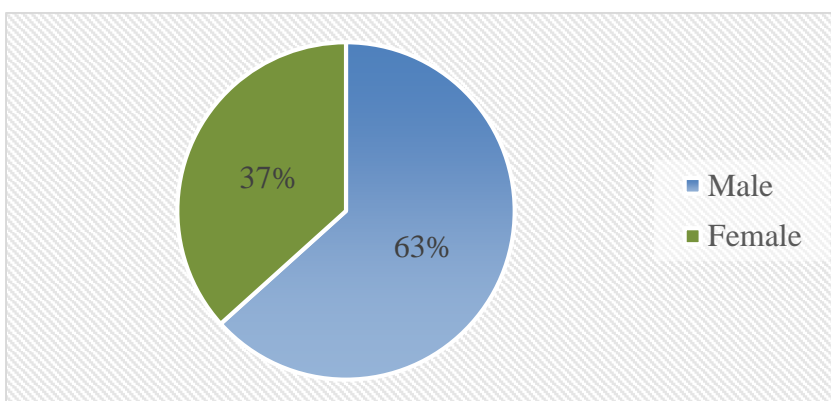


Figure 2: Gender distribution of respondents

4.1.3 Body Mass Index (BMI) of the participants

The height of the participants ranged from 137 centimeters to 172 centimeters with a mean of 160.2 centimeters and standard deviation 10.2. Subsequently the weight varied from 51 kilogram to 93 kilogram with mean 66.2 kilograms with standard deviation 10.2. The body mass index was 18.5-24.9 (Normal) for 15 respondents, 25-29.9 (overweight) for 8 participants and Equal or >30 obesity for 7 patients.

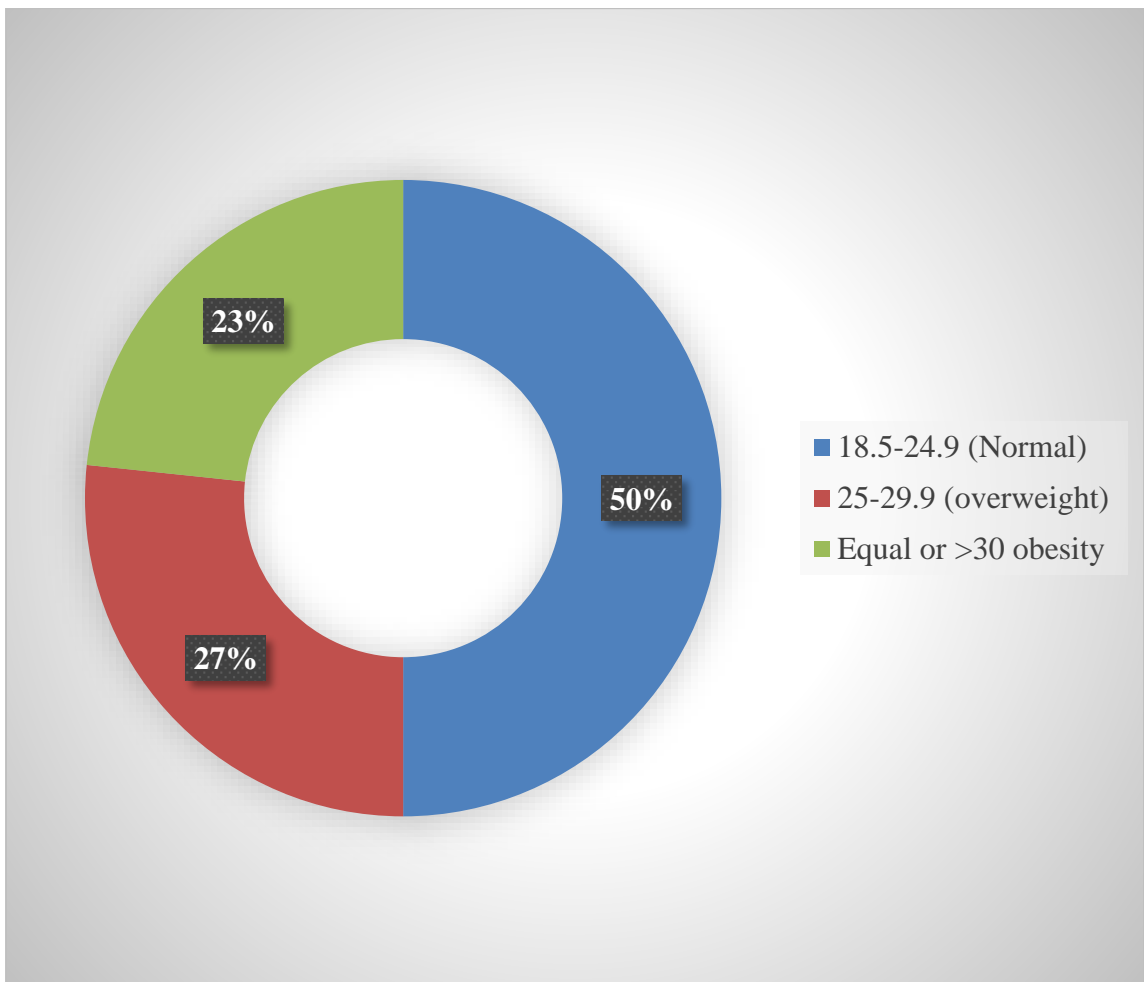


Figure 3: BMI of the respondents

4.1.4 Occupation of the respondents

Among the patients 1 (3.3%) was Labor, 4 had Job (13.3%), 5 (16.6%) was Garments worker, 7 (23.3%) was Business man, 8 (26.7%) was housewife, 1 (3.3%) was Teacher, 2 (6.7%) had foreign job and 2 (6.7%) were Fisherman and Farmer.

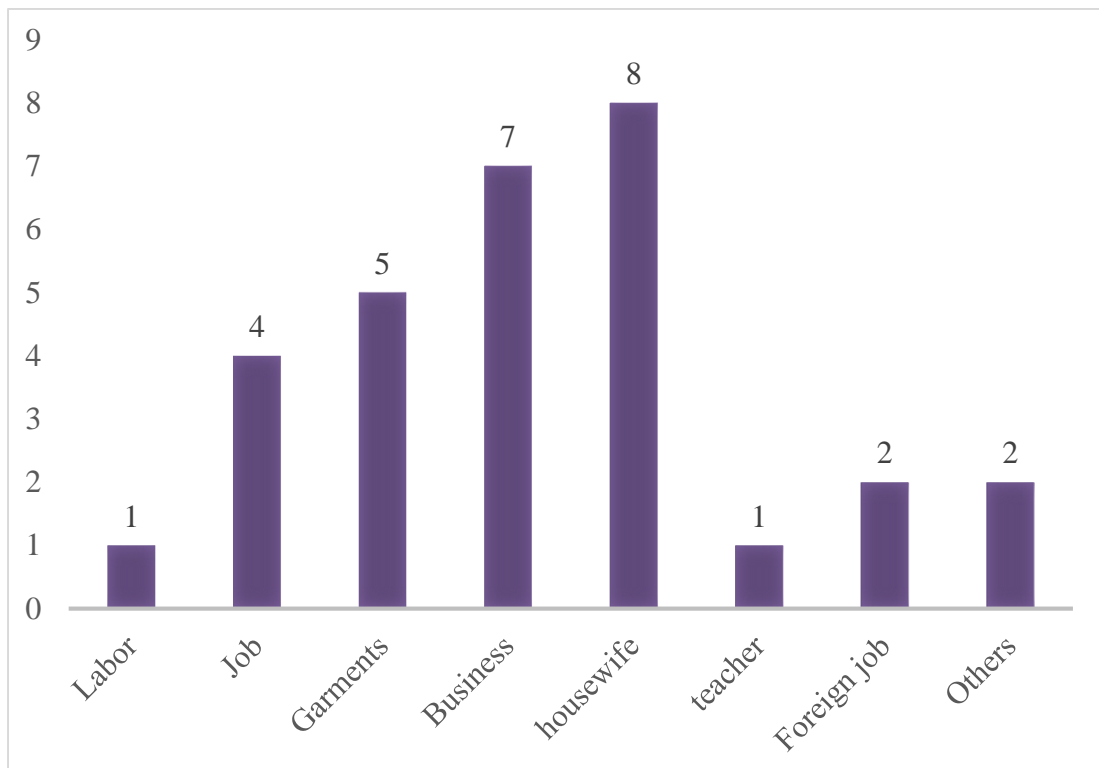


Figure 4: Occupation of the respondents

4.1.5 Job hours and Leisure hours spent by respondents

10 among the respondents (33.3%) had job hours 0, apparently they don't do jobs. 4 respondents separately had job hours 2,4,9,15 hours. 14 respondents work for 1-10 hours, 6 respondents (20%) work for 11-15 hours. Respectively, 4 respondents (17%) has a leisure time of 21-24 hours, 23 of them (83%) had leisure time 11-20 and 3 had leisure time 1-10 hours. The mean job hours was 6.3 hours with standard deviation 5.2.

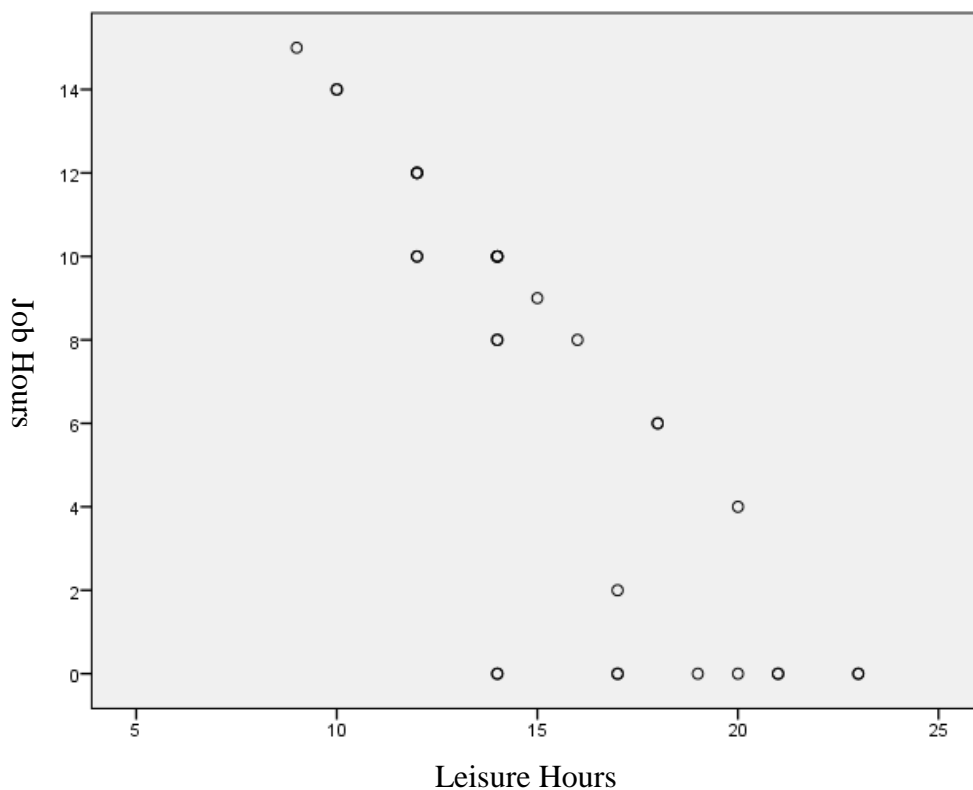


Figure 5: scatter plot of job and leisure hours

In the scattered plot the individual total job hours and leisure hours in a day has been categorized and presented as a scatter plot. Here, the majority of hours falls in higher value in leisure time and lower values in job hour. A continuous data has been categorized to show the opposite relationship of job hour and leisure hours of the respondents.

4.1.6 Monthly expenses

Monthly expenses of the respondents were varying from 10000 to 50000 Bangladeshi taka. The mean was 28233 BDT and standard deviation were 12845. Monthly expenses related to drug ranging from 0 BDT to 16000 BDT and Physiotherapy cost from 2000 to 30000 BDT with Standard deviation as 3973 and 6343 respectively.

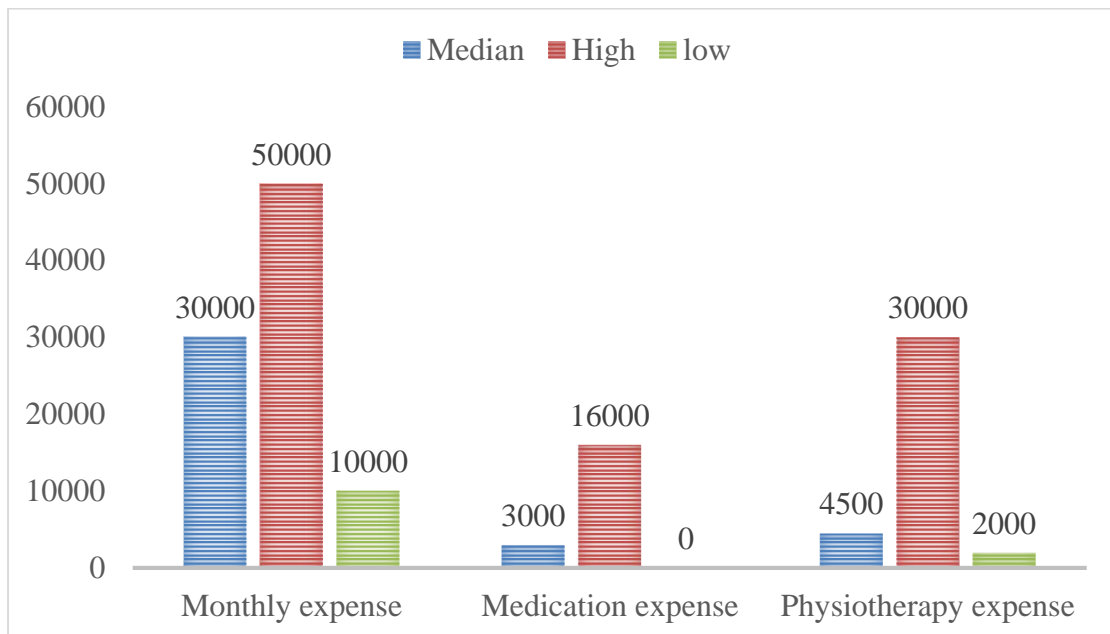


Figure 6: Monthly Expenses in BDT

4.1.7 Solvency status

14 participants (46.7%) were solvent, 33.3% (n=10) had moderate financial problem, 5 respondents (16.7%) and 1 respondent (3.3%) stated that he is poor due to bearing treatment cost.

Solvency	Post-surgical recurrence		Total	Chi-square value	df	Significance
	1-24 month	>24 month				
Solvent	9	5	14	6.857	3	.07*
Insolvent	10	0	10			
Poor	5	0	5			
Destitute	1	0	1			

*Significant (<.05)

Table 2: Crosstabs of Solvency state and Recurrences after surgery

A crosstab between Solvency state and Recurrences of symptom after surgery reveals that the patients having earlier recurrence of symptom after surgery, has financial problem that affects economic status of the respondents. 10 participants (33.3%) had an immediate recurrence of symptom within 1 month and 4 of them is insolvent, 5 was poor and 1 was destitute. Table 2 showing association with financial status and recurrence had chi-square value 6.857 and statistically significant (P=.07) to reveal the deterioration of financial state with recurrence of symptom that costs couple of times.

4.1.8 Systematic Illness

6 of the respondents (20%) had Hypertension and 24 (80%) of the respondents had no systemic illness.

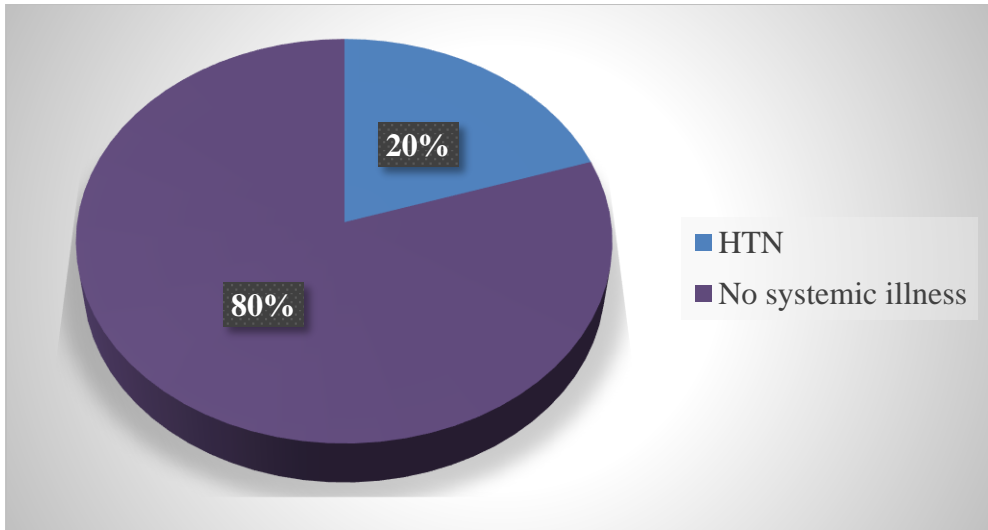


Figure 7: Systemic illness of respondents

4.1.9 Drug history

21 respondents (70%) takes NSAID's, 7 participants (23.3%) took sedative, 13% of respondents (n=4) took vitamins, 3 participants took calcium supplementary and 46.7% of the respondents (n=14) taken anti-ulcerent medications. 20% of total respondents (n=6) took no medications related to disc herniation.

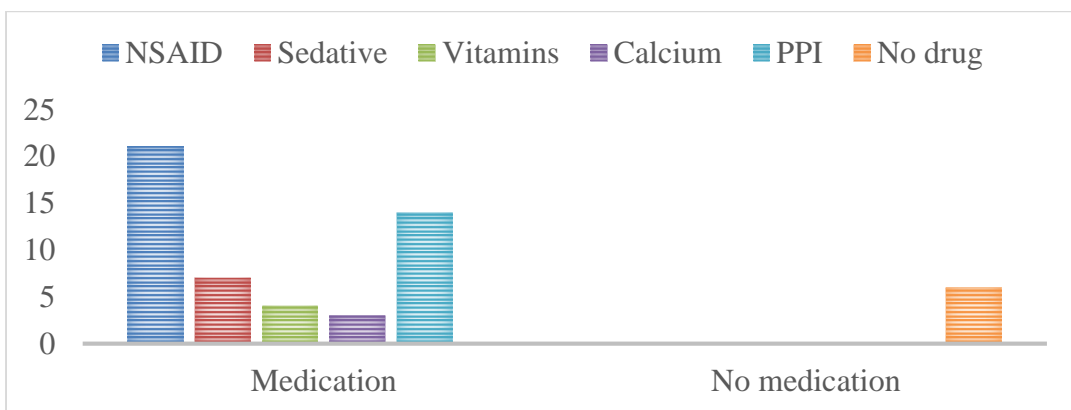


Figure 8: Drug History

4.1.10 Duration of medication

20 respondents took medication ranging from 1-12 months and 4 patients were taking medications for more than one year.

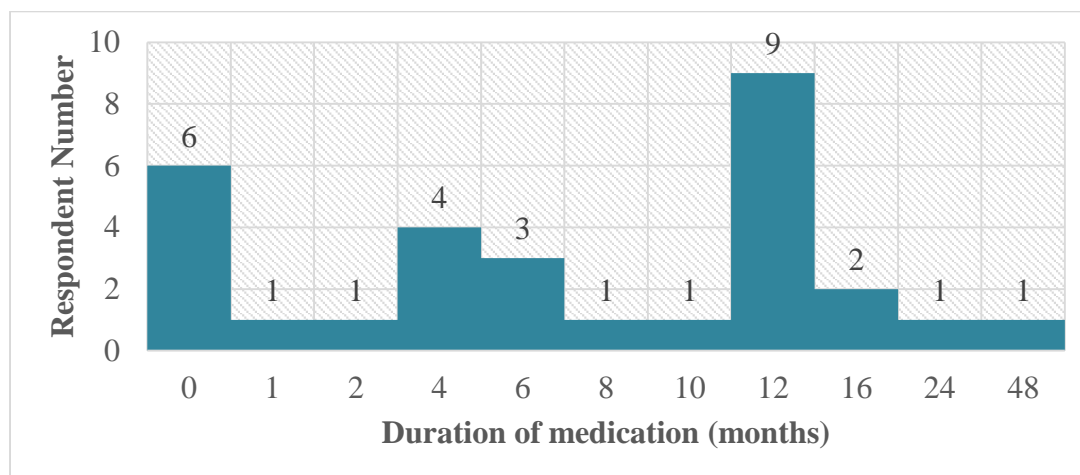


Figure 9: Drug duration (months)

4.1.11 Onset of symptom

Onset of symptoms ranged from 24 months to 252 months ago. The mean was 91.3 months and the standard deviation was 64.2.

Onset (months) ago	Number of Respondents	Percent
24	3	10.0
36	3	10.0
38	1	3.3
40	2	6.7
48	2	6.7
53	1	3.3
60	4	13.3
72	2	6.7

100	1	3.3
120	3	10.0
132	1	3.3
156	1	3.3
160	2	6.7
162	1	3.3
204	1	3.3
224	1	3.3
252	1	3.3

Table 3: Onset of symptoms (months) ago

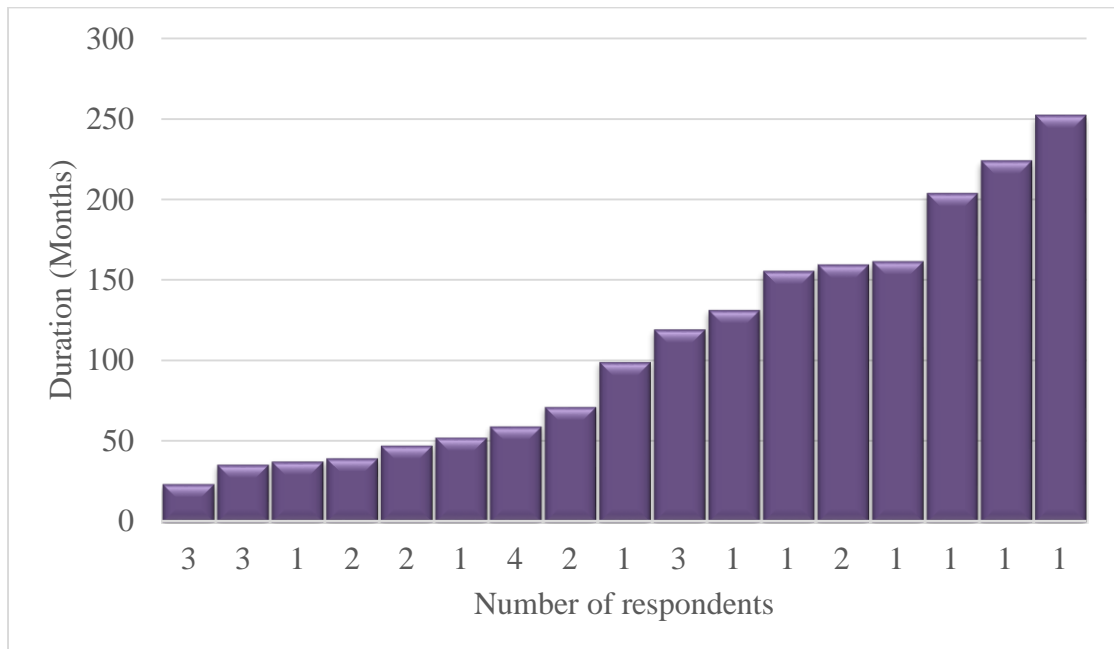


Figure 10: Onset of Symptoms

The onset was wxtending from 24 months ago that extended upto 252 months ago.

4.1.12 Surgery (months) ago

Surgery took place minimally 4 months ago to maximum 252 months (21 years) ago.

The mean was 59.9 months and standard deviation was 71.2.

Surgery (months) ago	Frequency	Percent
4	7	23.3
8	1	3.3
9	2	6.7
11	2	6.7
24	1	3.3
36	1	3.3
39	2	6.7
42	2	6.7
48	1	3.3
52	1	3.3
60	1	3.3
70	2	6.7
84	1	3.3
150	2	6.7
156	2	6.7
252	2	6.7
Total	30	100.0

Table 4: Surgery (months) ago

A boxplot shows how shorter the duration patient waited for surgery, the majority of patient had an onset before 50 months and majority of them underwent operation 30 weeks earlier.

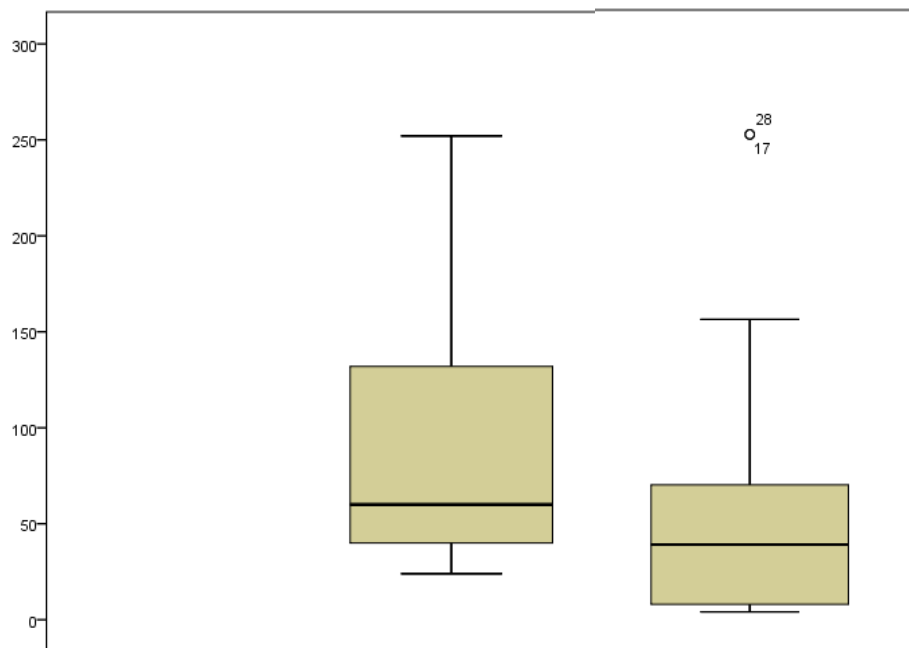


Figure 11: Surgery followed by onset (Boxplot)

4.1.13 Surgery

13 (43.3%) of the respondents had discectomy, 9 (30%) had laminectomy, 2 participants had laser microdiscectomy (6.7%) and 6 (20%) of the respondents had both discectomy and laminectomy.

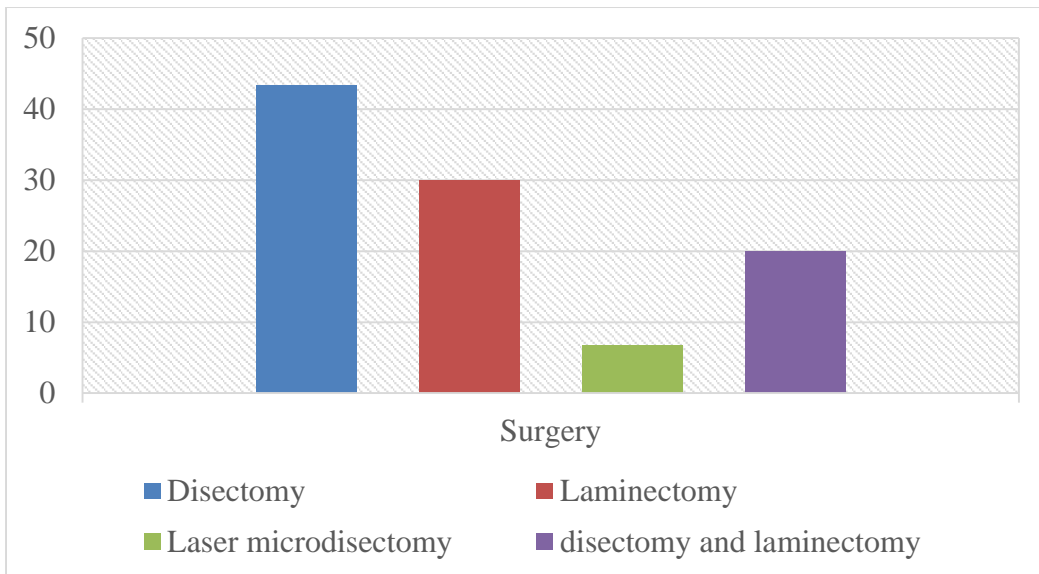


Figure 12: distribution of surgeries

4.1.14 Reason of Surgery

The majority of surgeries had been directly advised by the surgeon himself, 23 (76.6%) of the respondents told they performed the surgery because surgeon told to do. 1 (3.3%) reported the condition was life threatening, 2 (6.7%) responded as cauda equine syndrome and 4 of the respondents (13.3%) had previously failed surgery.

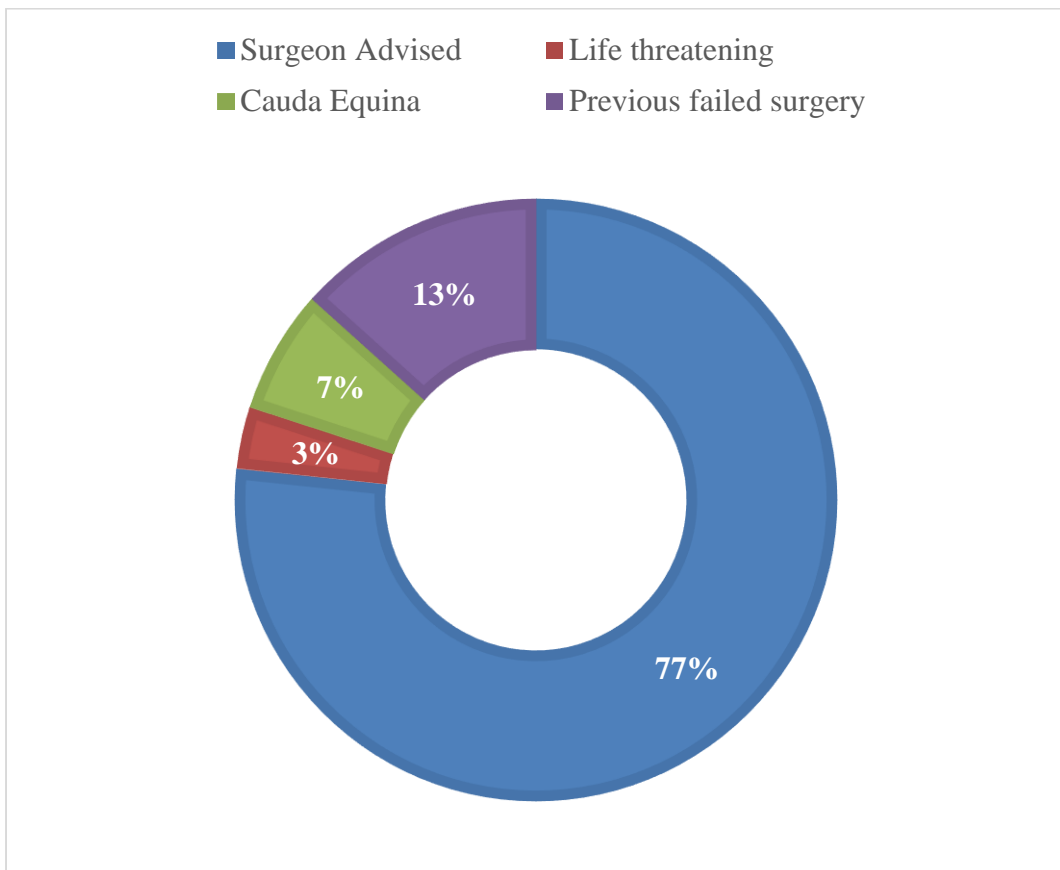


Figure 13: Reason for surgery

4.1.15 Level of Surgery

Respondents had surgery in L2-3 for 2 (6.7%), L3-4 was 2 (6.7%), L4-5 level had 11 (36.3%), L5-S1 level had 14 (46.2%) and >1 site/ level surgery had 1 (3.3%) of respondents.

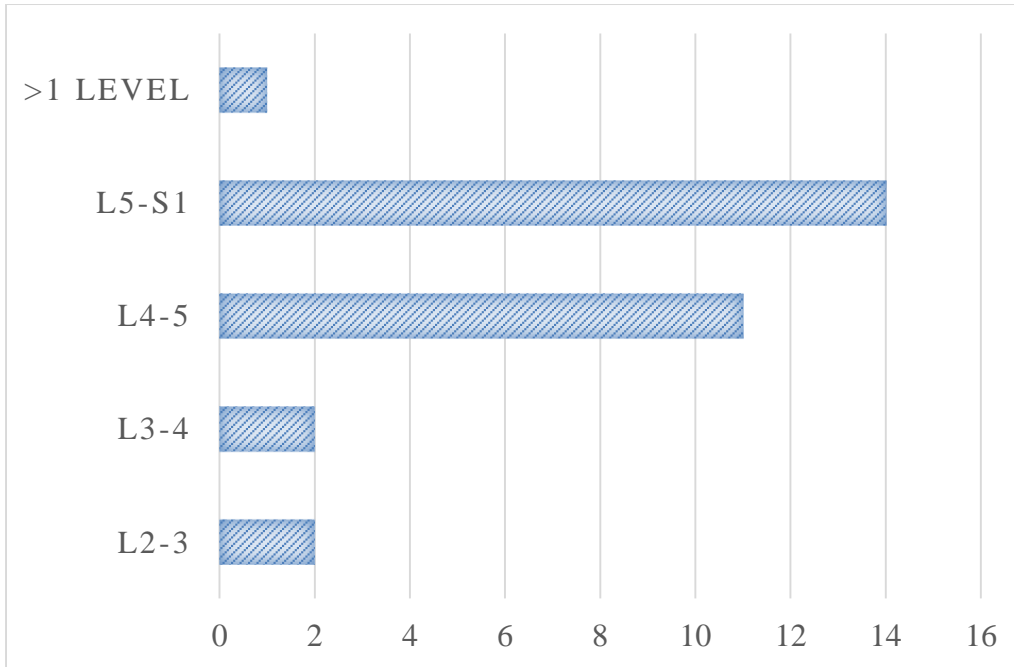


Figure 14: level of surgery

4.1.16 Place of Surgery

1 (3.3%) of the respondents had surgery in Govt. hospital, 25 (83.3%) of the respondents had surgery in Private hospital and 4 (13.3%) participant underwent the surgery in other country or abroad.

4.1.17 Specialty of surgeon

2 (6.7%) of the surgeries underwent surgery by Spine Surgeon all from abroad (India and Saudi Arabia), 17 (56.7%) has been performed by Orthopedic Surgeon, 9 (30%) of surgeries performed by Neurosurgeon and 2 (6.7%) of surgeries performed by Laser surgeon.

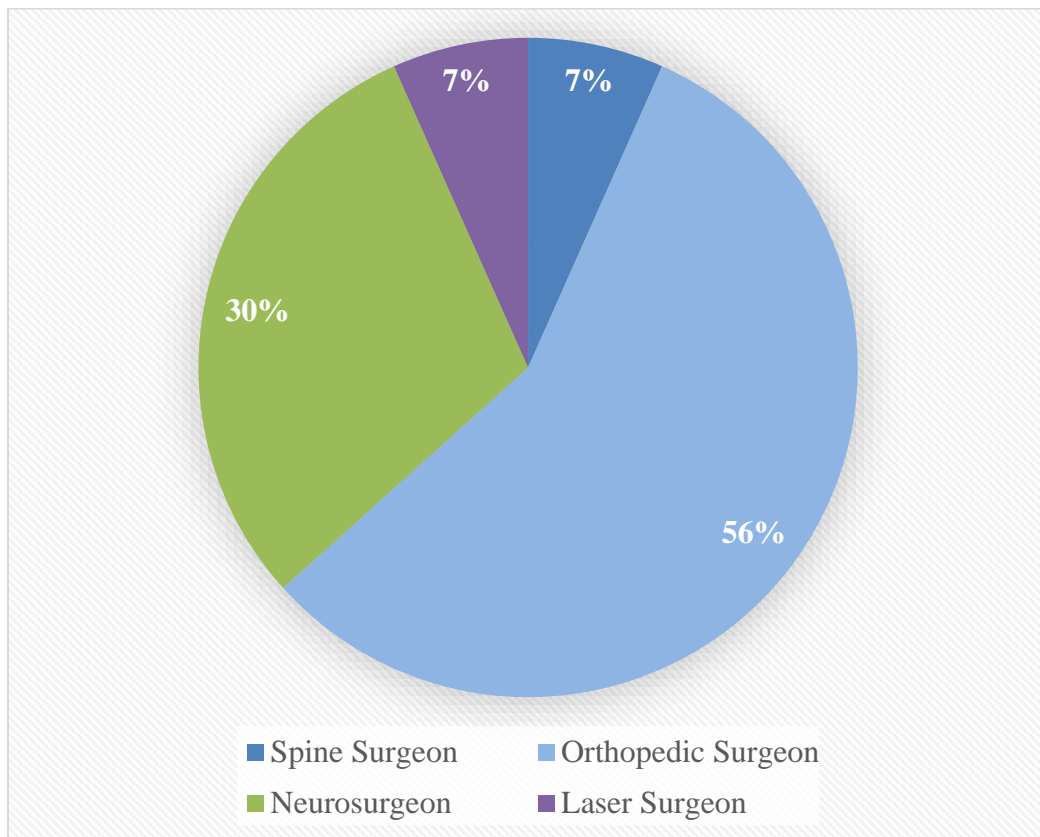


Figure 15: Surgeon Specialty

4.1.18 Surgery expense

Total expense of surgery 30000 BDT (360 USD) to 400000 BDT (4749 USD). The mean was 110100 BDT and standard deviation was 74252.

Expense in BDT (Only surgery)	Number of Respondents	Percent
30000	2	6.7
50000	4	13.3
60000	2	6.7
65000	1	3.3
68000	1	3.3
80000	2	6.7
90000	2	6.7
100000	6	20.0
110000	2	6.7
120000	1	3.3
150000	1	3.3
160000	1	3.3
200000	4	13.3
400000	1	3.3

Table 5: Cost related to surgery

4.1.19 Post-surgical recurrences of symptom

One third of the Participants had recurrences within 1 months after surgery (n=10, 33.3%), 18 (60%) respondents had recurrence within 6 months, 23 (76.7%) respondents were developed symptoms after 1 year of surgery. The height time of recurrence was 144 months.

Duration of Surgery	Post-surgical recurrence		Total	Chi-square value	df	Significance
	1-24 month	>24 month				
1-24 months	13	0	13	6.857	1	.04*
>24 months	12	5	17			

*Significant (<.05)

Table 6: Crosstab Surgical recurrences and duration of surgery

The crosstab reveals that the surgical recurrences has a majority in recent cases and within 1 months after surgery there are a significant amount of recurrences, within one year there are majority of recurrences.

Table 7 shows a chi-square value 6.857 revealing association between duration between surgery and recurrences in months were significant (P= .04).

4.1.20 Referral source of Physiotherapy

Among the patients referral source were Surgeon in 6 (20%) patients, Other Physician 6 (20%), Physiotherapist in 3 (10%), Self-referral in 2 (6.7%) cases, Relative (CRP patients) in 9 (30%) and others (Media influence) as 4 (13.3%) of the respondents.

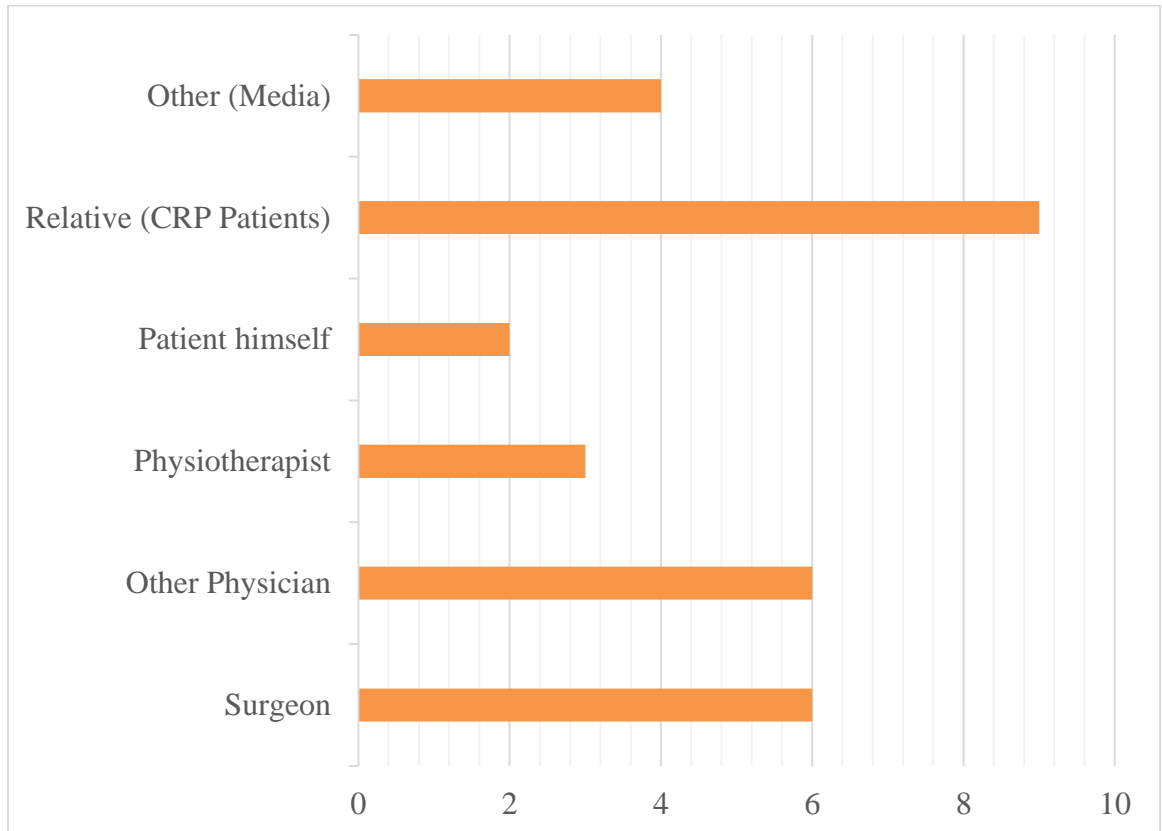


Figure 16: Referral pathway

4.2. Changes in Pain following Physiotherapy

Paired t test has been determined to measure the changes between pretest and posttest followed by physiotherapy interventions.

	Mean	SD	95% CI		t	df	Sig. value	Effect size, <i>d</i>
			lower	Upper				
Current	3.64	1.95	2.92	4.38	10.24	29	.00*	1.86 ^c
Highest level	4.23	2.00	3.47	4.97	11.55	29	.00*	2.11 ^c
Lowest level	2.44	1.79	1.78	3.11	7.48	29	.00*	1.36 ^c

* Level of significance (<.05), *d*^a =.2 meaning small effect, ^b =.5 means medium effect, ^c =.8 means large effect;

Table 7: Paired t test in 10 cm VAS score

Outcome of physiotherapy in ICF components has been evaluated through comparison of mean difference between pre and post-test evaluation complying statistical significance, 95% CI and effect size. Table 9 shows outcome. Significant difference has been noted in body structure and functions by pain and disability; in current pain mean 3.63 ± 1.95 , 95% CI (2.92, 4.38), $P = .00$, effect size 1.86; highest pain state mean 4.23 ± 2 , 95% CI (3.47, 4.97), $P = .00$, effect size 2.11 and lowest state mean 2.44 ± 1.79 , 95% CI (1.78, 3.11), $P = .00$, effect size 1.36. That means the null hypothesis has been rejected and alternative hypothesis accepted. Physiotherapy interventions has a highly significant (<.001) impact in pain remission for post-surgical lumbar disc herniation patients. The effect size is large as 1.86, 2.11 and 1.36

4.2. Changes in disability following Physiotherapy

Paired t test has been determined to measure the changes between pretest and posttest of disability state followed by physiotherapy interventions.

	Mean	SD	95% CI		t	df	Sig. value	Effect size, <i>d</i>
			lower	Upper				
ODI	16.93	7.53	14.12	19.76	12.31	29	.00*	2.25 ^c

* Level of significance (<.05), d a =.2 meaning small effect, b =.5 means medium effect, c =.8 means large effect;

Table 8: changes in disability state

In disability ODI mean was 16.93 ± 7.53 , 95% CI (14.12, 19.76), $P = .00$, effect size 2.25. That means the null hypothesis has been rejected and alternative hypothesis accepted. Physiotherapy interventions has a highly significant (<.001) impact in disability remission for post-surgical lumbar disc herniation patients. The effect size is large as 2.25

4.3. Changes in fear avoidance in activities following Physiotherapy

Paired t test has been determined to measure the changes between pretest and posttest of fear avoidance belief state followed by physiotherapy interventions.

	Mean	SD	95% CI		t	df	Sig. value	Effect size, <i>d</i>
			lower	Upper				
Fear due to pain	8.06	3.87	6.61	9.51	11.39	29	.00*	2.08 ^c
Fear in work	11.53	4.93	6.61	9.68	13.37	29	.00*	2.33 ^c
Total score	21.36	14.23	16.05	26.68	8.22	29	.00*	1.50 ^c

* Level of significance (<.05), d a =.2 meaning small effect, b =.5 means medium effect, c =.8 means large effect;

Table 9: Paired t test for changes in Fear avoidance belief

The respondents improved in activity limitations by FABQ fear due to pain mean 8.06 ± 3.87, 95% CI (9.51, 11.39), P= .00, effect size 2.08, fear in work mean 11.53 ± 4.93, 95% CI (6.61, 9.68), P= .00, effect size 2.33, and in total mean 21.36 ± 14.23, 95% CI (16.05, 26.68), P= .00, effect size 1.50. That means the null hypothesis has been rejected and alternative hypothesis accepted. Physiotherapy interventions has a highly significant (<.001) impact in fear avoidance belief for post-surgical lumbar disc herniation patients. The effect size is large as 2.08, 2.33 and 1.50

4.4. Changes in Sciatica Bothersome Index following Physiotherapy

Wilcoxon sign rank test has been determined to measure the changes between pretest and posttest of sciatica bothersome state followed by physiotherapy interventions.

	Z	95% CI		Sig. value	Effect size, <i>r</i>
		lower	Upper		
Bothersome due to leg pain	-2.84	.000	.095	.005*	-.3 ^b
Bothersome due to leg paraesthesia	-4.51	.000	.095	.00*	-.5 ^c
Bothersome due to leg weakness	-4.06	.000	.095	.00*	-.5 ^c
Bothersome in sit to stand	-3.86	.000	.095	.00*	-.49 ^b

* Level of significance (<.05), *r* meaning a =<-.1 meaning small effect, b =<-.3 means medium effect, c =<.5 means large effect

Table 10: Wilcoxon test for changes in sciatica bothersome index

The Wilcoxon test has a statistical significant result revealing changes between prior and posttest in sciatica bothersome index. There were changes in bothersome episodes in participation towards livelihood activities in leg pain (z -2.838, P=.005, r= -.3), leg paraesthesia (z -4.51, P=.00, r= -.5), Leg weakness (z -4.06, P=.00, r= -.5) and sit to stand (z -3.86, P=.00, r= -.49). That means the null hypothesis has been rejected and alternative hypothesis accepted. Physiotherapy interventions has a significant impact in sciatica bothersome index for post-surgical lumbar disc herniation patients. The result has medium to large effect size.

4.5. Changes in depression following Physiotherapy

Wilcoxon sign rank test has been determined to measure the changes between pretest and posttest of depression state followed by physiotherapy interventions.

	Z	95% CI		Sig. value	Effect size, <i>r</i>
		lower	Upper		
PHQ	-4.79	.000	.095	.000*	-.6 ^c

* Level of significance (<.05), r means a =<-.1 meaning small effect, b =<-.3 means medium effect, c =<.5 means large effect

Table 11: Wilcoxon test for changes in depression

The Wilcoxon test has a statistical significant result revealing changes between prior and posttest in depression status. The participants depression due to recurrence that has been reflected by personal factor in ICF had significant changes (z -4.79, P=.00, r= -.6) in post-test form baseline evaluation. That means the null hypothesis has been rejected and alternative hypothesis accepted. Physiotherapy interventions has a significant impact in remission of depression for post-surgical lumbar disc herniation patients. Th test has large effect size.

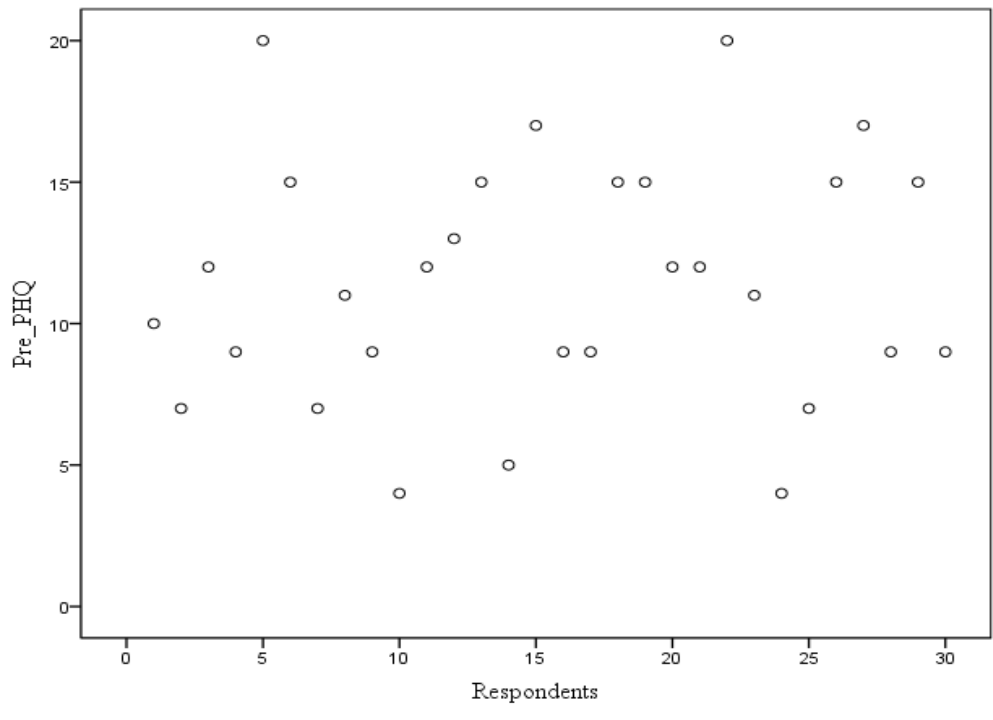


Figure 17: pretest depression state (scatter plot)

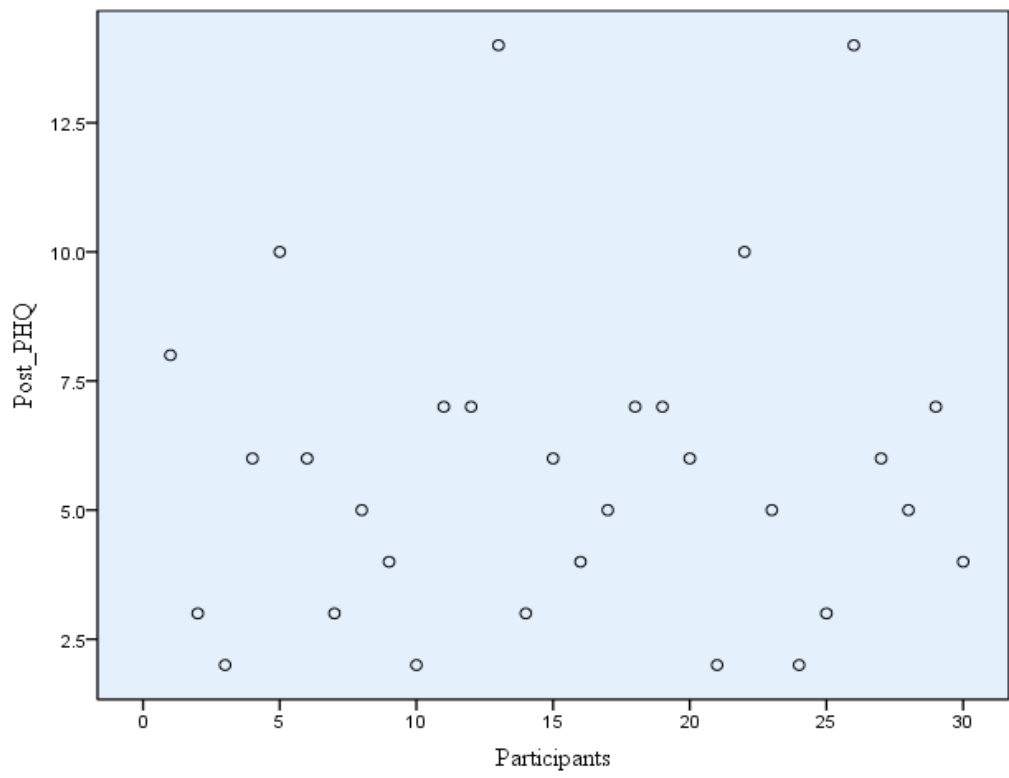


Figure18: Post intervention depression state (Scatter plot)

Result of Qualitative Content Analysis

From content analysis 6 themes have emerged

Theme 1: Patients feel better receiving Physiotherapy than Post-surgical recurrence episodes.

Theme 2: Patient feels almost no benefit having surgery in lumbar disc herniation

Theme 3: Patient would decide physiotherapy as the first option if they would be informed about physiotherapy prior to surgery

Theme 4: Patient feels Physiotherapy as a cost effective treatment having equal or even better result than surgery in lumbar disc herniation

Theme 5: Patients feel significant difference receiving physiotherapy in CRP rather than any other set up in Bangladesh

Theme 6: Patient feels awareness regarding role of physiotherapy in lumbar disc herniation is needed throughout the country

5.1 Discussion on Quantitative Analysis

The researcher intended to explore the outcome of physiotherapy interventions in patients having surgery for lumbar disc herniation. Both quantitative and qualitative approach has been applied to explore the actual outcome of Physiotherapy for the relapsed symptoms in the post-operative cases. The research question were what are the outcomes of physiotherapy in post-operative cases of lumbar disc herniation. Besides, the hypothesis was physiotherapy interventions play an effective role in post-operative cases of lumbar disc herniation.

The study was a mixed study design where researcher employed one arm prior and post experimental study design as a part of quantitative analysis and qualitative content analysis to bring the perceptions, experience and in depth outcome. For the study every patients with a history of surgery of lumbar disc herniation attended at Centre for the Rehabilitation of the Paralyzed from 1st November 2018 to 30th April 2019 has been screened for eligibility criteria and 35 patients met the criteria for participation. From 35 patients, 5 patients didn't completed the scheduled session and dropped out. 30 respondents had been analyzed for quantitative analysis and completed the pretest, intervention and posttest. From the eligible respondents, interview from a semi structured questionnaire with open ended question has been asked to 10 respondents. The respondents for qualitative interview has been chosen by ranking of the responded who finished the posttest of quantitative part and each of them participated the interview. After 6 respondents, data saturation has been enabled as next respondent were repeating the answer, so researcher stopped collecting more

data. Thus the in-depth outcome has been obtained. Reddington, Walters, Cohen and Baxter (2017) published a similar methodology to determine the outcome of physiotherapy in lumbar disc herniation with radiculopathy patients. In that study he conducted a pilot randomized control trial as quantitative analysis and face to face interview for qualitative analysis. The researcher has also experience to conduct similar study protocol in mixed approach and qualitative approach subsequently (Hossain, et al., 2019; Akter, et al., 2019).

In the study the usual care protocol of physiotherapy department of CRP has been observed with a defined time frame and protocol and the interventions were applied by physiotherapists with minimum qualification of graduation in Physiotherapy. The protocol has been shared and minimum skill of care has been obtained through in-service training as schedule of the department. Taking this into account, the one arm group of participants who underwent pretest, interventions and posttest subsequently has been categorized as one arm prior and post experimental study design. Kazdin (2003) defined as “ A quasi-experimental research design is the use of methods and procedures to make observations in a study that is structured similar to an experiment, but the conditions and experiences of participants lack some control, study lacks random assignment, includes a pre-existing factors or usually does not include a comparison/control group”. In the book he subdivided quasi experimental study in 4 major categories as one group designs having posttest only or pretest-posttest design, Nonequivalent designs, time series design and Developmental designs (Longitudinal, cross sectional and cohort sequential design). In another book by Cook, Campbell and Shadish (2002) explained a quasi-experimental may have a one arm or multi-arm. One arm study has no control group and multi-arm have one control or standard group but lacks randomization.

The study might be an observational design; hence Thiese (2014) explained the detail on both Observational and interventional study design and their types. He stated, observational study is to observe the effect, not designed to manipulate the population in any means of effect or any interventions. He mentioned interventional study as the researcher somehow intervenes in the study and any changes by any interventions can be tested by an experimental design.

The study found gender distribution as Male was 19 (63%) and Female was 11 (37%). Mean age in years was 41.5, Height 160.2(cm), Weight 66.2(kg), BMI as 25.7, Jobholder 5 (16.6%), Garments job 7 (23.3%) and Housewife 8 (26.7%). 25 (83.3%) of the respondents were married, 10 (33.3%) had primary education, 6 (20%) of higher secondary and 7 (23.3%) were bachelor or masters or above educated. 19 (63.3%) lives with small family and 11 (36.7%) lives in joint family; 19 (63.3%) lives in villages and 11 (36.7%) respondents live in Dhaka city. Islam and Mamin (2018). Had a retrospective study in the same setting. In that study, 37.5% of the respondents were male and more than half of 1000 population were female. Among the respondents, about half of patients had low back pain with age of 21-30 years. Among the respondents, 65.5% patient had only low back pain, and rest 25% had lumbar radicular symptom. In the mentioned study, 18% had hypertension and 45% takes medication to get relief of pain. In this study, 6% had hypertension and 70% takes medications for pain. The reasons behind the discrepancies of age, sex and symptoms were mostly due to case difference between non-surgical and post-surgical cases.

In the study there was some respondent aged more than 50 years, a general consideration that how the age affects symptoms due to disc problems despite of degenerative changes. The reason behind is the mean of onset in month was 91.3 with a standard deviation 64.2. Subsequently, the respondent underwent surgery by months

ago with a mean 59.9 months with a standard deviation of 71.2. Thus there was some high values of age of the respondents. Fujii, Henmi, Kanematsu, Mishiro and Sakai (2003) reported lumbar radicular symptom due to herniation of disc material can be evident and operated up to 65 years age and the outcome are similar to the surgery in young adults. Jansson, Nemeth, Granath and Blomqvist (2004) had a study on 12 years epidemiological status of disc surgeries and their outcome. They analysed total 27576 surgeries of more than twenty five thousand patients of Sweden and found the age range of 1st surgery varied from less than 19 years to more than 80 years. The highest percentages were 30-34 years (13%), 35-39 years (15.9%) and 40-44 years (16.5%) but the surgeries after 50 were more than 26%. The male were higher than female consisting 58 and 42 percent subsequently and rate of reoperations were more than 8%. That study stated recurrence of symptom ranging from 39 to more than 70 years, predominant sex of male and stayed hospital up to 15 days for treating recurrence symptom. In this study at CRP, the patient attended with post-surgery recurrence by months had mean duration of recurrence 20.4 with a surprising standard deviation 37.3. One third of the respondents had recurrence within 1 months after surgery. And majority of the recurrences were within 1 years after surgery. The Pearson Chi-Square value were 287.143 and Linear-by-Linear Association value were 15.101 and both of the statement was highly statistically significant (<.001).

The surgeries found were Discectomy, Laminectomy, Laser microdiscectomy and Discectomy and laminectomy that corresponds in 13 (43.3%), 9 (30%), 2 (6.7%) and 6 (20%) of the respondents. Gibson and Waddell (2007) stated discectomy to be leading surgery treating lumbar disc herniation. Surgery site was in L2-3, L3-4, L4-5, L5-S1 and both L4-5 and L5-S1 in subsequent 2 (6.7%), 2 (6.7%), 10 (37%), 14 (66%) and 1 (3.3%) of the respondents. Weinstein, et al (2006) stated the level of

surgery is mostly in L4-L5 (40%) and L5-S1 (54%). In an study in Bangladesh, Bhuiyan, et al (2019) stated the surgery mostly occurs in the both levels and they reported 30% and 57% respectively. The universal studies supports surgery as an indication if conservative management fails (Bonaldi, 2003; Atlas, et al, 2005; Vik, Zwart, Hulleberg & Nygaard, 2001; Yadav, Parihar, Namdev, Agarwal, & Bhatele, 2013) but in the study most of the cases 23 (76.6%) respondents underwent surgery because their surgeon said so without any prior referral to physical therapy.

However, Bangladesh doesn't cover the cost or expenses of healthcare by any insurance in case of private facilities. Only one respondent (3.3%) underwent surgery in government hospital, rest has been treated in either private facility in Bangladesh or abroad. The average monthly expense of the respondents were 28233 BDT (334 USD) where the per capita income per year is 1752 USD (146 USD) per month. Majority of the respondents are the only source of income in the family and belongs to small family (4 person on average) with monthly drug expense mean 3933 BDT (47 USD) and Physiotherapy cost average 6143 BDT (73 USD). They had surgery with an expense averaging 110100 BDT (1305 USD) that constitutes nearly average annual income of a given year. As stated earlier majority of them had a recurrence ranging from 1 month to 12 months, usually they can't afford re-surgery (Only 1 respondent had re-surgery) and the solvency status gives the report clearly that 14 (46.7%) are solvent, 10 (33.3%) has moderate financial problem, 5 (16.7%) are near poverty state and 1 (3.3%) are in poverty. The relationship between recurrence in months and solvency status has been statistically tested by chi square test with a value of 59.657 and statistical significance ($<.05$). Tosteson et al (2008) had a study in united states and concluded with stating surgery to be costly than non-operative approaches but they are significantly superior than non-operative cases for 2 years. He

calculated costs per quality adjusted life years and mentioned surgery costs ranging from 34,355 USD to 69,403 USD more than conservative management and that is only depending on the cost of surgery. USA per capita income has a median of 31,786 USD, 217 multiplies as large as Bangladesh and estimated to have advancements in surgery.

The person's completing surgery does not always return to their full time usual job or work. In the study Job (hours) had a mean of 6.3 hours per day with a standard deviation 5.2. Even they are not engaged in domestic work (2 ± 3.0), so the only way is to pass the day as leisure or part time activity (15.5 ± 3.8). Atlas, Keller, Chang, Deyo and Singer (2001) reviewed a comparison between surgical and non-surgical management and stated the comprehensive benefit of surgery shrinks within 5 years and after this time there founds no changes in disability state within two groups.

Bangladesh also lacks interdisciplinary practice in healthcare system, the referral source of the patients were Surgeon, Other Physician, Physiotherapist, Self, Relative who are patients of CRP, Others (Media influence) were 6 (20%), 6 (20%), 3 (10%), 2 (6.7%), 9 (30%) and 4 (13.3%) respectively. Mamin and Hayes (2018) states lack of referral pathways is a prime cause of deprivation of patients with non-communicable diseases to access proper healthcare in Bangladesh. An observational research has been reported in Enam Medical College and Hospital at Savar in Dhaka amid January 2007 to June 2011. Sixty four patients underwent surgery for prolapsed lumbar intervertebral disc. Fifty six (88%) respondents were male and 8 (12%) respondents were female. Age extend was 30 years extending to 50 years. The greater part of the patients had back pain along with radiculopathy and no unmistakable history of injury or weight lifting. The results was sixty (94%) patients had no pain symptoms after

surgical procedure and 4 patients had intermittent pain and referred for physiotherapy (Bhuiyan, Ripon, Haque & Rahman, 2012).

In quantitative analysis patient had significant improvement in pain, disability, sciatica bothersome state, fear avoidance beliefs of activities and depressive state after physiotherapy interventions in post-operative lumbar disc herniation cases. The 10 cm VAS test has a significant result according to statistical test revealing changes between prior and posttest in current pain (mean 3.63, t 10.245), highest pain state (mean 4.22, t 2.00), and lowest state (mean 3.43, t 7.47), of determining the intensity of pain. That means the null hypothesis has been rejected and alternative hypothesis accepted. Physiotherapy interventions has a highly significant ($<.001$) impact in pain remission for post-surgical lumbar disc herniation patients. The Oswestry disability state has a statistical highly significant result revealing changes between prior and posttest in disability status (z -4.791, P .000) induced by lumbar disc herniation. Also, the fear avoidance belief questionnaire test has a statistical significant result revealing changes between prior and posttest in fear avoidance belief status of pain (z -4.57, P =.000), work (z -4.79, P =.000) and total (z -3.988, P =.000), induced by lumbar disc herniation. The Wilcoxon test has a statistical significant result in SBI revealing changes between prior and posttest in sciatica bothersome index in leg pain (z -2.838, P .005), leg paresthesia (z -4.503, P =.000), Leg weakness (z -4.005, P =.000) and Standing & sitting pain (z -3.857, P =.000) induced by lumbar disc herniation. The Wilcoxon test for patient health questionnaire has a statistical significant result revealing changes between prior and posttest in depression status (z -4.791, P =.000) induced by lumbar disc herniation. The results are similar to the recent studies revealing the efficacy of Physiotherapy in Post-surgical lumbar disc herniation cases

(Danielsen, Johnsen, Kibsgaard & Hellevik, 2000; Kjellby-Wendt, Carlsson & Styf, 2002).

The intervention protocol were directed as manual therapy by mobilization of spinal segment , spinal manipulation, soft tissue technique for para-spinal structures, neuro-dynamics or neural stretching of lower limb, dry needling for trigger points in soft tissues, manual lumbar and basketball mobilization. The exercise therapy was mckenzie exercise, segmental stabilization, isometric and concentric exercise, core stabilization exercise, pelvic control exercise and trunk stabilizing exercise. The transcutaneous electrical nerve stimulation, infra-red radiation or cryotherapy has been added in protocol. Alongside aerobic exercise, Education in individual session and “Back care class” has been added. The treatment has hierarchy of manual therapy, low intensity to high intensity exercise. The duration of treatment is 30 minutes in a session, three times a week and 4 weeks. The follow up sessions are once a week for next 2 weeks and twice a month for next month. The adjunct home exercises are instructed to perform 2 times to 5 times a day for an intensive period of 4 weeks, than gradually tape over in 3 months. The protocol however was not strict, it was customized according to patient’s condition, clinical judgment and skill mix of Physiotherapists. The management was comprehensive to evidences (Choi, et al., 2005; Arts, Peul, Koes & Thomeer, 2008; Santilli, Beghi & Finucci, 2006; Ostelo, et al., 2008).

5.2 Discussion of Qualitative Content Analysis

The aftereffects of the qualitative part of the investigation are talked about in connection to the exploration questions and destinations of the investigation. The discourse focused on experience of the respondents regarding surgery and physiotherapy. By the substance investigation numerous themes were found under which distinctive alternatives are communicated by various codes. Ten major questions has been emerged under 6 themes. This part is done on the premise of investigation of gained information and its importance with other scholarly literatures identified with the outcome. The audio recording of 5 respondent's has been separately kept in a public accessed Google drive folder and 1 responded refused her consent to publish her voice in public.

Theme 1: Patients feels better receiving Physiotherapy than Post-surgical recurrence episodes.

Majority of the respondents (n=5, 83.33%) have affirmative answer on how they feels now and how they compares the present state with post-surgical state.

Respondent Code	Better than ever	Better	No better/ equal
01	✓		
02		✓	
03			✓
04	✓		
05		✓	
06		✓	

Table 12: Qualitative Question code 1 and 2 result

Respondent 1 states *“I am feeling better than ever, I wonder if I had similar state after surgery”*. Respondent 3 stated *“I am not feeling better because I am confined in the wheelchair for long days, I have been told I will be able to walk after surgery but it seems my hope will never be come true”*.

Svensson, Wendt, Thomee and Danielson (2013) conducted a qualitative study questioning the patients with lumbar disc herniation surgery that how they feel after 3 years of surgery. Majority of the codes of feeling well-being was in the group who was receiving physiotherapy. Arts, et al (2008) states physiotherapy has a long term impact on disability state and quality of life in post-surgical lumbar disc herniation cases.

Theme 2: Patient feels almost no benefit having surgery in lumbar disc herniation

Every participant (n=6, 100%) had negative responses regarding benefits of surgery, although the responses varied with extreme to less extreme responses.

Respondent 4 stated, *“I have been affirmed that I will be completely fine, but now I am sustaining disability”*, Participant 5 stated, *“I was quite negative about surgery and trying to find other options but I have been told to do surgery and I had no benefit”*, Respondent 2 avowed *“I didn’t have a single penny benefit for a single day having a surgery”*.

In a retrospective cohort, Sedighi and Haghnegahdar (2014) found satisfaction of patients regarding leg symptoms in several procedure of lumbar disc herniation surgeries in a short term. Schoeggel, Reddy and Matula. (2003) reports up to 60% of patients underwent surgery reports troublesome clinical signs, complications and recurrences in lumbar disc herniation.

Theme 3: Patient would decide physiotherapy as the first option if they would be informed about physiotherapy prior to surgery

Majority of participants (n=4, 66.4%) stated they would strictly decide to receive physiotherapy along with medications if they were informed before having the surgery.

Respondent Code	Definite	Confused	No
01	✓		
02		✓	
03	✓		
04	✓		
05		✓	
06	✓		

Table 13: Qualitative Question code 4 result

Participant 1 stated, *“If I would know that there is an option of Physiotherapy, I would try it first, if physiotherapy failed than I would undergo surgery”*, Participant 6 responded, *“Nobody told me, I had frequent query to my healthcare provider, but they told surgery is the only way”*, Respondent 3 stated, *“I had 2 months physiotherapy in same setting where I underwent surgery and I am not sure that having treated at CRP would bring me better result that time”*.

Luchtman and Firsching (2016) stated more than 8 out of 10 persons with lumbar disc herniation and related radiculopathies has an improvement responding to conservative management within one and half month. Mamin and Hayes (2018) stated, Bangladesh has a very poor inter-professional rehabilitation practice in health

sector and there are almost no inclusion of physiotherapy professional in health sector.

Theme 4: Patient feels Physiotherapy as a cost effective treatment having equal or even better result than surgery in lumbar disc herniation

All the respondents stated (n=6, 100%) had negative response regarding cost benefit of surgery and majority of the participants (n=5, 83.3%) had affirmative response about the cost effectiveness of physiotherapy.

Respondents	Surgery		Physiotherapy	
	Affirmative	Negative	Affirmative	Negative
01		✓	✓	
02		✓	✓	
03		✓		✓
04		✓	✓	
05		✓	✓	
06		✓	✓	

Table 14: Qualitative Question code 5 and 6 result

Respondent 5 stated about surgery by, *“loss, totally loss”*, participant 4 avowed, *“If I would felt better somehow I would regain my costing of surgery by hard work”*.

Respondent 6 stated on Physiotherapy service as *“less amount and very large benefit”*, Participant 2 stated, *“less cost than surgery and equal improvement”*.

Participant 5 stated, *“I have been advised to go to traditional herbal practitioner by*

my colleagues but I went to the hospital, and medical science failed to give me result”.

Atlas, Keller, Wu, Deyo and Singer (2005) reviewed long-term outcomes of surgical and nonsurgical management of sciatica secondary to a lumbar disc herniation for 10 year in selected and accessible 477 patients; at 10-year study, 69% of patients at first treated surgically revealed improvement in short term versus 61% of those at first treated non-surgically with statistical significance. But in 10 years there was similar improvement of disability status in both group. A review by Rahman, Uddin and Ahsanulla (2008) from Bangladesh College of Physicians and Surgeons (BCPS) avowed that no differences has been noted between conservative and surgical approaches in 2 years of initial incidence of sciatica. The surgery can be indicated in case of existence of symptoms for more than 6-8 weeks despite of conservative management or major neurological involvement including cauda equina syndrome.

Theme 5: Patients feels significant difference receiving physiotherapy in CRP rather than any other set up in Bangladesh

Every participant (n=6, 100%) had positive responses regarding differences of receiving physiotherapy in CRP and rest of the country. They feel the setting as different and unique.

Respondent 1 stated, *“A far away ahead”*, Participant 2 stated, *“I have experience this better than any center”*, Respondent 6 avowed *“CRP is a unique organization for physiotherapy services”*.

Mamin and Hayes (2018) stated very few non-governmental organizations are providing physiotherapy in an organizational structure and CRP is one of them. Islam

and Mamin (2018) retrospectively analyzed 1000 low back pain patients treated in the physiotherapy department at CRP. Among them 23% had radicular symptoms and 77% had axial symptoms of pain and disability. The mean of pain was 6.64 with a standard deviation 1.54 in baseline and after physiotherapy the pain decreased to 3.08 with a standard deviation 4.56. There the changes in pain in VAS, lumbar ROM, self-reported outcome and overall improvement had statistical significance ($P=.00$).

Theme 6: Patient feels awareness regarding role of physiotherapy in lumbar disc herniation is needed throughout the country

Every participant ($n=6$, 100%) had positive feedback about raising awareness about physiotherapy services in lumbar disc herniation. They stated to conduct necessary steps to improve mass knowledge and awareness in this regard.

Respondent 6 stated, *“The awareness should include the healthcare providers in government and private level”*, Participant 1 stated, *“Awareness through website and YouTube promotion can be an effective way”*, Respondent 3 avowed *“Awareness is the prime way, if I would know about physiotherapy, I would try it first at CRP than decide for surgery”*.

Limitation of the Study

The study had some limitations, however researcher tried to minimize them but some had to be improved in further study. The methodology of the study could be more appropriate if the quantitative part had a control and concealed allocation to generate more impact on internal and external validity. There was scarcity of data due to less referral of patients to physiotherapy following surgery.

The sample size should be even more, considering calculations. Randomization process has been ensured by hospital randomization (screening all the patients attended in a specific time frame). The longer duration of study can bring more patients.

Hospital Randomization has been performed in two setting considering homogeneity between setting and heterogeneity within setting. A cluster sampling could be even better to cover the country and promote generalization.

The interventions were applied as a department protocol, even this is the only structured protocol in Bangladesh regarding physiotherapy interventions of post-surgical cases of lumbar disc herniation. The more specification of interventions and multiple group of interventions can explore the efficacy of a specific treatment approach.

Research has been conducted in a physiotherapy setting only where surgery is rarely available. This can create bias, a multicenter approach with post-operative interventions in centers where surgery is available can minimize bias.

The structural organogram, qualification of physiotherapists and experience of care may manipulate the improvement for the respondents. These are far more different

than other practices outside CRP, so the result may not be generalized to every physiotherapy setting in Bangladesh.

Physiotherapy and conservative approaches are evident as gold standard management protocol for lumbar disc herniation, the surgery is essential in case of certain specification and failed cases of conservative care. Somehow the process is not being maintained by health professionals in Bangladesh and thus the post-surgical lumbar disc herniation cases are increasing with a predominance of recurrence within shorter duration.

Till now, this is the maiden study in Bangladesh having both quantitative and qualitative outcome measurement of physiotherapy interventions in post-surgical cases of Lumbar disc herniation. Both approaches found physiotherapy as a cost effective, scientific based approach to elevate the body structure and function (Pain), Activity limitation (Sciatica bothersome), Participation restriction (fear avoidance belief) and personal factors (depression) in international classification of functioning disability and health (ICF) for post-surgical cases with lumbar disc herniation. The study needs to be strengthen concentrating on the limitations and also implementation to the findings in imperial phases is necessary to elevate the disability adjacent life years in patients having lumbar disc herniation with or without surgery.

Recommendation

Lumbar disc herniation or prolapsed lumbar intervertebral disc have to be diagnosed based on clinical and radiological findings incorporating evidence. Following diagnosis conservative management must be prioritize (excluding some exceptions) with referral to physiotherapy facilities structured enough to serve with outmost care by qualified professionals at least up to 6 weeks.

A national guideline for conservative and post-operative physiotherapy management in lumbar disc herniation or PLID needed to be published by the professional body with appropriate in-service training.

Before surgery, a spot screening by specialist Physiotherapist in musculoskeletal practice can reduce the unnecessary hazard or improve usefulness and justification to surgery. Subsequently early referral for physiotherapy following surgery is strongly recommended.

More research to create evidences on conservative and surgical care for lumbar disc herniation is strongly recommended in a country context in Bangladesh.

Ahn, Y., Lee, S. H., Lee, J. H., Kim, J. U., & Liu, W. C. (2009). Transforaminal percutaneous endoscopic lumbar discectomy for upper lumbar disc herniation: clinical outcome, prognostic factors, and technical consideration. *Acta neurochirurgica*, *151*(3), 199-206.

Ahn, Y., Lee, S. H., Park, W. M., Lee, H. Y., Shin, S. W., & Kang, H. Y. (2004). Percutaneous endoscopic lumbar discectomy for recurrent disc herniation: surgical technique, outcome, and prognostic factors of 43 consecutive cases. *Spine*, *29*(16), E326-E332.

Akter, F., Islam, M. S., Hossain, M. A., Haque, M. O., Hossain, K. M., Imran, M. H., ... Ahmed, M. S. (2019). Barriers for individuals with spinal cord injury during community reintegration: a qualitative study. *International Journal of Physical Medicine & Rehabilitation*, *7*(2), 1000513. doi:10.4172/2329-9096.1000513

Andersson, G. B. (1999). Epidemiological features of chronic low-back pain. *The lancet*, *354*(9178), 581-585.

Andersson, G. B., Brown, M. D., Dvorak, J., Herzog, R. J., Kambin, P., Malter, A., ... & Weinstein, J. N. (1996). Consensus summary of the diagnosis and treatment of lumbar disc herniation. *Spine*, *21*(24 Suppl), 75S-78S.

Ankarali, H., Ataoglu, S., Ankarali, S., & Guclu, H. (2018). Pain Threshold, Pain Severity and Sensory Effects of Pain in Fibromyalgia Syndrome Patients: A new scale study. *Bangladesh Journal of Medical Science*, *17*(3), 342-350.

Arts, M. P., Peul, W. C., Koes, B. W., & Thomeer, R. T. (2008). Management of sciatica due to lumbar disc herniation in the Netherlands: a survey among spine surgeons. *Journal of Neurosurgery: Spine*, 9(1), 32-39.

Atlas, S. J., Keller, R. B., Chang, Y., Deyo, R. A., & Singer, D. E. (2001). Surgical and nonsurgical management of sciatica secondary to a lumbar disc herniation: five-year outcomes from the Maine Lumbar Spine Study. *Spine*, 26(10), 1179-1187.

Atlas, S. J., Keller, R. B., Wu, Y. A., Deyo, R. A., & Singer, D. E. (2005). Long-term outcomes of surgical and nonsurgical management of lumbar spinal stenosis: 8 to 10 year results from the maine lumbar spine study. *Spine*, 30(8), 936-943.

Atlas, S. J., Keller, R. B., Wu, Y. A., Deyo, R. A., & Singer, D. E. (2005). Long-term outcomes of surgical and nonsurgical management of sciatica secondary to a lumbar disc herniation: 10 year results from the maine lumbar spine study. *Spine*, 30(8), 927-935.

Atlas, S. J., Keller, R. B., Wu, Y. A., Deyo, R. A., & Singer, D. E. (2005). Long-term outcomes of surgical and nonsurgical management of sciatica secondary to a lumbar disc herniation: 10 year results from the maine lumbar spine study. *Spine*, 30(8), 927-935.

Bhuiyan, M. I., Ripon, M. A., Haque, M. M., & Rahman, M. M. (2012). Lumbar Intervertebral Disc Prolapse (PLID) Surgery and Our Experiences. *Journal of Enam Medical College*, 2(1), 20-23.

Bhuiyan, S. A., Bhuiyan, S. K, Sultana, N., & , Jahan, F. (2019). Outcome of Primary Discectomy in Lumbar Intervertebral Disc Prolapse. *Ortho & Rheum Open Access J*, 13(5), 555872. DOI: 10.19080/OROAJ.2019.13.555872

- Bonaldi, G. (2003). Automated percutaneous lumbar discectomy: technique, indications and clinical follow-up in over 1000 patients. *Neuroradiology*, *45*(10), 735-743.
- Brox, J. I., Reikeras, O., Nygaard, O., Sorensen, R., Indahl, A., Holm, I., ... & Friis, A. (2006). Lumbar instrumented fusion compared with cognitive intervention and exercises in patients with chronic back pain after previous surgery for disc herniation: a prospective randomized controlled study. *Pain*, *122*(1-2), 145-155.
- Burton, A. K., Tillotson, K. M., & Cleary, J. (2000). Single-blind randomised controlled trial of chemonucleolysis and manipulation in the treatment of symptomatic lumbar disc herniation. *European Spine Journal*, *9*(3), 202-207.
- Bussieres, A. E., Taylor, J. A., & Peterson, C. (2008). Diagnostic imaging practice guidelines for musculoskeletal complaints in adults—an evidence-based approach—part 3: spinal disorders. *Journal of manipulative and physiological therapeutics*, *31*(1), 33-88.
- CCRB Sample Size Estimation - One Sample Proportion. (2019). Retrieved from https://www2.ccrb.cuhk.edu.hk/stat/proportion/OSp_sup.htm
- Choi, G., Raiturker, P. P., Kim, M. J., Chung, D. J., Chae, Y. S., & Lee, S. H. (2005). The effect of early isolated lumbar extension exercise program for patients with herniated disc undergoing lumbar discectomy. *Neurosurgery*, *57*(4), 764-772.
- Chowdhury, A. N., Ghosh, S., & Sanyal, D. (2004). Bengali adaptation of brief patient health questionnaire for screening depression at primary care. *Journal of the Indian Medical Association*, *102*(10), 544-547.

Cook, T. D., Campbell, D. T., & Shadish, W. (2002). *Experimental and quasi-experimental designs for generalized causal inference*. Boston, MA: Houghton Mifflin.

Danielsen, J. M., Johnsen, R., Kibsgaard, S. K., & Hellevik, E. (2000). Early aggressive exercise for postoperative rehabilitation after discectomy. *Spine*, 25(8), 1015-1020.

Diagnosis and Treatment of Lumbar Disc Herniation with Radiculopathy. (2012). 7075 Veterans Boulevard Burr Ridge, IL 60527 USA 630.230.3600: North American Spine Society, p.9.

Durlov, S., Chakrabarty, S., Chatterjee, A., Das, T., Dev, S., Gangopadhyay, S., ... & Sahu, S. (2014). Prevalence of low back pain among handloom weavers in West Bengal, India. *International journal of occupational and environmental health*, 20(4), 333-339.

Erdogmus, C. B., Resch, K. L., Sabitzer, R., Muller, H., Nuhr, M., Schoggl, A., ... & Ebenbichler, G. R. (2007). Physiotherapy-based rehabilitation following disc herniation operation: results of a randomized clinical trial. *Spine*, 32(19), 2041-2049.

Fairbank, J. C., & Pynsent, P. B. (2000). The Oswestry disability index. *Spine*, 25(22), 2940-2953.

Fardon, D. F., & Milette, P. C. (2001). Nomenclature and classification of lumbar disc pathology: recommendations of the combined task forces of the North American Spine Society, American Society of Spine Radiology, and American Society of Neuroradiology. *Spine*, 26(5), E93-E113.

Fardon, D. F., & Milette, P. C. (2001). Nomenclature and classification of lumbar disc pathology: recommendations of the combined task forces of the North American Spine Society, American Society of Spine Radiology, and American Society of Neuroradiology. *Spine*, 26(5), E93-E113.

Flick, U. (Ed.). (2013). *The SAGE handbook of qualitative data analysis*. Sage.

Fujii, K., Henmi, T., Kanematsu, Y., Mishiro, T., & Sakai, T. (2003). Surgical treatment of lumbar disc herniation in elderly patients. *The Journal of bone and joint surgery. British volume*, 85(8), 1146-1150.

Furlan, A. D., Malmivaara, A., Chou, R., Maher, C. G., Deyo, R. A., Schoene, M., ... & Van Tulder, M. W. (2015). 2015 updated method guideline for systematic reviews in the Cochrane Back and Neck Group. *Spine*, 40(21), 1660-1673.

Gibson, J. N. A., & Waddell, G. (2007). Surgical interventions for lumbar disc prolapse: updated Cochrane Review. *Spine*, 32(16), 1735-1747.

Grogle, L., Haugen, A. J., Keller, A., Natvig, B., Brox, J. I., & Grotle, M. (2010). The bothersomeness of sciatica: patients' self-report of paresthesia, weakness and leg pain. *European Spine Journal*, 19(2), 263-269.

Hahne, A. J., Ford, J. J., & McMeeken, J. M. (2010). Conservative management of lumbar disc herniation with associated radiculopathy: a systematic review. *Spine*, 35(11), E488-E504.

Hossain, K. A., Nazim, A. Q., Hossain, M. S., Haque, M. O., Hossain, M. A., Hossain, M. Z., & Ahmed, M. S. (2019). Impact of Continuous Professional Education on Leadership for Rehabilitation Professionals in Bangladesh: A Pilot Study. *Journal of Medical Research and Innovation*, 3(1), e000158-e000158.

Hoy, D., Brooks, P., Blyth, F., & Buchbinder, R. (2010). The epidemiology of low back pain. *Best practice & research Clinical rheumatology*, 24(6), 769-781.

Islam, M. S., & Mamin, F. A. (2018). A retrospective study investigating the effects of outpatient physiotherapy on lower back pain in Bangladesh. *Asian Journal of Medical and Biological Research*, 4(4), 337-342.

Jansson, K. A., Nemeth, G., Granath, F., & Blomqvist, P. (2004). Surgery for herniation of a lumbar disc in Sweden between 1987 and 1999: AN ANALYSIS OF 27 576 OPERATIONS. *The Journal of bone and joint surgery. British volume*, 86(6), 841-847.

Jansson, K. Å., Nemeth, G., Granath, F., & Blomqvist, P. (2004). Surgery for herniation of a lumbar disc in Sweden between 1987 and 1999: an analysis of 27 576 operations. *The Journal of bone and joint surgery. British volume*, 86(6), 841-847.

Jensen, O. H. (1987). The level-diagnosis of a lower lumbar disc herniation: the value of sensibility and motor testing. *Clinical rheumatology*, 6(4), 564-569.

Johnson, B., & Christensen, L. (2008). *Educational research: Quantitative, qualitative, and mixed approaches*. Sage.

Johnson, R. B., Onwuegbuzie, A. J., & Turner, L. A. (2007). Toward a definition of mixed methods research. *Journal of mixed methods research*, 1(2), 112-133.

Jordon, J., Konstantinou, K., & O'Dowd, J. (2009). Herniated lumbar disc. *BMJ clinical evidence*, 2009.

- Junaid, M., Rashid, M. U., Afsheen, A., Bukhari, S. S., & Kulsoom, A. (2016). analysis of 1058 lumbar prolapsed intervertebral disc cases in two tertiary care hospitals of pakistan. *Journal of Ayub Medical College Abbottabad*, 28(2), 281-284.
- Kazdin, A. E. (2003). Research design in clinical psychology.
- Kendall, J. M. (2003). Designing a research project: randomised controlled trials and their principles. *Emergency Medicine Journal*, 20(2), 164-168.
- Kjellby-Wendt, G., Carlsson, S. G., & Styf, J. (2002). Results of early active rehabilitation 5–7 years after surgical treatment for lumbar disc herniation. *Clinical Spine Surgery*, 15(5), 404-409.
- Klimek, L., Bergmann, K. C., Biedermann, T., Bousquet, J., Hellings, P., Jung, K., ... & Ring, J. (2017). Visual analogue scales (VAS): Measuring instruments for the documentation of symptoms and therapy monitoring in cases of allergic rhinitis in everyday health care. *Allergo journal international*, 26(1), 16-24.
- Koes, B. W., van Tulder, M. W., Ostelo, R., Burton, A. K., & Waddell, G. (2001). Clinical guidelines for the management of low back pain in primary care: an international comparison. *Spine*, 26(22), 2504-2513.
- Kortelainen, P. E. K. K. A., Puranen, J. A. A. K. K. O., Koivisto, E. R. K. K. I., & Lähde, S. E. P. P. O. (1985). Symptoms and signs of sciatica and their relation to the localization of the lumbar disc herniation. *Spine*, 10(1), 88-92.
- Kreiner, D. S., Hwang, S. W., Easa, J. E., Resnick, D. K., Baisden, J. L., Bess, S., ... & Ghiselli, G. (2014). An evidence-based clinical guideline for the diagnosis and treatment of lumbar disc herniation with radiculopathy. *The Spine Journal*, 14(1), 180-191.

Kroenke, K., Spitzer, R. L., Williams, J. B., & Löwe, B. (2010). The patient health questionnaire somatic, anxiety, and depressive symptom scales: a systematic review. *General hospital psychiatry*, *32*(4), 345-359.

Lequin, M. B., Verbaan, D., Jacobs, W. C., Brand, R., Bouma, G. J., Vandertop, W. P., & Peul, W. C. (2013). Surgery versus prolonged conservative treatment for sciatica: 5-year results of a randomised controlled trial. *BMJ open*, *3*(5), e002534.

Luchtman, M., & Firsching, R. (2016). Lumbar Disc Herniation: Evidence-based Guidelines-a Review. *The Indian Practitioner*, *69*(3), 61-66.

Lurie, J. D., Tosteson, T. D., Tosteson, A., Abdu, W. A., Zhao, W., Morgan, T. S., & Weinstein, J. N. (2015). Long-term outcomes of lumbar spinal stenosis: eight-year results of the Spine Patient Outcomes Research Trial (SPORT). *Spine*, *40*(2), 63.

Machado, G. C., Witzleb, A. J., Fritsch, C., Maher, C. G., Ferreira, P. H., & Ferreira, M. L. (2016). Patients with sciatica still experience pain and disability 5 years after surgery: A systematic review with meta-analysis of cohort studies. *European Journal of Pain*, *20*(10), 1700-1709.

Majlesi, J., Togay, H., Ünalán, H., & Toprak, S. (2008). The sensitivity and specificity of the Slump and the Straight Leg Raising tests in patients with lumbar disc herniation. *JCR: Journal of Clinical Rheumatology*, *14*(2), 87-91.

Mamin, F. A., & Hayes, R. (2018). Physiotherapy in Bangladesh: inequality Begets inequality. *Frontiers in public health*, *6*, 80.

McMorland, G., Suter, E., Casha, S., du Plessis, S. J., & Hurlbert, R. J. (2010). Manipulation or microdiscectomy for sciatica? A prospective randomized clinical study. *Journal of manipulative and physiological therapeutics*, *33*(8), 576-584.

Meucci, R. D., Fassa, A. G., & Faria, N. M. X. (2015). Prevalência de dor lombar crônica: revisão sistemática. *Revista de Saúde Pública*, 49, 73-73.

Miot, H. A. (2011). Sample size in clinical and experimental trials. *Jornal Vascular Brasileiro*, 10(4), 275-278.

Niskanen, R. O. (2002). The Oswestry low back pain disability questionnaire a two-year follow-up of spine surgery patients. *Scandinavian Journal of Surgery*, 91(2), 208-211.

Oosterhuis, T., Ostelo, R. W., van Dongen, J. M., Peul, W. C., de Boer, M. R., Bosmans, J. E., ... & van Tulder, M. W. (2017). Early rehabilitation after lumbar disc surgery is not effective or cost-effective compared to no referral: a randomised trial and economic evaluation. *Journal of physiotherapy*, 63(3), 144-153.

Ostelo, R. W., Costa, L. O. P., Maher, C. G., de Vet, H. C., & van Tulder, M. W. (2008). Rehabilitation after lumbar disc surgery. *Cochrane Database of Systematic Reviews*, (4).

Petersen, T., Laslett, M., & Juhl, C. (2017). Clinical classification in low back pain: best-evidence diagnostic rules based on systematic reviews. *BMC musculoskeletal disorders*, 18(1), 188.

Peul, W. C., Van Houwelingen, H. C., van den Hout, W. B., Brand, R., Eekhof, J. A., Tans, J. T., ... & Koes, B. W. (2007). Surgery versus prolonged conservative treatment for sciatica. *New England Journal of Medicine*, 356(22), 2245-2256.

Pfirschmann, C. W., Dora, C., Schmid, M. R., Zanetti, M., Hodler, J., & Boos, N. (2004). MR image-based grading of lumbar nerve root compromise due to disk herniation: reliability study with surgical correlation. *Radiology*, 230(2), 583-588.

Poiraudeau, S., Foltz, V., Drapé, J. L., Fermanian, J., Lefèvre-Colau, M. M., Mayoux-Benhamou, M. A., & Revel, M. (2001). Value of the bell test and the hyperextension test for diagnosis in sciatica associated with disc herniation: comparison with Lasegue's sign and the crossed Lasegue's sign. *Rheumatology*, *40*(4), 460-466.

Proietti, L., Scaramuzza, L., Schiro, G. R., Sessa, S., & Logroscino, C. A. (2013). Complications in lumbar spine surgery: a retrospective analysis. *Indian journal of orthopaedics*, *47*(4), 340.

Rabin, A., Gerszten, P. C., Karausky, P., Bunker, C. H., Potter, D. M., & Welch, W. C. (2007). The sensitivity of the seated straight-leg raise test compared with the supine straight-leg raise test in patients presenting with magnetic resonance imaging evidence of lumbar nerve root compression. *Archives of physical medicine and rehabilitation*, *88*(7), 840-843.

Rabin, A., Gerszten, P. C., Karausky, P., Bunker, C. H., Potter, D. M., & Welch, W. C. (2007). The sensitivity of the seated straight-leg raise test compared with the supine straight-leg raise test in patients presenting with magnetic resonance imaging evidence of lumbar nerve root compression. *Archives of physical medicine and rehabilitation*, *88*(7), 840-843.

Rahman, M., Islam, K., Islam, M., Haque, M., Devnath, H., Hossain, M., & Barua, K. (2016). Association between clinically diagnosed lumbar intervertebral disc prolapse and magnetic resonance image findings. *Bangabandhu Sheikh Mujib Medical University Journal*, *9*(3), 146-150. <https://doi.org/10.3329/bsmmuj.v9i3.29459>

- Rahman, M., Uddin, M., & Ahsanulla, M. (2008). Management of Sciatica: Conservative Versus Surgical. *Journal of Bangladesh College of Physicians and Surgeons*, 26(3), 142-146. <https://doi.org/10.3329/jbcps.v26i3.4198>
- Rasmussen, S., Krum-Møller, D. S., Lauridsen, L. R., Jensen, S. E. H., Mandøe, H., Gerlif, C., & Kehlet, H. (2008). Epidural steroid following discectomy for herniated lumbar disc reduces neurological impairment and enhances recovery: a randomized study with two-year follow-up. *Spine*, 33(19), 2028-2033.
- Reddington, M., Walters, S. J., Cohen, J., & Baxter, S. (2017). Does early intervention improve outcomes in physiotherapy management of lumbar radicular syndrome? A mixed-methods study protocol. *BMJ open*, 7(3), e014422.
- Santilli, V., Beghi, E., & Finucci, S. (2006). Chiropractic manipulation in the treatment of acute back pain and sciatica with disc protrusion: a randomized double-blind clinical trial of active and simulated spinal manipulations. *The Spine Journal*, 6(2), 131-137.
- Schoeggl, A., Reddy, M., & Matula, C. (2003). Functional and economic outcome following microdiscectomy for lumbar disc herniation in 672 patients. *Clinical Spine Surgery*, 16(2), 150-155.
- Sedighi, M., & Haghnegahdar, A. (2014). Lumbar disk herniation surgery: outcome and predictors. *Global spine journal*, 4(04), 233-244.
- Shakoor, M. A., Islam, M. A., Ullah, M. A., Ahmed, M. M., & Hasan, S. A. (2007). Clinical Profile of patients with Chronic Low Back Pain- A Case study of 102 Cases. *Journal of Chittagong Medical College Teachers' Association*, 18 (2), 16-20

Summers, B., Mishra, V., & Jones, J. M. (2009). The flip test: a reappraisal. *Spine*, *34*(15), 1585-1589.

Svensson, G. L., Wendt, G. K., Thomeé, R., & Danielson, E. (2013). Patients' experience of health three years after structured physiotherapy or surgery for lumbar disc herniation. *Journal of rehabilitation medicine*, *45*(3), 293-299.

Thiese, M. S. (2014). Observational and interventional study design types; an overview. *Biochemia medica: Biochemia medica*, *24*(2), 199-210.

Tosteson, A. N., Skinner, J. S., Tosteson, T. D., Lurie, J. D., Andersson, G., Berven, S., ... & Weinstein, J. N. (2008). The cost effectiveness of surgical versus non-operative treatment for lumbar disc herniation over two years: evidence from the Spine Patient Outcomes Research Trial (SPORT). *Spine*, *33*(19), 2108.

Tuck, A. N., Scribani, M. B., Grainger, S. D., Johns, C. A., & Knight, R. Q. (2018). The 9-Item Patient Health Questionnaire (PHQ-9): an aid to assessment of patient-reported functional outcomes after spinal surgery. *The Spine Journal*, *18*(8), 1398-1405.

Unlu, Z., Tasci, S., Tarhan, S., Pabuscu, Y., & Islak, S. (2008). Comparison of 3 physical therapy modalities for acute pain in lumbar disc herniation measured by clinical evaluation and magnetic resonance imaging. *Journal of manipulative and physiological therapeutics*, *31*(3), 191-198.

Veresciagina, K., Spakauskas, B., & Ambrozaitis, K. V. (2010). Clinical outcomes of patients with lumbar disc herniation, selected for one-level open-discectomy and microdiscectomy. *European spine journal*, *19*(9), 1450-1458.

Verwoerd, A. J. H., Luijsterburg, P. A. J., Lin, C. W., Jacobs, W. C. H., Koes, B. W., & Verhagen, A. P. (2013). Systematic review of prognostic factors predicting outcome in non-surgically treated patients with sciatica. *European journal of pain*, 17(8), 1126-1137.

Vialle, L. R., Vialle, E. N., Henao, J. E. S., & Giraldo, G. (2010). ARTIGO DE ATUALIZAÇãO. *Rev Bras Ortop*, 45(1), 17-22.

Vik, A., Zwart, J. A., Hulleberg, G., & Nygaard, Ø. P. (2001). Eight year outcome after surgery for lumbar disc herniation: a comparison of reoperated and not reoperated patients. *Acta neurochirurgica*, 143(6), 607-611.

Vishwanathan, K., & Braithwaite, I. (2019). Comparative responsiveness of four visual analogue scales in microdiscectomy for lumbar disc herniation. *European Journal of Orthopaedic Surgery & Traumatology*, 1-6.

Vucetic, N., & Svensson, O. (1996). Physical signs in lumbar disc hernia. *Clinical orthopaedics and related research*, (333), 192-201.

Weinstein, J. N., Lurie, J. D., Tosteson, T. D., Skinner, J. S., Hanscom, B., Tosteson, A. N., ... & Deyo, R. A. (2006). Surgical vs nonoperative treatment for lumbar disk herniation: the Spine Patient Outcomes Research Trial (SPORT) observational cohort. *Jama*, 296(20), 2451-2459.

Weinstein, J. N., Lurie, J. D., Tosteson, T. D., Tosteson, A. N., Blood, E., Abdu, W. A., ... & Fischgrund, J. (2008). Surgical versus non-operative treatment for lumbar disc herniation: four-year results for the Spine Patient Outcomes Research Trial (SPORT). *Spine*, 33(25), 2789.

Weinstein, J. N., Tosteson, T. D., Lurie, J. D., Tosteson, A. N., Hanscom, B., Skinner, J. S., ... & Deyo, R. A. (2006). Surgical vs nonoperative treatment for lumbar disk herniation: the Spine Patient Outcomes Research Trial (SPORT): a randomized trial. *Jama*, 296(20), 2441-2450.


Williamson, E. (2006). Fear avoidance beliefs questionnaire (FABQ). *Aust J Physiother*, 52(2), 149.

Woolf, A. D., & Pfleger, B. (2003). Burden of major musculoskeletal conditions. *Bulletin of the World Health Organization*, 81, 646-656.

Yadav, Y. R., Parihar, V., Namdev, H., Agarwal, M., & Bhatele, P. R. (2013). Endoscopic interlaminar management of lumbar disc disease. *Journal of Neurological Surgery Part A: Central European Neurosurgery*, 74(02), 077-081.

Annexure

Annexure A: IRB approval Letter

**বাংলাদেশ হেল্থ প্রফেশন ইনস্টিটিউট (বিএইচপিআই)**
Bangladesh Health Professions Institute (BHPI)
(The Academic Institute of CRP)

Ref. CRP-BHPI/IRB/12/18/1284 Date: 02/12/2018

To,
Kazi Md. Amran Hossain
M.Sc. in Physiotherapy(MPT)
Session: 2017-2018, Student ID 111170043
BHPI, CRP-Savar, Dhaka-1343, Bangladesh

Subject: Approval of thesis proposal “**Outcome of Physiotherapy Management of lumbar disc herniation in post- surgical patients attended at CRP**” by ethics committee.

Dear K M Amran,

Congratulations,

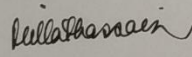
The Institutional Review Board (IRB) of BHPI has reviewed the above mentioned thesis, with yourself, as the Principal Investigator” The Following documents have been reviewed and approved:

S.N.	Name of Documents
1.	Thesis Proposal
2.	Questionnaire (Bengali & English version)
3.	Information sheet & consent form.

Since the study involves use of **Visual Analogue Scale, Oswestry Low Back Pain Disability Questionnaire, Fear-Avoidance Beliefs Questionnaire (FABQ), Sciatica Bothersome index, Patient health questionnaire-9 and open ended questionnaire** to explore the outcome of physiotherapy for post-surgical PLID patients that may take 15 to 20 minutes to answer and fill in the questionnaire by assessors. Since, there is no likelihood of any harm to the participants, the members of the Ethics committee have approved the study to be conducted in the presented form at the meeting held at 08.30 AM on 25th September, 2018 at BHPI.

The institutional Ethics committee expects to be informed about the progress of the study, any changes occurring in the course of the study, any revision in the protocol and patient information or informed consent and ask to be provided a copy of the final report. This Ethics committee is working accordance to Nuremberg Code 1947, World Medical Association Declaration of Helsinki, 1964 - 2013 and other applicable regulation.

Best regards,


Muhammad Millat Hossain
Assistant Professor, Dept. of Rehabilitation Science
Member Secretary, Institutional Review Board (IRB)
BHPI, CRP, Savar, Dhaka-1343, Bangladesh

সিআরপি-চাপাইন, সাভার, ঢাকা-১৩৪৩, বাংলাদেশ, ফোন : ৭৭৪৫৪৬৪-৫, ৭৭৪১৪০৪ ফ্যাক্স : ৭৭৪৫০৬৯
CRP-Chapain, Savar, Dhaka-1343, Tel : 7745464-5, 7741404, Fax : 7745069, E-mail : contact@crp-bangladesh.org, www.crp-bangladesh.org

Annexure B: Permission of Data Collection

December 3, 2018

To
Head of the Department
Department of Physiotherapy
CRP, Savar, Dhaka-1343

Subject: Regarding permission to collect data from physiotherapy department to conduct a research project.

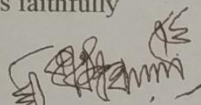
Sir,

I am Kazi Md. Amran Hossain, a Part II MSc in Physiotherapy Student of Bangladesh Health Professions Institute (BHPI) seeking your permission to conduct my academic thesis entitled "Outcome of Physiotherapy Management of lumbar disc herniation in post- surgical patients attended at CRP" supervised by Mohammad Habibur Rahman, Associate Professor of Physiotherapy, BHPI.

It is a mixed type of research study. Data will be collected from outdoor patients of Physiotherapy department at CRP- Savar and sub centers in baseline and after 12 sessions. Data collectors will receive informed consents from all participants. Now I am looking for your kind approval to start my data collection. I would like to assure that anything of my research project will not be harmful for the participants.

Therefore I look forward to your cooperation by giving me permission for data collection at physiotherapy department of CRP-Savar and sub-centers.

Yours faithfully



(Kazi Md. Amran Hossain)

Part-II, M. Sc. in physiotherapy
Program Session: 2017-18

Roll: 03

BHPI, CRP, Savar, Dhaka-1343

Forwarded
Habib
3.12.18

Approved
Anwar
03/12/18

Mohammad Anwar Hossain
Associate Professor & Head
Physiotherapy Dept., CRP
-RP, Chhapain, Savar, Dhaka-1343

Annexure C: Informed Consent (English)

Informed Consent

Health Care Centre: Centre for the Rehabilitation of the Paralyzed (CRP), Savar and Mirpur

Assalamualikum/Namasker, my name is Kazi Md. Amran Hossain; I am doing M. Sc in Physiotherapy from the Bangladesh Health profession Institute. With the help of my supervisor, I am conducting a research project which is a part of my course curriculum. That is entitled as “Outcome of Physiotherapy Interventions among Patients having Post-Surgical Lumbar Disc Herniation Attended at CRP”.

The aim of the study is to identify the outcome of physiotherapy treatment in post-operative cases of lumbar disc herniation. The design of this study is mixed method where one arm prior and post experimental study design and qualitative content analysis has been planned; Data will be collected by structured questionnaire. If you agree to participate, then I will ask you some question that would take maximum 15-20 minutes one time and need repeat with a possible audio recorded interview. If you feel any discomfort or uncomfortable or want to skip a question, and then just tell me I will go on. You will be not paid for the participation of my study.

The participants have the right to withdrawal consent and discontinue participation at any time. Information of this s study will be collected and never be shared with others without participant’s permission. Information will be kept safely and confidentiality will be maintained. The participants do not get direct benefit from the study but we hope we will identify the effectiveness of physiotherapy treatment for post-surgical lumbar disc herniation patients. If you have any question about the research, please make a query to me or my data collector Ahnaf Al Mukit.

I agree to participate in the research project without any force

Signature of the patient: ----- Date: -----

Signature of the Interviewer: ----- Date: -----

Signature of the Witness: ----- Date: -----

2.5 Family size:

1. Small family 2. Large family

2.7 Number of household income:

2.8 Household expense:

2.9 weekly exercise

2.10 chronicity /onset (Month)

2.11 Job duration

2.12 Domestic work duration

2.13 Past medical History

1. DM 2. HTN 3. Others 4. More than one condition

Duration

2.14 Medication history

Analgesic

Sedative

Others

None

2.15 Financial solvency

Part: 3- Surgery related questionnaire

3.1 Onset:

3.2 Date of Surgery:

3.3 Name of Surgery:

3.4 Reason for surgery: of Surgery:

3.5 level of Surgery:

3.6 Place of Surgery:

3.7 Surgeon specialty:

3.8 Approximate amount of Surgery:

3.9 Symptom relapse after surgery (Days):

3.10 Referral source of Physiotherapy:

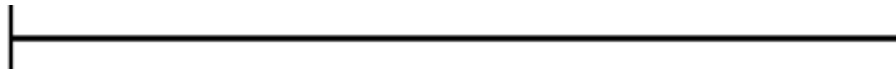
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“Outcome of Physiotherapy Interventions among Patients having Post-Surgical Lumbar Disc Herniation Attended at CRP”

Pre-Test Assessment

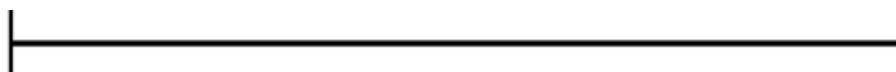
Part: 4.1 – current Pain status

4.1.1 How bad is your pain now?



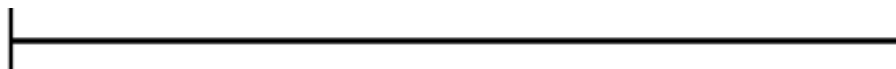
No pain Worst possible
pain

4.1.2 How bad is your pain when it is worse?



No pain Worst possible
pain

4.1.3 How bad is your pain when it is less?



No pain Worst possible
pain

Part: 4.2 -Oswestry Low Back Pain Disability Questionnaire

4.2. 1: Pain Intensity

- I can tolerate the pain I have without having to use pain killers.
- The pain is bad but I manage without taking pain killers.
- Medicine give complete relief from pain.
- Medicine give moderate relief from pain.
- Medicine give very little relief from pain.
- Medicine have no effect on the pain and I do not use them.

4.2. 2: Personal Care

- I can look after myself normally without causing extra pain.

- I can look after myself normally but it causes extra pain.
- It is painful to look after myself and I am slow and careful.
- I need some help but manage most of my personal care.
- I need help every day in most aspects of self care.
- I do not get dressed wash with difficulty and stay in bed.

4.2. 3: Lifting

- I can lift heavy weights without extra pain.
- I can lift heavy weights but it gives extra pain.
- Pain prevents me from lifting heavy weights off the floor but I can manage if they are conveniently positioned for example on a table.
- Pain prevents me from lifting heavy weights but I can manage light to medium weights if they are conveniently positioned.
- I can lift only very light weights.
- I cannot lift or carry anything at all.

4.2. 4: Walking

- Pain does not prevent me walking any distance
- Pain prevents me walking more than 1 mile
- Pain prevents me walking more than 0.5 miles
- Pain prevents me walking more than 0.25 miles
- I can only walk using a stick or crutches
- I am in bed most of the time and have to crawl to the toilet.

4.2. 5: Sitting

- I can sit in any chair as long as I like
- I can only sit in my favorite chair as long as I like
- Pain prevents me sitting more than 1 hour
- Pain prevents me from sitting more than 0.5 hours
- Pain prevents me from sitting more than 10 minutes
- Pain prevents me from sitting at all

4.2. 6: Standing

- I can stand as long as I want without extra pain.
- I can stand as long as I want but it gives me extra pain.
- Pain prevents me from standing for more than 1 hour
- Pain prevents me from standing for more than 30 minutes
- Pain prevents me from standing for more than 10 minutes

- Pain prevents me from standing at all

4.2. 7: Sleeping

- Pain does not prevent me from sleeping well.
- I can sleep well only by using tablets.
- Even when I take tablets I have less than 6 hours sleep.
- Even when I take tablets I have less than 4 hours sleep.
- Even when I take tablets I have less than 2 hours of sleep.
- Pain prevents me from sleeping at all.

4.2. 8: Sex Life

- My sex life is normal and causes no extra pain.
- My sex life is normal but causes some extra pain.
- My sex life is nearly normal but is very painful.
- My sex life is severely restricted by pain.
- My sex life is nearly absent because of pain.
- Pain prevents any sex life at all.

4.2. 9: Social Life

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

4.2. 10: Traveling

- I can travel anywhere without extra pain.
- I can travel anywhere but it gives me extra pain.
- Pain is bad but I manage journeys over 2 hours.
- Pain restricts me to journeys of less than 1 hour.
- Pain restricts me to short necessary journeys under 30 minutes.
- Pain prevents me from traveling except to the doctor or hospital.

Part: 4.3- Fear-Avoidance Beliefs Questionnaire

	Completely disagree	Unsure	Completely agree
1 My pain is caused by physical activity	0 1 2	3 4 5	6
2 Physical activity makes my pain worse	0 1 2	3 4 5	6
3 Physical activity might harm my back	0 1 2	3 4 5	6
4 I should not do physical activities which might Make my pain worse	0 1 2	3 4 5	6
5 I cannot do physical activities which (might) make my pain worse	0 1 2	3 4 5	6
6 My pain was caused by my work or by an accident	0 1 2	3 4 5	6
7 My work aggravated my pain	0 1 2	3 4 5	6
8 I have a claim for compensation for my pain	0 1 2	3 4 5	6
9 My work is too heavy for me	0 1 2	3 4 5	6

10 My work makes or would make my pain worse	0	1	2	3	4	5	6
11 My work might harm my back.	0	1	2	3	4	5	6
12 I should not do my normal work with my present pain	0	1	2	3	4	5	6
13 I cannot do my normal work with my present pain	0	1	2	3	4	5	6
14 I cannot do my normal work till my pain is treated	0	1	2	3	4	5	6
15 I do not think that I will be back to my normal work within 3 months	0	1	2	3	4	5	6
16 I do not think that I will ever be able to go back	0	1	2	3	4	5	6

Part: 4.4- Sciatica Bothersome Index

	Not bothersome			somewhat bothersome			extremely bothersome
1 Do you feel leg pain	0	1	2	3	4	5	6
2 Do you feel numbness- Tingling sensation in leg	0	1	2	3	4	5	6
3 Do you feel weakness in leg	0	1	2	3	4	5	6
4 Do you feel back pain or leg pain in sitting	0	1	2	3	4	5	6

Part 4.5: Patient Health Questionnaire PHQ-9

Over the last 2 weeks how long have you been bothered by any of the following questions?	Not at all	Several days	More than half of days	Nearly every day
1 Little interest or pleasure in doing things	0	1	2	3
2 Feeling down, depressed or hopeless	0	1	2	3
3 Trouble falling or staying asleep or sleeping too much	0	1	2	3
4 Feeling tired or having little energy	0	1	2	3
5 Poor appetite or overeating	0	1	2	3
6 Feeling bad about yourself- or that you are failure or have let yourself or your family	0	1	2	3
7 Trouble concentrating on things, such as reading newspaper or watching television	0	1	2	3
8 Moving or speaking so slowly that other people could have noticed. Or the opposite- being so figety or restless that you have been moving around a lot more than usual	0	1	2	3

We will collect data after 12 sessions

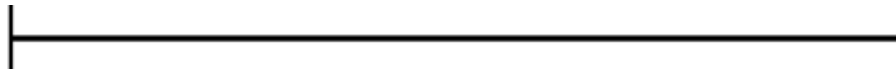
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Post-Test Assessment

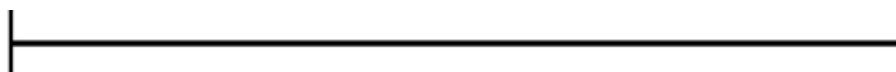
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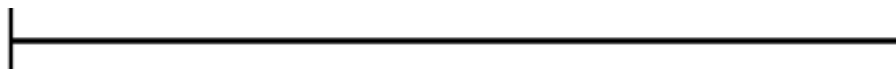
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- Pain prevents me from standing for more than 10 minutes

- Pain prevents me from standing at all

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3 Physical activity might harm my back	0 1 2	3 4 5	6
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5 I cannot do physical activities which (might) make my pain worse	0 1 2	3 4 5	6
6 My pain was caused by my work or by an accident	0 1 2	3 4 5	6
7 My work aggravated my pain	0 1 2	3 4 5	6
8 I have a claim for compensation for my pain	0 1 2	3 4 5	6
9 My work is too heavy for me	0 1 2	3 4 5	6

10 My work makes or would make my pain worse	0	1	2	3	4	5	6
11 My work might harm my back.	0	1	2	3	4	5	6
12 I should not do my normal work with my present pain	0	1	2	3	4	5	6
13 I cannot do my normal work with my present pain	0	1	2	3	4	5	6
14 I cannot do my normal work till my pain is treated	0	1	2	3	4	5	6
15 I do not think that I will be back to my normal work within 3 months	0	1	2	3	4	5	6
16 I do not think that I will ever be able to go back	0	1	2	3	4	5	6

Part: 4.4- Sciatica Bothersome Index

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2 Do you feel numbness- Tingling sensation in leg	0	1	2	3	4	5	6
3 Do you feel weakness in leg	0	1	2	3	4	5	6
4 Do you feel back pain or leg pain in sitting	0	1	2	3	4	5	6

Part 4.5: Patient Health Questionnaire PHQ-9

Over the last 2 weeks how long have you been bothered by any of the following questions?	Not at all	Several days	More than half of days	Nearly every day
1 Little interest or pleasure in doing things	0	1	2	3
2 Feeling down, depressed or hopeless	0	1	2	3
3 Trouble falling or staying asleep or sleeping too much	0	1	2	3
4 Feeling tired or having little energy	0	1	2	3
5 Poor appetite or overeating	0	1	2	3
6 Feeling bad about yourself- or that you are failure or have let yourself or your family	0	1	2	3
7 Trouble concentrating on things, such as reading newspaper or watching television	0	1	2	3
8 Moving or speaking so slowly that other people could have noticed. Or the opposite- being so figety or restless that you have been moving around a lot more than usual	0	1	2	3

Code No:

“Outcome of Physiotherapy Interventions among Patients having Post-Surgical Lumbar Disc Herniation Attended at CRP”

Interview

- 6.1 How do you feel now?
- 6.2 How do you evaluate current experience and post-surgical experience?
- 6.3 How do you evaluate your surgical experience?
- 6.4 If you would not do surgery and received physiotherapy what could possibly happen?
- 6.5 How do you evaluate cost effectiveness of surgery?
- 6.6 How do you evaluate cost-effectiveness of physiotherapy?
- 6.7 What is your opinion about CRP's service?
- 6.8 What is your opinion about awareness regarding Physiotherapy in lumbar disc herniation?
- 6.9 How do you compare CRP's service to service outside CRP?
- 6.10 What is your advice to new cases of lumbar disc herniation?

Annexure E: Informed Consent (Bangla)

সম্মতিপত্র

গবেষনার নামঃ “সিআরপি তে আগত আপারেশন পরবর্তী লাম্বার ডিস্ক হার্নিয়েশন রোগীদের ফিজিওথেরাপি চিকিৎসার ফলাফল”

আসসালামুআলাইকুম / নমস্কার, আমি কে এম এমরান হোসেন, বাংলাদেশ হেলথ প্রফেশন্স ইন্সটিটিউট (বিএইচপিআই) তে ঢাকা বিশ্ববিদ্যালয়ের চিকিৎসা অনুষদের অধীনে মাস্টার অব সাইন্স ইন ফিজিওথেরাপি কোর্সের দ্বিতীয় পর্বের শিক্ষার্থী। আমি বাংলাদেশ হেলথ প্রফেশন্স ইন্সটিটিউট (বিএইচপিআই) এর ফিজিওথেরাপি বিভাগের সহযোগী অধ্যাপক মোহাম্মাদ হাবিবুর রহমান এর তত্ত্বাবধানে একটি গবেষণা প্রকল্প করছি যার বিষয় হল “সিআরপি তে আগত আপারেশন পরবর্তী লাম্বার ডিস্ক হার্নিয়েশন রোগীদের ফিজিওথেরাপি চিকিৎসার ফলাফল” ।

এই গবেষণাটি আমার শিক্ষা কার্যক্রমের অংশ এবং যদি আপনি অংশগ্রহণে আগ্রহী হন, তাহলে আপনাকে কিছু প্রশ্ন করা হবে। আপনি প্রশ্ন চলাকালীন যেকোনো সময়ই এই প্রশ্নোত্তর পর্ব ত্যাগ করতে পারবেন। এই তথ্য উপাত্ত নিরাপদে রাখা হবে ও আপনার অনুমতি ব্যতিত অন্য কাউকে প্রদান করা হবে না। প্রথম সাক্ষাতে সমগ্র প্রশ্নপত্রটি সম্পাদন করতে ১০ মিনিট সময় লাগতে পারে, ১২ সেশন পর দ্বিতীয় সাক্ষাতে ১৫ মিনিট সময় লাগতে পারে। আপনি ছকে বর্ণিত প্রশ্নের নির্দেশনা অনুসরণ করুন, প্রয়োজনে উত্তর লিখাতে কারো সাহায্য নিন, কিছু অংশ আপনার ফিজিওথেরাপি চিকিৎসক সম্পাদন করবেন। আমরা আশা করছি যে, এই গবেষণার মাধ্যমে আমরা সিআরপি তে আগত আপারেশন পরবর্তী লাম্বার ডিস্ক হার্নিয়েশন রোগীদের ফিজিওথেরাপি চিকিৎসার ফলাফল নিরূপন করতে পারব।

আপনার যদি এই গবেষণা সম্পর্কে কিছু জানার থাকে তাহলে আপনি ফোনে (০১৭৩৫৬৬১৪৯২) আমার নিকট থেকে জেনে নিতে পারেন অথবা আমার গবেষণা সহযোগী জনাব আহনাফ আল মুকিত (০১৯১২৯৫১৬৯৩) এর সাথে সংযুক্ত হতে পারেন। আপনি কি স্বেচ্ছায় এ গবেষণা প্রকল্পে অংশগ্রহণ করতে রাজি আছেন? থাকলে সামনে অগ্রসর হোন।

কোড নংঃ

আংশগ্রহনকারীর ফোন নাম্বারঃ

অংশগ্রহণকারীর স্বাক্ষরঃ _____

গবেষকের স্বাক্ষরঃ _____

সাক্ষীর স্বাক্ষরঃ _____

Annexure F: Questionnaire (Bangla)

গবেষনার নামঃ “সিআরপি তে আগত আপারেশন পরবর্তী লাম্বার ডিস্ক হার্নিয়েশন রোগীদের
ফিজিওথেরাপি চিকিৎসার ফলাফল”

প্রশ্নপত্র

অধ্যায় ১ঃ রোগীর পরিচিতি

তারিখঃ	আই ডিঃ	কোড নংঃ	ফোন নংঃ
১.১ বয়সঃ (লিখুন) চিহ্ন দিন)	১.২ লিঙ্গঃ (টিক ১. পুরুষ ২. মহিলা	১.৩ ঠিকানাঃ (লিখুন)	
১.৪ উচ্চতাঃ (লিখুন) (লিখুন)		১.৫ ওজনঃ (লিখুন)	১.৬ বিএমআইঃ

অধ্যায় ২ঃ আর্থ-সামাজিক অবস্থা ও জনসংখ্যাতত্ত্ব

২.১ পেশাঃ (টিক চিহ্ন দিন) ১. কৃষক ৪. গার্মেন্টস কর্মী ৭. ব্যবসায়ী ১০. শিক্ষক ১৩. প্রবাসী চাকুরি	২. দিনমজুর ৫. গাড়ীচালক ৮. বেকার ১১. ছাত্র ১৪. অন্যান্য	৩. চাকুরীজীবী ৬. রিক্সাচালক ৯. গৃহিনী ১২. পেশাজীবী	২.২ বৈবাহিক অবস্থা : (টিক চিহ্ন দিন) ১. বিবাহিত ২. অবিবাহিত ৩. বিধবা বা বিপত্নীক ৪. তলাকপ্রাপ্ত বা আলাদা
২.৩ আবাসস্থলঃ (টিক চিহ্ন দিন) ১. গ্রাম ২. শহর ৩. উপশহর			২.৪ শিক্ষাগত যোগ্যতাঃ (টিক চিহ্ন দিন) ১. কখনো স্কুলে যাইনি ২. প্রাথমিক শিক্ষা ৩. মাধ্যমিক শিক্ষা ৪. উচ্চ মাধ্যমিক শিক্ষা ৫. স্নাতক/ স্নাতকোত্তর
২.৫ পরিবারের আকার (টিক চিহ্ন দিন) ১. ছোট পরিবার ২. যৌথ পরিবার			২.৬ আবাসস্থলঃ (টিক চিহ্ন দিন) ১. গ্রাম ২. শহর ৩. উপশহর
২.৭ পরিবারে উপার্জনক্ষম ব্যক্তির সংখ্যাঃ (লিখুন)			২.৮ পরিবারের মাসিক ব্যয়ঃ (লিখুন)
২.৯ সপ্তাহে আনুমানিক কত ঘন্টা ব্যায়াম করেনঃ (লিখুন)			২.১০ : সারাজীবনে এ অপারেশনের আগে মোট কতমাস যাবত কোমর ব্যথার সমস্যায় ভুগেছেন? (লিখুন)
২.১১ প্রতিদিন কত ঘন্টা বিনোদনে ব্যয় করেন(লিখুন) ১. টেলিভিশনঃ ২. ফেসবুক/ সোশ্যাল মিডিয়াঃ ৩. খেলাধুলাঃ ৪. কোন বিনোদন করি না			২.১২ প্রতিদিন কত ঘন্টা কাজ করেনঃ (লিখুন) ১. চাকুরি বা জীবিকার কাজঃ ২. গৃহস্থালীর কাজঃ ৩. চাকুরি ও গৃহস্থালী উভয় মিলিয়ে কাজঃ ৪. কোন প্রকার কাজই করি না
২.১৩ আপনি বিষন্নতা বা উদ্ভিগ্নতার জন্য কি কোন ঔষধ খান? (টিক চিহ্ন দিন) ১. হ্যা (২.১৪, ২.১৫ ও ২.১৬ প্রশ্ন পূরণ করবেন) ২. না (২.১৪, ২.১৫ ও ২.১৬ প্রশ্ন পূরণ করার প্রয়োজন নেই)			২.১৪ আপনি বিষন্নতা বা উদ্ভিগ্নতার জন্য কি ঔষধ খান? (লিখুন)

<p>৩.৭ সার্জনের স্পেশালিটিঃ</p> <p>১. স্পাইন সার্জন ২. অর্থোপেডিক সার্জন ৩. নিউরো সার্জন</p> <p>৪. লেজার সার্জন ৫. অন্যান্য (লিখুন)</p>	<p>৩.৮ অপারেশনের আনুমানিক ব্যয়ঃ (লিখুন)</p>
<p>৩.৯ অপারেশনের কতদিন পর ব্যথা বা সমস্যা ফিরে এসেছেঃ (লিখুন)</p>	<p>৩.১০ ফিজিওথেরাপি চিকিৎসার জন্য কে রেফার করেছেঃ</p> <p>১. সার্জন ২. অন্য চিকিৎসক ৩. ফিজিওথেরাপিস্ট</p> <p>৪. রোগী ৫. অষ্টীয় ৫. অন্যান্য (লিখুন)</p>

গবেষনার নামঃ “সিআরপি তে আগত আপারেশন পরবর্তী লাম্বার ডিস্ক হার্নিয়েশন রোগীদের ফিজিওথেরাপি চিকিৎসার ফলাফল”

কোড নংঃ

অধ্যায় ৪ঃ ফিজিওথেরাপি চিকিৎসার পূর্ববর্তী অবস্থা নির্ণয়

পর্ব- ৪.১ ব্যথার মাত্রা নির্ণয় (১০ সেন্টিমিটার মাপের দাগে ক্রস চিহ্ন দিন)

৪.১.১ বর্তমানে আপনার ব্যথা কতটুকু?	কোন ব্যথা নেই	অসম্ভব ব্যথা
৪.১.২ যখন সবচেয়ে বেশি ব্যথা হয় তখন কতটুকু ব্যথা থাকে?	কোন ব্যথা নেই	অসম্ভব ব্যথা
৪.১.৩ যখন সবচেয়ে কম ব্যথা থাকে তখন কতটুকু ব্যথা হয়?	কোন ব্যথা নেই	অসম্ভব ব্যথা

পর্ব- ৪.২ প্রতিবন্ধিতার মাত্রা নির্ণয় (যে উত্তরটি আপনার মতামতের সবচেয়ে কাছের তাতে টিক চিহ্ন দিন)

<p>৪.২.১ ব্যথার তীব্রতা</p> <p>০) আমার এই মুহূর্তে কোন ব্যথা নেই</p> <p>১) এই মুহূর্তে ব্যথা খুবই হালকা</p> <p>২) এই মুহূর্তে ব্যথা মধ্যপন্থী</p> <p>৩) এই মুহূর্তে ব্যথা মোটামুটি তীব্র</p> <p>৪) এই মুহূর্তে ব্যথা খুব গুরুতর</p> <p>৫) এই মুহূর্তে ব্যথা অচিন্তনীয়</p>	<p>৪.২.২ ব্যক্তিগত যত্ন (ওয়াশিং, ড্রেসিং ইত্যাদি)</p> <p>০) আমি সাধারণত নিজেই দেখাশুনা করতে পারি, ব্যথা ছাড়া</p> <p>১) আমি সাধারণত নিজেই দেখাশুনা করতে পারি, কিন্তু এটা কিছুটা ব্যথাদায়ক</p> <p>২) নিজেই দেখাশুনা করা ব্যথাদায়ক, কিন্তু আমি কিছুটা সতর্কতা অবলম্বন করি</p> <p>৩) আমার কিছু সাহায্য প্রয়োজন হয়, কিন্তু অধিকাংশ কাজ আমি নিজে করতে পারি</p> <p>৪) আমার নিজের কাজকর্মের জন্য সারাদিন ব্যাপি অন্যের সাহায্যের প্রয়োজন হয়</p> <p>৫) আমি কষ্ট করেও কাপড় পরিষ্কার করতে পারি না এবং বিশ্রামে থাকি</p>
<p>৪.২.৩ উত্তোলন</p> <p>০) আমি অতিরিক্ত ব্যথা ছাড়া ভারী ওজন উত্তোলন করতে পারি</p> <p>১) আমি ভারী ওজন উত্তোলন করতে পারি, কিন্তু এটা কিছুটা ব্যথা তৈরী করে</p> <p>২) আমি ব্যথার জন্য ভারী ওজন উত্তোলন করতে পারি না, কিন্তু আমি সুবিধামত স্থান থেকে ওজন উত্তোলন করতে পারি, যেমন: টেবিল হতে</p> <p>৩) আমি ব্যথার জন্য ভারী ওজন উত্তোলন করতে পারি না, কিন্তু আমি সুবিধামত স্থান থেকে অল্প অথবা মোটামুটি ওজন উত্তোলন করতে পারি</p> <p>৪) আমি খুবই অল্প ওজন উত্তোলন করতে পারি</p> <p>৫) আমি কোন ওজনই উত্তোলন অথবা বহন করতে পারি না</p>	<p>৪.২.৪ হাঁটা</p> <p>০) ব্যথা আমাকে যে কোন দুরত্বে হাঁটার ক্ষেত্রে বাঁধার সৃষ্টি করে না</p> <p>১) ব্যথা আমাকে এক মাইলের বেশি হাটতে বাঁধার সৃষ্টি করে</p> <p>২) ব্যথা আমাকে আধা মাইলের বেশি হাটতে বাঁধার সৃষ্টি করে</p> <p>৩) ব্যথা আমাকে ১০০ গজের বেশি হাটতে বাঁধার সৃষ্টি করে</p> <p>৪) আমি শুধু লাঠি অথবা ক্রাচ ব্যবহার করে হাঁটতে পারি</p> <p>৫) আমি বেশীরভাগে সময়ই বিছানায় থাকি এবং হামাগুড়ি দিয়ে টয়লেটে যাই</p>
<p>৪.২.৫ বসা</p> <p>০) আমি যেকোন চেয়ারে আমার নিজের ইচ্ছামত বসতে পারি</p> <p>১) আমি শুধুমাত্র আমার পছন্দের চেয়ারে নিজের ইচ্ছামত বসতে পারি</p>	<p>৪.২.৬ দাঁড়ানো</p> <p>০) আমি ব্যথা ছাড়া আমার ইচ্ছামত দাঁড়িয়ে থাকতে পারি</p> <p>১) আমি আমার ইচ্ছামত অনেকক্ষণ দাঁড়িয়ে থাকতে পারি, কিন্তু এটা কিছুটা ব্যথার সৃষ্টি করে</p>

২) আমি ব্যথার জন্য একঘন্টার বেশী বসতে পারি না ৩) আমি ব্যথার জন্য আধা ঘন্টার বেশী বসতে পারি না ৪) আমি ব্যথার জন্য ১০ মিনিটের বেশী বসতে পারি না ৫) আমি ব্যথার জন্য সব সময় বসতে পারি না	২) আমি ব্যথার জন্য একঘন্টার বেশী দাড়িয়ে থাকতে পারি না ৩) আমি ব্যথার জন্য আধা ঘন্টার বেশী দাড়িয়ে থাকতে পারি না ৪) আমি ব্যথার জন্য ১০ মিনিটের বেশী দাড়িয়ে থাকতে পারি না ৫) আমি ব্যথার জন্য সব সময় দাড়িয়ে থাকতে পারি না
৪.২.৭ ঘুমানো ০) ব্যথা আমার ঘুমের কোন সমস্যা তৈরী করে না ১) আমি একমাত্র বিছানায় ভালভাবে ঘুমাতে পারি ২) আমি বিছানায় ছয় ঘন্টার কম ঘুমাতে পারি ৩) আমি বিছানায় চার ঘন্টার কম ঘুমাতে পারি ৪) আমি বিছানায় দুই ঘন্টার কম ঘুমাতে পারি ৫) আমি ব্যথার জন্য সবসময় ঘুমাতে পারি না	৪.২.৮ যৌন জীবন ০) আমার যৌন জীবন স্বাভাবিক এবং কোন ব্যথা তৈরী করে না ১) আমার যৌন জীবন স্বাভাবিক এবং কিছুটা ব্যথা তৈরী করে ২) আমার স্বাভাবিক এবং অনেক ব্যথা তৈরী করে ৩) আমার যৌন জীবন ব্যথার জন্য গুরুতরভাবে সীমাবদ্ধ ৪) আমার যৌন জীবন ব্যথার জন্য অনেকটাই গুরুতরভাবে সীমাবদ্ধ ৫) আমার যৌন জীবন ব্যথার জন্য পুরোটাই গুরুতরভাবে সীমাবদ্ধ
৪.২.৯ সামাজিক জীবন ০) আমার সামাজিক জীবন স্বাভাবিক এবং এটা কোন ব্যথা তৈরী করে না ১) আমার সামাজিক জীবন স্বাভাবিক কিন্তু এটা কিছুটা ব্যথা তৈরী করে ২) ব্যথা আমার সামাজিক জীবনের উপর কোন প্রভাব ফেলে না কিন্তু উদ্দিপনামূলক কাজকর্ম হতে বিরত রাখে ৩) ব্যথা আমার সামাজিক জীবনকে বাধাগ্রস্ত করে এবং বাহিরে যেতে পারি না ৪) ব্যথা আমার জীবনকে চার দেয়ালের মধ্যে সীমাবদ্ধ করেছে ৫) ব্যথার জন্য আমার কোন সামাজিক জীবন নেই	৪.২.১০ ভ্রমন ০) আমি ব্যথা ছাড়াই যে কোন জায়গায় ভ্রমন করতে পারি ১) আমি যে কোন জায়গায় ভ্রমন করতে পারি, কিন্তু এটা কিছুটা ব্যথার সৃষ্টি করে ২) আমি অতিরিক্ত ব্যথা নিয়ে দুই ঘন্টার বেশি ভ্রমন করতে পারি ৩) আমি অতিরিক্ত ব্যথা নিয়ে এক ঘন্টার বেশি ভ্রমন করতে পারি ৪) ব্যথার জন্য আমি ত্রিশ মিনিটের বেশি ভ্রমন করতে পারি না ৫) ব্যথার জন্য আমি চিকিৎসার প্রয়োজন ব্যতীত ভ্রমন করি না
মোট স্কোরঃ	প্রতিবন্ধিতার মাত্রাঃ

পর্ব- ৪.৩ ভয় পরিহার বিশ্বাস প্রশ্রাবলী (যে উত্তরটি আপনার মতামতের সবচেয়ে কাছের তাতে টিক চিহ্ন দিন)

	সম্পূর্ণ অসম্মতি	অনিশ্চিত	সম্পূর্ণ একমত
৪.৩.১ শারীরিক কর্মকাণ্ডের জন্য আমার ব্যথা তৈরী হয়েছে	০ ১ ২	৩ ৪ ৫	৬
৪.৩.২ শারীরিক কর্মকাণ্ডে আমার ব্যথাকে খারাপের দিকে নিয়ে যায়	০ ১ ২	৩ ৪ ৫	৬
৪.৩.৩ শারীরিক কর্মকাণ্ড আমার কোমড়ের জন্য ক্ষতিকর	০ ১ ২	৩ ৪ ৫	৬
৪.৩.৪ আমার শারীরিক কর্মকাণ্ড করা উচিত নয় যেটা আমার ব্যথাকে আরো বাড়িয়ে দেয়	০ ১ ২	৩ ৪ ৫	৬
৪.৩.৫ আমি কোন শারীরিক কর্মকাণ্ড করতে পারি না যেটা আমার ব্যথাকে আরো বাড়িয়ে দেয়	০ ১ ২	৩ ৪ ৫	৬
৪.৩.৬ আমার ব্যথা আমার কাজকর্ম দ্বারা অথবা আমার কর্মস্থলে দুর্ঘটনার জন্য তৈরী হয়েছে	০ ১ ২	৩ ৪ ৫	৬

৪.৩.৭ আমার কাজকর্ম আমার ব্যথা বাড়িয়ে দেয়	০	১	২	৩	৪	৫	৬
৪.৩.৮ ব্যথার ক্ষতিপূরণ সংক্রান্ত আমার একটি দাবি আছে	০	১	২	৩	৪	৫	৬
৪.৩.৯ আমার কাজকর্ম আমার জন্য অনেক ভারী	০	১	২	৩	৪	৫	৬
৪.৩.১০ কাজ আমার ব্যথাকে সৃষ্টি করে অথবা খারাপের দিকে নিয়ে যায়	০	১	২	৩	৪	৫	৬
৪.৩.১১ আমার কাজকর্ম আমার কোমড়ের জন্য ক্ষতিকর	০	১	২	৩	৪	৫	৬
৪.৩.১২ আমার বর্তমান ব্যথা নিয়ে আমার স্বাভাবিক কাজকর্ম করা উচিত নয়	০	১	২	৩	৪	৫	৬
৪.৩.১৩ আমি আমার বর্তমান ব্যথা নিয়ে স্বাভাবিক কাজকর্ম করতে পারি না	০	১	২	৩	৪	৫	৬
৪.৩.১৪ আমার ব্যথার চিকিৎসা না করা পর্যন্ত আমার স্বাভাবিক কাজকর্ম করতে পারি না	০	১	২	৩	৪	৫	৬
৪.৩.১৫ আমি তিনমাসের মধ্যে আমার স্বাভাবিক কাজকর্ম করার কথা চিন্তা করতে পারি না	০	১	২	৩	৪	৫	৬
৪.৩.১৬ আমি আর কাজে ফিরে যেতে সক্ষম হব বলে মনে করতে পারি না	০	১	২	৩	৪	৫	৬
মোট স্কোরঃ							

পর্ব- ৪.৪ সায়েটিকা বোদারসম মাত্রা নির্ণয় (যে উত্তরটি আপনার মতামতের সবচেয়ে কাছের তাতে টিক চিহ্ন দিন)

	বিরক্তির নয়			কিছুটা বিরক্তির			সম্পূর্ণ বিরক্তির
৪.৪.১ আপনি কি পায়ে ব্যথা অনুভব করেন ?	০	১	২	৩	৪	৫	৬
৪.৪.২ আপনি পায়ে অবশ অবশ অথবা বি বি অনুভব করেন ?	০	১	২	৩	৪	৫	৬
৪.৪.৩ আপনি কি পায়ে দুর্বলতা অনুভব করেন ?	০	১	২	৩	৪	৫	৬
৪.৪.৪ আপনি কি বসা অবস্থায় কোমড় ব্যথা অথবা পায়ে ব্যথা অনুভব করেন ?	০	১	২	৩	৪	৫	৬

পর্ব- ৪.৫ বিষন্নতার মাত্রা নির্ণয় (গত ২ সপ্তাহের মধ্যে আপনি কতটা ঘন ঘন নিম্নোক্ত সমস্যায় পড়েছেন তাতে টিক চিহ্ন দিন)

ক্রমিক নং	একদমই না	কয়েকদিন	অর্ধেকর ও বেশীদিন	প্রায় প্রতিদিনই
৪.৫.১ কাজ করতে অল্প আশ্রয় বা অনন্দ পান	০	১	২	৩
৪.৫.২ মনখারাপ, বিষন্ন বা আশাহীন মনে হয় নিজেকে	০	১	২	৩
৪.৫.৩ আপনার ঘুমাতে অসুবিধা হয় বা বেশি ঘুম হয়	০	১	২	৩
৪.৫.৪ ক্লান্ত লাগে বা অল্প এনার্জী বা শক্তি পান	০	১	২	৩
৪.৫.৫ খাবার খেতে ইচ্ছা করেনা বা বেশী খাওয়া হয়	০	১	২	৩
৪.৫.৬ নিজেকে ছোট লাগে- নিজেকে ব্যর্থ মনে হয় বা মনে হয় আপনি আপনার পারিবার বা নিজেকে ছোট	০	১	২	৩

করছেন				
৪.৫.৭ কোন কিছুতে মনোযোগ দেয়া সমস্যা হয়- যেমন সংবাদপত্র পড়া বা টেলিভিশন দেখা	০	১	২	৩
৪.৫.৮ এত আশ্তে চলাফেরা করেন বা কথা বলেন যে অন্য মানুষেরা সেটা লক্ষ্য করে না বা একবোরে উল্টা, এতটাই চঞ্চল যে আপনি সাধারণ মানুষের চেয়ে বেশী চলাফেরা করেন	০	১	২	৩
৪.৫.৯ আপনার মনে হয় যে মরে গেলে ভাল বা নিজেকে নিজে আঘাত করলে ভাল	০	১	২	৩
মোট স্কোরঃ				

অসংখ্য ধন্যবাদ, ১২ সেশন ফিজিওথেরাপি চিকিৎসার পর আপনার সাথে আশা করি আবার দেখা হবে

গবেষনার নামঃ “সিআরপি তে আগত আপারেশন পরবর্তী লাম্বার ডিস্ক হার্নিয়েশন রোগীদের ফিজিওথেরাপি চিকিৎসার ফলাফল”

কোড নংঃ

অধ্যায় ৫ঃ ফিজিওথেরাপি চিকিৎসার পরবর্তী অবস্থা নির্ণয়

পর্ব- ৫.১ ব্যথার মাত্রা নির্ণয় (১০ সেন্টিমিটার মাপের দাগে ক্রস চিহ্ন দিন)

৫.১.১ বর্তমানে আপনার ব্যথা কতটুকু?	কোন ব্যথা নেই	অসম্ভব ব্যথা
৫.১.২ যখন সবচেয়ে বেশি ব্যথা হয় তখন কতটুকু ব্যথা থাকে?	কোন ব্যথা নেই	অসম্ভব ব্যথা
৫.১.৩ যখন সবচেয়ে কম ব্যথা থাকে তখন কতটুকু ব্যথা হয়?	কোন ব্যথা নেই	অসম্ভব ব্যথা

পর্ব- ৫.২ প্রতিবন্ধিতার মাত্রা নির্ণয় (যে উত্তরটি আপনার মতামতের সবচেয়ে কাছের তাতে টিক চিহ্ন দিন)

৫.২.১ ব্যথার তীব্রতা ০) আমার এই মুহূর্তে কোন ব্যথা নেই ১) এই মুহূর্তে ব্যথা খুবই হালকা ২) এই মুহূর্তে ব্যথা মধ্যপন্থী ৩) এই মুহূর্তে ব্যথা মোটামুটি তীব্র ৪) এই মুহূর্তে ব্যথা খুব গুরুতর ৫) এই মুহূর্তে ব্যথা অচিন্তনীয়	৫.২.২ ব্যক্তিগত যত্ন (ওয়াশিং,ড্রেসিং ইত্যাদি) ০) আমি সাধারণত নিজেকে দেখাশুনা করতে পারি, ব্যথা ছাড়া ১) আমি সাধারণত নিজেকে দেখাশুনা করতে পারি, কিন্তু এটা কিছুটা ব্যথাদায়ক ২) নিজেকে দেখাশুনা করা ব্যথাদায়ক, কিন্তু আমি কিছুটা সতর্কতা অবলম্বন করি ৩) আমার কিছু সাহায্য প্রয়োজন হয়, কিন্তু অধিকাংশ কাজ আমি নিজে করতে পারি ৪) আমার নিজের কাজকর্মের জন্য সারাদিন ব্যাপি অন্যের সাহায্যের প্রয়োজন হয় ৫) আমি কষ্ট করেও কাপড় পরিস্কার করতে পারি না এবং বিশ্রামে থাকি
৫.২.৩ উত্তোলন ০) আমি অতিরিক্ত ব্যথা ছাড়া ভারী ওজন উত্তোলন	৫.২.৪ হাঁটা ০) ব্যথা আমাকে যে কোন দূরত্বে হাঁটার ক্ষেত্রে বাঁধার সৃষ্টি

<p>করতে পারি</p> <p>১) আমি ভারী ওজন উত্তোলন করতে পারি, কিন্তু এটা কিছুটা ব্যথা তৈরী করে</p> <p>২) আমি ব্যথার জন্য ভারী ওজন উত্তোলন করতে পারি না, কিন্তু আমি সুবিধামত স্থান থেকে ওজন উত্তোলন করতে পারি, যেমন: টেবিল হতে</p> <p>৩) আমি ব্যথার জন্য ভারী ওজন উত্তোলন করতে পারি না, কিন্তু আমি সুবিধামত স্থান থেকে অল্প অথবা মোটামুটি ওজন উত্তোলন করতে পারি</p> <p>৪) আমি খুবই অল্প ওজন উত্তোলন করতে পারি</p> <p>৫) আমি কোন ওজনই উত্তোলন অথবা বহন করতে পারি না</p>	<p>করে না</p> <p>১) ব্যথা আমাকে এক মাইলের বেশি হাটতে বাঁধার সৃষ্টি করে</p> <p>২) ব্যথা আমাকে আধা মাইলের বেশি হাটতে বাঁধার সৃষ্টি করে</p> <p>৩) ব্যথা আমাকে ১০০ গজের বেশি হাটতে বাঁধার সৃষ্টি করে</p> <p>৪) আমি শুধু লাঠি অথবা ক্রাচ ব্যবহার করে হাটতে পারি</p> <p>৫) আমি বেশীরভাগে সময়ই বিছানায় থাকি এবং হামাগুড়ি দিয়ে টয়লেটে যাই</p>
<p>৫.২.৫ বসা</p> <p>০) আমি যেকোন চেয়ারে আমার নিজের ইচ্ছামত বসতে পারি</p> <p>১) আমি শুধুমাত্র আমার পছন্দের চেয়ারে নিজের ইচ্ছামত বসতে পারি</p> <p>২) আমি ব্যথার জন্য একঘন্টার বেশী বসতে পারি না</p> <p>৩) আমি ব্যথার জন্য আধা ঘন্টার বেশী বসতে পারি না</p> <p>৪) আমি ব্যথার জন্য ১০ মিনিটের বেশী বসতে পারি না</p> <p>৫) আমি ব্যথার জন্য সব সময় বসতে পারি না</p>	<p>৫.২.৬ দাঁড়ানো</p> <p>০) আমি ব্যথা ছাড়া আমার ইচ্ছামত দাড়িয়ে থাকতে পারি</p> <p>১) আমি আমার ইচ্ছামত অনেকক্ষণ দাড়িয়ে থাকতে পারি, কিন্তু এটা কিছুটা ব্যথার সৃষ্টি করে</p> <p>২) আমি ব্যথার জন্য একঘন্টার বেশী দাড়িয়ে থাকতে পারি না</p> <p>৩) আমি ব্যথার জন্য আধা ঘন্টার বেশী দাড়িয়ে থাকতে পারি না</p> <p>৪) আমি ব্যথার জন্য ১০ মিনিটের বেশী দাড়িয়ে থাকতে পারি না</p> <p>৫) আমি ব্যথার জন্য সব সময় দাড়িয়ে থাকতে পারি না</p>
<p>৫.২.৭ ঘুমানো</p> <p>০) ব্যথা আমার ঘুমের কোন সমস্যা তৈরী করে না</p> <p>১) আমি একমাত্র বিছানায় ভালভাবে ঘুমাতে পারি</p> <p>২) আমি বিছানায় ছয় ঘন্টার কম ঘুমাতে পারি</p> <p>৩) আমি বিছানায় চার ঘন্টার কম ঘুমাতে পারি</p> <p>৪) আমি বিছানায় দুই ঘন্টার কম ঘুমাতে পারি</p> <p>৫) আমি ব্যথার জন্য সবসময় ঘুমাতে পারি না</p>	<p>৫.২.৮ যৌন জীবন</p> <p>০) আমার যৌন জীবন স্বাভাবিক এবং কোন ব্যথা তৈরী করে না</p> <p>১) আমার যৌন জীবন স্বাভাবিক এবং কিছুটা ব্যথা তৈরী করে</p> <p>২) আমার স্বাভাবিক এবং অনেক ব্যথা তৈরী করে</p> <p>৩) আমার যৌন জীবন ব্যথার জন্য গুরুতরভাবে সীমাবদ্ধ</p> <p>৪) আমার যৌন জীবন ব্যথার জন্য অনেকটাই গুরুতরভাবে সীমাবদ্ধ</p> <p>৫) আমার যৌন জীবন ব্যথার জন্য পুরোটাই গুরুতরভাবে সীমাবদ্ধ</p>
<p>৫.২.৯ সামাজিক জীবন</p> <p>০) আমার সামাজিক জীবন স্বাভাবিক এবং এটা কোন ব্যথা তৈরী করে না</p> <p>১) আমার সামাজিক জীবন স্বাভাবিক কিন্তু এটা কিছুটা ব্যথা তৈরী করে</p> <p>২) ব্যথা আমার সামাজিক জীবনের উপর কোন প্রভাব ফেলে না কিন্তু উদ্দিপনামূলক কাজকর্ম হতে বিরত রাখে</p> <p>৩) ব্যথা আমার সামাজিক জীবনকে বাধাগ্রস্ত করে এবং বাহিরে যেতে পারি না</p> <p>৪) ব্যথা আমার জীবনকে চার দেয়ালের মধ্যে সীমাবদ্ধ করেছে</p> <p>৫) ব্যথার জন্য আমার কোন সামাজিক জীবন নেই</p>	<p>৫.২.১০ ভ্রমন</p> <p>০) আমি ব্যথা ছাড়াই যে কোন জায়গায় ভ্রমন করতে পারি</p> <p>১) আমি যে কোন জায়গায় ভ্রমন করতে পারি, কিন্তু এটা কিছুটা ব্যথার সৃষ্টি করে</p> <p>২) আমি অতিরিক্ত ব্যথা নিয়ে দুই ঘন্টার বেশি ভ্রমন করতে পারি</p> <p>৩) আমি অতিরিক্ত ব্যথা নিয়ে এক ঘন্টার বেশি ভ্রমন করতে পারি</p> <p>৪) ব্যথার জন্য আমি ত্রিশ মিনিটের বেশি ভ্রমন করতে পারি না</p> <p>৫) ব্যথার জন্য আমি চিকিৎসার প্রয়োজন ব্যতীত ভ্রমন করি না</p>
<p>মোট স্কোরঃ</p>	<p>প্রতিবন্ধিতার মাত্রাঃ</p>

পর্ব- ৫.৩ ভয় পরিহার বিশ্বাস প্রশ্রাবলী (যে উত্তরটি আপনার মতামতের সবচেয়ে কাছের তাতে টিক চিহ্ন দিন)

	সম্পূর্ণ অসম্মতি			অনিশ্চিত			সম্পূর্ণ একমত
৫.৩.১ শারীরিক কর্মকান্ডের জন্য আমার ব্যথা তৈরী হয়েছে	০	১	২	৩	৪	৫	৬
৫.৩.২ শারীরিক কর্মকান্ডে আমার ব্যথাকে খারাপের দিকে নিয়ে যায়	০	১	২	৩	৪	৫	৬
৫.৩.৩ শারীরিক কর্মকান্ড আমার কোমড়ের জন্য ক্ষতিকর	০	১	২	৩	৪	৫	৬
৫.৩.৪ আমার শারীরিক কর্মকান্ড করা উচিত নয় যেটা আমার ব্যথাকে আরো বাড়িয়ে দেয়	০	১	২	৩	৪	৫	৬
৫.৩.৫ আমি কোন শারীরিক কর্মকান্ড করতে পারি না যেটা আমার ব্যথাকে আরো বাড়িয়ে	০	১	২	৩	৪	৫	৬
৫.৩.৬ আমার ব্যথা আমার কাজকর্ম দ্বারা অথবা আমার কর্মস্থলে দুর্ঘটনার জন্য তৈরী হয়েছে	০	১	২	৩	৪	৫	৬
৫.৩.৭ আমার কাজকর্ম আমার ব্যথা বাড়িয়ে দেয়	০	১	২	৩	৪	৫	৬
৫.৩.৮ ব্যথার ক্ষতিপূরণ সংক্রান্ত আমার একটি দাবি আছে	০	১	২	৩	৪	৫	৬
৫.৩.৯ আমার কাজকর্ম আমার জন্য অনেক ভারী	০	১	২	৩	৪	৫	৬
৫.৩.১০ কাজ আমার ব্যথাকে সৃষ্টি করে অথবা খারাপের দিকে নিয়ে যায়	০	১	২	৩	৪	৫	৬
৫.৩.১১ আমার কাজকর্ম আমার কোমড়ের জন্য ক্ষতিকর	০	১	২	৩	৪	৫	৬
৫.৩.১২ আমার বর্তমান ব্যথা নিয়ে আমার স্বাভাবিক কাজকর্ম করা উচিত নয়	০	১	২	৩	৪	৫	৬
৫.৩.১৩ আমি আমার বর্তমান ব্যথা নিয়ে স্বাভাবিক কাজকর্ম করতে পারি না	০	১	২	৩	৪	৫	৬
৫.৩.১৪ আমার ব্যথার চিকিৎসা না করা পর্যন্ত আমার স্বাভাবিক কাজকর্ম করতে পারি না	০	১	২	৩	৪	৫	৬
৫.৩.১৫ আমি তিনমাসের মধ্যে আমার স্বাভাবিক কাজকর্ম করার কথা চিন্তা করতে পারি না	০	১	২	৩	৪	৫	৬
৫.৩.১৬ আমি আর কাজে ফিরে যেতে সক্ষম হব বলে মনে করতে পারি না	০	১	২	৩	৪	৫	৬
মোট স্কোরঃ							

পর্ব- ৫.৪ সায়েটিকা বোদারসম মাত্রা নির্ণয় (যে উত্তরটি আপনার মতামতের সবচেয়ে কাছের তাতে টিক চিহ্ন দিন)

	বিরক্তির নয়			কিছুটা বিরক্তির			সম্পূর্ণ বিরক্তির
৫.৪.১ আপনি কি পায়ে ব্যথা অনুভব করেন ?	০	১	২	৩	৪	৫	৬
৫.৪.২ আপনি পায়ে অবশ অবশ অথবা ঝি ঝি অনুভব করেন ?	০	১	২	৩	৪	৫	৬
৫.৪.৩ আপনি কি পায়ে দুর্বলতা অনুভব করেন ?	০	১	২	৩	৪	৫	৬

৫.৪.৪ আপনি কি বসা অবস্থায় কোমড় ব্যথা অথবা পায়ে ব্যথা অনুভব করেন ?	০	১	২	৩	৪	৫	৬
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পর্ব- ৫.৫ বিষন্নতার মাত্রা নির্ণয় (গত ২ সপ্তাহের মধ্যে আপনি কতটা ঘন ঘন নিম্নোক্ত সমস্যায় পড়েছেন তাতে টিক চিহ্ন দিন)

ক্রমিক নং	একদমই না	কয়েকদিন	অর্ধেকরও বেশীদিন	প্রায় প্রতিদিনই
৫.৫.১ কাজ করতে অল্প আগ্রহ বা অনন্দ পান	০	১	২	৩
৫.৫.২ মনখারাপ, বিষন্ন বা আশাহীন মনে হয় নিজেকে	০	১	২	৩
৫.৫.৩ আপনার ঘুমাতে অসুবিধা হয় বা বেশি ঘুম হয়	০	১	২	৩
৫.৫.৪ ক্লান্ত লাগে বা অল্প এনার্জী বা শক্তি পান	০	১	২	৩
৫.৫.৫ খাবার খেতে ইচ্ছা করেনা বা বেশী খাওয়া হয়	০	১	২	৩
৫.৫.৬ নিজেকে ছোট লাগে- নিজেকে ব্যর্থ মনে হয় বা মনে হয় আপনি আপনার পারিবার বা নিজেকে ছোট করছেন	০	১	২	৩
৫.৫.৭ কোন কিছুতে মনোযোগ দেয়া সমস্যা হয়- যেমন সংবাদপত্র পড়া বা টেলিভিশন দেখা	০	১	২	৩
৫.৫.৮ এত আন্তে চলাফেরা করেন বা কথা বলেন যে অন্য মানুষেরা সেটা লক্ষ্য করে না বা একবারে উল্টা, এতটাই চঞ্চল যে আপনি সাধারণ মানুষের চেয়ে বেশী চলাফেরা করেন	০	১	২	৩
৫.৫.৯ আপনার মনে হয় যে মরে গেলে ভাল বা নিজেকে নিজে আঘাত করলে ভাল	০	১	২	৩
মোট স্কোরঃ				

ধন্যবাদ

পরবর্তী অংশে আপনাকে কিছু প্রশ্ন দেয়া হবে, আপনার জীবনের অভিজ্ঞতা থেকে যা মনে হয় বা সঠিক উত্তর বলে ভাবেন তা অনুগ্রহ করে লিখুন, প্রয়োজনে কারো সহায়তা নিন

গবেষনার নামঃ “সিআরপি তে আগত আপারেশন পরবর্তী লাম্বার ডিস্ক হার্নিয়েশন রোগীদের ফিজিওথেরাপি চিকিৎসার ফলাফল”

কোড নংঃ

অধ্যায় ৬ঃ ফিজিওথেরাপি চিকিৎসা গ্রহনের সম্ভষ্টি ও চিকিৎসা সম্পর্কিত ভাবনা নিয়ে সাক্ষাৎকার (১২ সেশন পর)

নিম্নোক্ত প্রশ্নের উত্তর আপনার অভিজ্ঞতা থেকে লিখুন, প্রয়োজনে উত্তর লিখাতে কারো সাহায্য নিন

৬.১ আপনার এখন কেমন লাগছে?

৬.২ বর্তমান অভিজ্ঞতা ও অপারেশনের পরের অভিজ্ঞতার সাথে আপনি কি ধরনের পার্থক্য অনুভব করছেন?

৬.৩ আপনার অপারেশন সম্পর্কে আপনার মূল্যায়ন কি?

৬.৪ অপারেশন না করে প্রথম থেকেই যদি ফিজিওথেরাপি চিকিৎসা নিতেন তবে কেমন হত বলে মনে করেন?

৬.৫ অপারেশনে যে পরিমান অর্থ ব্যয় হয়েছে সে অনুযায়ী উপকার সম্পর্কে আপনার আপনার মতামত কি?

৬.৬ সিআরপি তে ফিজিওথেরাপি চিকিৎসা নিয়ে যে অর্থ ব্যয় হয়েছে সে অনুযায়ী উপকার সম্পর্কে আপনার মতামত কি?

৬.৭ আপনার কাছে কি মনে হয় যে দেশের মানুষের আপনার মত সমস্যায় ফিজিওথেরাপি চিকিৎসার ভূমিকা সম্পর্কে কেমন ধারণা আছে?

৬.৮ দেশের মানুষকে লাম্বার ডিস্ক প্রোলাপসে ফিজিওথেরাপি চিকিৎসা সম্পর্কে সচেতনতা ও প্রচার সম্পর্কে আপনার উপদেশ কি?

৬.৯ দেশের অন্যান্য ফিজিওথেরাপি চিকিৎসা কেন্দ্রের সাথে সিআরপি কে আপনি কিভাবে মূল্যায়ন করবেন?

৬.১০ নতুন লাম্বার ডিস্ক প্রোলাপস রোগীদের আপনার কি পরামর্শ দেয়ার আছে ?

গবেষণায় অংশগ্রহনের জন্য আপনাকে অসংখ্য ধন্যবাদ