

**PREVALENCE OF LOW BACK PAIN AMONG THE CUTTING
AND FINISHING OPERATORS AT A SELECTED GARMENT
FACTORY IN GAZIPUR**

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

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

**PREVALENCE OF LOW BACK PAIN AMONG THE CUTTING
AND FINISHING OPERATORS AT A SELECTED GARMENT
FACTORY IN GAZIPUR**

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Declaration

I declare that the work presented here is my own. All sources used have been cited appropriately. Any mistakes or inaccuracies are my own. I also declare that for any publication, presentation or dissemination of information of the study. I would be bound to take written consent of my supervisor.

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Acronyms

BGMEA	Bangladesh Garment Manufacturers and Exporters Association
BHPI	Bangladesh Health Professions Institute
CRP	Center for the Rehabilitation of the Paralysed
EU	European Union
GDP	Gross Domestic Product
GNP	Gross National Product
ILO	International Labour Organization
LBP	Low Back Pain
MS	Musculoskeletal
MSD	Musculoskeletal Disorder
NHIS	National Health Interview Survey
NSAID	Non-Steroid Anti Inflammatory Drug
QC	Quality Control
RMG	Readymade garment
SPSS	Statistical Package for the Social Sciences
TENS	Transcutaneous Electrical Nerve Stimulation
US	United States
USA	United States of America
VAS	Visual Analogue Scale

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Abstract

Purpose: To identify the prevalence of low back pain among the cutting and finishing operators in garment factory. *Objectives:* To explore the socio-demographic information (age, educational background, living area) of the affected group; to establish the prevalence of low back pain by age and sex; to identify the pain ratio among cutting and finishing operators; to determine more affected age group, to measure the severity of pain by using Visual Analog Scale; to identify the available treatment received by the LBP affected patients; to find out the absenteeism due to pain, to identify the risk factor of low back pain among the cutting and finishing operators. *Methodology:* The study design was cross-sectional. Total 150 samples were selected conveniently for this study from the Delta Composite knitting Industries Limited. Data was collected by using mixed type of questionnaire. Descriptive statistic was used for data analysis which focused through pie chart and bar chart. *Result:* The finding of the study was that 36% cutting and finishing operators suffered from LBP. Most of them had been suffered from moderate (51%) LBP. Among 36% cutting and finishing operators 56% cutting operators and 44% finishing operators suffered from LBP. Among 36% cutting and finishing operators who suffered from LBP took different kinds of treatment, among them 72% took medication, 4% took physiotherapy and 24% do not took any treatment for their LBP. *Conclusion:* From this study it could conclude that cutting operators are more vulnerable to LBP than finishing operators. This study could help the general population who had risk of LBP, the researcher for further study and the physiotherapist to treat the LBP accurately.

1.1 Background

For Bangladesh's economy in terms of employment, production and foreign exchange earnings readymade garment (RMG) industry is the key sector. According to the Bangladesh Garment Manufacturers and Exporters Association (BGMEA), there are at present more than 4000 garment factories contributing about 76% of the country's export earnings. This marvelous success is greatly attributable to women workers, who account for the lions share of the total labour force employed in the sector (Begum, et al., 2010).

Khaled (2010) stated that garments industry has turned into a main pillar of the Bangladesh economy, accounting for three-fourth of the country's total export earnings. It is on witness that in 1983-84, garments export was worth \$31.57 million which was 3.89% of the total export of Bangladesh. For the reason that of the coming forward of private sector banks, the garments industry started growing rapidly. In 1986-87 garments export was worth \$298.67 million, which was 27.74% of the then total export; and in the 2009-10 financial year garments export was worth \$12.35 billion (in Bangladeshi currency Taka 864.50 billion) which is 79.33% of total export. In the financial year 2008-09 the Gross Domestic Product (GDP) of Bangladesh was Taka 6149.43 billion of which the contribution of the garments industry is about 10%.

Parimalam et al. (2006) mentioned that the work environment in a garment factory is unsafe and unhealthy. These embrace poorly designed workstations, unsuitable furniture, lack of ventilation, inappropriate lighting, excessive noise, insufficient protection from dangerous chemicals, insufficient safety measures in fire emergencies and lack of personal protective equipment. Inhabitants working in such poor or substandard environment are prone to occupational diseases. Experimental evidences suggest that the workers in the garment units suffer from work-related musculoskeletal disorders such as carpal tunnel syndrome, forearm tendinitis, epicondylitis, bicapital tendinitis, lower back pain, neck pain, shoulder pain and osteoarthritis of the knees.

Guo et al. (2004) conduct a research among workers in Taiwan and they found that among the participants, 37.0% (standard error [SE] =0.4%) had musculoskeletal disorder (MSD), projecting to about 1,016,000 male and 860,000 female cases. For MSD of any of the nine body parts, the prevalence in female workers was significantly higher than that in male workers (39.5% vs. 35.2%, $p < 0.001$ for chi-square test). Among the nine body parts, “lower back and waist” were the most frequently affected (18.3% among male workers and 19.7% among female workers). Schimmel et al. (2009) focused that low back pain (LBP) poses a large problem to society. In the Netherlands, the 1-year-period prevalence in the general inhabitants was 44% in 2003. Approximately one-fourth of the employed population with LBP reported sickness leave in the past year. LBP is associated with persistent or recurrent disability and absence from work, resulting in high costs for society.

Back disorders cover a spectrum of conditions, from those of acute onset and short duration to lifelong disorders, and include osteoarthritis, disc degeneration, osteoporosis, and common low back pain. Even though the economic and public health effects of back disorders and especially low back pain are massive epidemiologic research into the problem is in a formative stage, especially compared with cardiovascular conditions and cancer (Manek & MacGregor, 2005). Alsaadi et al. (2011) mentioned that Low back pain (LBP) is a familiar health condition that is often connected with disability, psychological distress and work loss. About, 20% of the adult population experience an episode of LBP at any given time and estimates of lifetime prevalence are around 80%. Worldwide, billions of dollars are expended each year trying to manage LBP, often with limited success.

Age, gender, occupation etc (demographic features), recurrent weight lifting, using vibrating equipment, sedentary life style, weakness of abdominal wall muscles, obesity, smoking, increased lumbar lordosis, scoliosis, cardiovascular disorders, low socioeconomic level are some of the known risk factors for LBP (Tucer, et al., 2009). The economic burden are associated with LBP including lost productivity and income from work, the expense of medical, rehabilitation and surgical interventions and the costs of disabling pain and limited daily function. The economic cost of back pain to society in the Netherlands has been estimated to be 1.7% of the gross national product (GNP) and 0.9% (€337 million) of the total cost of health care (Heneweer, et al.,

2011). In the USA health-care expenditure for LBP is more than \$90 billion/year, in the UK it is \$17 billion/year and in Australia \$1 billion/year. Most of the costs of LBP are associated with persistent or chronic LBP, i.e. LBP which lasts for more than 3 months (Alsaadi, et al., 2011).

Physical occupational exposure is a risk factor for low back pain in workers. The prevalence of LBP in active workers was associated with occupational exposure. For active men, the prevalence of LBP was significantly higher in those currently or previously exposed (n = 1051) compared with those never exposed (n = 1183), respectively over 20% versus less than 11%. Among retired men, the prevalence of LBP tended towards equivalence with increasing age among those previously exposed (n = 748) and those unexposed (n = 599). Patterns were quite similar for women with a higher prevalence in exposed active women (n = 741) compared to unexposed (n = 1260): around 25% versus 15%. Similarly, differences between previously exposed (n = 430) and unexposed (n = 489) retired women tended to reduce with age (Plouvier, et al., 2011). Lifetime prevalence of low back pain (LBP) world-wide estimates are vary from 50 to 84%. Work-related LBP relates to exposure to workplace hazards and incurs high costs to society in terms of health care, loss of productivity, workplace and family stress, as well as individual pain and suffering (Nyland & Grimmer, 2003).

1.2 Rationale

Although some studies have dealt with low back pain among garment workers in other countries, the exact nature and prevalence of this important health problem has not been studied before in Bangladesh. Low back pain among the garments worker are the common health problems in Bangladesh. Most of the workers come from low socio economic condition level and most of them are unaware about their health condition. Garments worker have an increase risk of developing low back pain. Occupational environment of garments are not so much well. Population density and dusty environment are the main cause of developing low back pain among the garments worker. This study was formulated to fill the gap of knowledge in this area. The aims of the study were to assess the pattern of back among garment workers and to identify the impact of demographic, occupational, psychological and social factors on them. Beside this it will help to established ergonomic guidelines for space, equipment, and environmental conditions which are mandatory in the design of working place of the garment workers. This study will also help to discover the lacking area of a garment workers, especially about their posture before doing any activities. The finding of the study will brought to authority concern for future intervention whereby physiotherapy may extent their cooperation and will take preventive measure. Beside this it will help to professional development which is mandatory for current situation. The identification of risk factor of low back pain can help act as preventive method of low back pain and give proper education about their bad posture. And it will help to discover the role and importance of physiotherapy in every sector of Bangladesh.

1.1 Research Question

What is the prevalence of low back pain among the cutting and finishing operators at a selected garment factory in Gazipur?

1.4 Study Objectives

1.4.1 General objective

- To find out the prevalence of low back pain among the cutting and finishing operators in garment factory.

1.4.2 Specific objectives

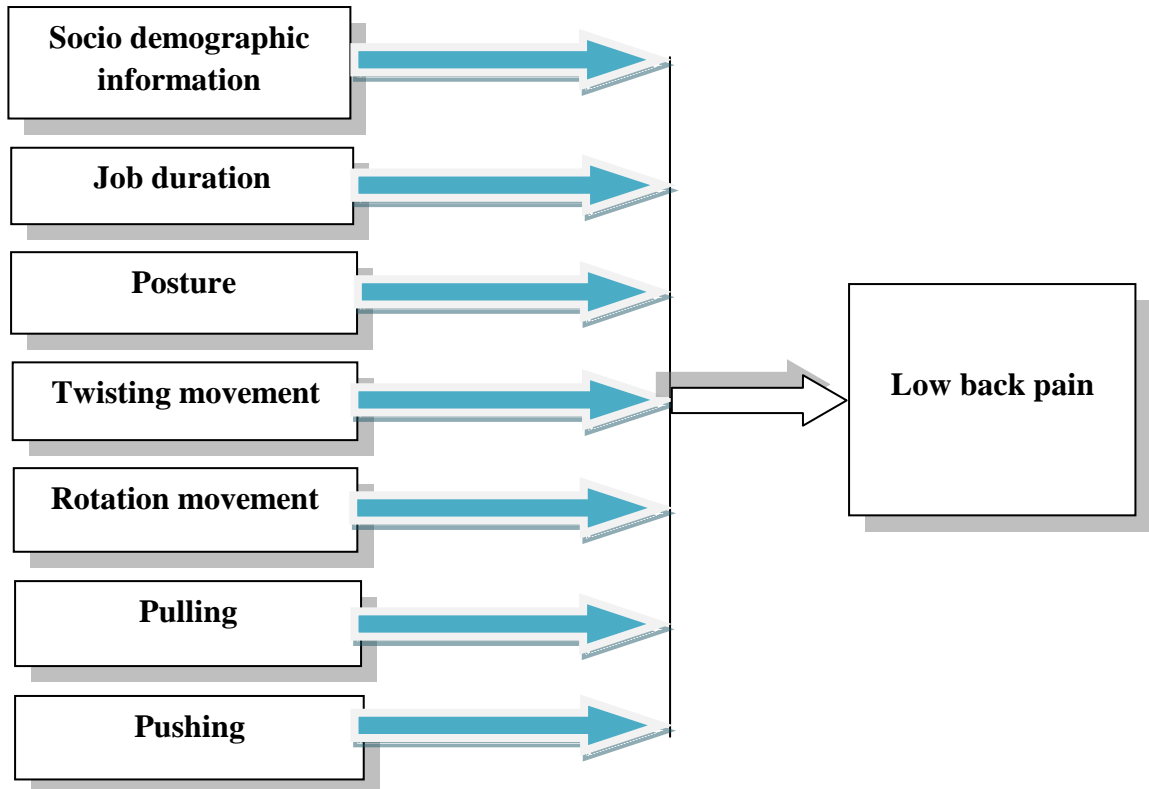
- To know the percentage of low back pain among the cutting and finishing operators in garment factory.
- To investigate the sociodemographic information.
- To explore the pain ratio among cutting and finishing operators.
- To evaluate the severity of symptom by using Visual Analog Scale.
- To determine the received treatment options and consequence.
- To find out the absenteeism from work due to pain.
- To figure out the risk factor of low back pain among the cutting and finishing operators in garment factory.

1.5 List of Variables

Conceptual Framework

Independent variable

Dependent variable



1.6 Operational definition

Prevalence

Prevalence measures the proportion of the population that experiences low back pain at a given time, which can be at any specified point (point prevalence) or in a past period such as 1 month, 1 year, or a lifetime.

Low back pain

Low back pain is usually defined as pain, muscle tension, or stiffness localized below the costal margin and above the inferior gluteal folds, with or without leg pain (sciatica).

Garment-worker

Garment factory workers refers to employees working in the garment factory.

Athit (2005) mention that around 50 workers has been work in cutting section, usually equal numbers of men and women. Lift the heavy bolts of cloth on to the table for cutting by the electric cutter are the function of men, so they can have problems like, back pain from lifting, and women cut their hands in the cutter. All workers in this section are exposed to chemicals and dust; some cloths contain dangerous chemicals. The cutting section shares space with the sewing section so they also have problems with dust like allergies and byssinosis. Parimalam et al. (2007) mention that workers were of relatively young age 28.2 (± 8.3 yr) in the cutting section. Approximately equivalent numbers of males and females were employed in the cutting section. The workers had nearly work for ten years in the cutting section. With consider to the comprehension of health problems of workers, 93% of the workers had experienced health problems of some kind or other while working in the garment manufacturing units. The greater part of the workers expressed breathing difficulty as the predominant health problem. Causative factors might be dust and loose fibres in the cutting section, particularly those from knitted materials. The other reported problems included neural problems like headache (18%), dermatological problems (11%), hearing disability (11%) and musculoskeletal (MS) problems like stiff neck, shoulder pain or back pain, which were expressed by 34% of workers.

In the finishing section the workers have to work really fast because all these departments are paid by piece rate. Working hazards of quality control (QC), buttoning, and packing are almost the same problems as those in the warehouse and first quality control but the ironing section has different working hazards - workers are regularly scalded by the very hot steam from the ironing machine, especially when the machine breaks down or is damaged (Athit, 2005).

Parimalam et al. (2007) mention that the proportion of male and female workers in the finishing section were 43% and 57% respectively. 97% of the workers had knowledge of health problems about the various tasks involved in the finishing section. Ten percent of the workers had respiratory problems such as breathing difficulty and asthma. Musculoskeletal problems were more common among the

workers (34%). The reasons stated for such kinds of musculoskeletal problems were the repetitive nature of the job (56%), improper or lack of furniture and constrained work posture (38%).

Low back pain (LBP) is a common, complex and difficult to manage health condition (Manchikanti, et al., 2009). Approximately, 20% of the adult population experience an episode of LBP at any given time and estimates of lifetime prevalence are around 80% (Walker, 2000). The economic burden of LBP is significant. For example, in the USA health-care expenditure for LBP is more than \$90 billion/year (Luo, et al., 2004), in the UK it is \$17 billion/year (Maniadakis & Gray, 2000) and in Australia \$1 billion/year. Most of the costs of LBP are associated with persistent or chronic LBP, i.e. LBP which lasts for more than 3 months (Walker, et al., 2003). There are several important consequences of LBP including work loss (Marty, et al., 2008), disability and depression (Tucer, et al., 2009). Considerable attention has been applied to understanding and managing these problems (Cohen, et al., 2008), often with limited success. Evidence is beginning to accumulate that patients with LBP also report significant problems with their sleep (Hush, et al., 2009 & Tang, et al., 2007).

Common illnesses among the garment workers like asthma and other respiratory problems, backache, weak eye-sight, piles and anaemia. In the factory workers suffer from allergy, backache, knee pain and headache which they attribute to the long hours of sitting work (Singh, 2009). Low back pain (LBP) is the most common and expensive musculoskeletal disorder in industrialized countries (Anderson, 1999). The 12-month prevalence in the general population has been estimated at 44% (Picavet & Schouten, 2003). LBP is frequently associated with persistent or recurrent disability and absence from work. High costs are mainly due to sick leave and disability (Van-Tulder, et al., 1995). Almost one fourth of workers with LBP reported sick leave in the past year in the Netherlands (Picavet & Schouten, 2003). Consequently from an individual and societal perspective, effective interventions for LBP are needed to prevent long-term disability and promote early and safe return to work (Anema, et al., 2007).

In general the prevalence of chronic back pain should be placed in the circumstance of the prevalence of back pain. Many studies indicate to the high frequency of back

complaints in society. 70–85 percent of all people have back pain at some time in life. The twelve-monthly prevalence of back pain ranges from 15% to 45%, with point prevalences averaging 30%. In the United States of America (USA), back pain is the most common cause of activity limitation in people younger than 45 years, the second most frequent reason for visits to the physician, the fifth-ranking cause of admission to hospital, and the third most common cause of surgical procedures. About 2% of the United States (US) labor force are remunerated for back injuries each year (Anderson, 1999).

The reason of low back pain cannot be clearly identified in 90% of patients. On the other hand, there is strong evidence that personal and occupational psychosocial variables play a more important role than spinal pathology or the physical demands of the job (Nguyen & Randolph, 2007). Low back pain is the enormous burden to individuals and society it have documented studies from around the world. A huge amount of studies have explored the relation between work factors and LBP. Risk of LBP have been consistently associated with the heavy lifting, frequent twisting and bending, whole body vibration, low social support at work, and low job satisfaction. The relation between mechanical exposures at work and the occurrence of LBP related sickness absence was reported in several studies, with a majority of positive associations (Eriksen, et al., 2004). Low back disorders have been classified into physical job demand factors, psychosocial factors and individual factors as risk factors for occupational lower back disorders (Ferguson, et al., 2004).

The presence and severity of low back pain is associated with several socio-demographic factors, among them sex, age, education level, smoking, and occupation. Although the prevalence of back pain increases with age, the dose–response relation between age and low back pain is not linear, suggesting that multiple factors are involved. Gender differences in the prevalence of musculoskeletal disorder (MSD) are frequently observed, but the degree might differ from country to country. The 1988 National Health Interview Survey (NHIS) in the U.S. reported a higher prevalence of back pain in male workers, and a study on lower back pain in Japan from 1986 to 1988 showed the incidence in male worker was about four times greater than that in female workers. The associations between education level and MSD has been documented for back pain and a high education level is generally found to be

associated with a decreased risk of back pain (Guo, et al., 2004). One study of young adolescents and young adults age 12–22 years demonstrated an overall prevalence of back pain of 7% (pain > 30 days during the past year). Young people with low back pain are more likely to suffer from asthma and headache. The same investigators showed a statistically significant association between high birth weight and risk of developing low back pain in male patients but not in female patients (Hestbaek, et al., 2004).

Various physical demands, including manual lifting, bending, twisting, and whole body vibration, are associated with an increased possibility of low back pain (Nguyen & Randolph, 2007). Bodily work demand risk factors include bending and twisting and frequent lifting as well as other factors. Evaluation techniques of risk to measure bending, twisting and lifting vary (Ferguson, et al., 2004). Factors of workplace, including physical and psychosocial factors and their interaction, are strong determinants of back pain. Physical factors such as heavy physical work, night shifts, lifting, bending, twisting, pulling, and pushing have often been associated with low back pain (Manek & MacGregor, 2005). In the garment factory prolonged standing is also common. In the finishing section of the factory, the ironer category workers have to keep standing up throughout their work period. The cases is similar with the folder category workers. The helper category workers in the sewing section also have to work standing up for a long time. According to occupational physicians, low back pain, sore feet, varicose veins, swelling in the legs, general muscular fatigue and other health problems have been associated with prolonged standing. Results of the study showed that the most frequent illness reported by 70 percent female workers was headache. Gastritis was more prevalent among the female workers. About 47 percent suffered from gastritis problem. In general, 36.7 percent workers suffered from some kind of weakness. This occurred due to long hours of work and low quality of food that they took for lunch (Begum, et al., 2010).

Predictors of new-onset chronic back pain using prospective data in the general household population identified general health and psychosocial factors in both men and women (Kopec, et al., 2004). Studies show a strong association between back pain and depressive disorders, but a cross-sectional analysis cannot establish cause and effect, Back pain is not a short-term consequence of depressive disorder but

emerges over periods longer than 1 year. The combination of chronic back pain and major depression is associated with greater disability than either condition alone (Currie & Wang, 2004).

Nguyen & Randolph (2007) mentioned that depression, education level, excessive pain level, fear avoidance, job dissatisfaction, legal representation, somatization disorder, unemployment, workers' compensation cases are associated with work absenteeism and chronic disability.

LBP can develop due to many causes, including muscle strain, back injury, overuse, muscle disorders, pressure on a nerve root, poor posture, and many others. Pregnant women, smokers, construction workers, and people who do repetitive lifting all have increased risk of back pain. Although arthritis in the back or degenerated discs are often seen in persons with low back pain (Cowan, 2008). The most common causes of low back pain are injury or overuse of muscles, ligaments, and joints, pressure on nerve roots in the spinal canal this can be caused by herniated disc, osteoarthritis, spondylolisthesis, spinal stenosis, or narrowing of the spinal canal, fractures of the vertebrae, spinal deformities, including curvature problems such as severe scoliosis or kyphosis, compression fractures. These are more common among post-menopausal women with osteoporosis and in men or women after long-term corticosteroid use. Less common spinal conditions that can cause low back pain include ankylosing spondylitis, bacterial infection spinal tumors (Back Pain Health Center, 2011a).

Muscles get tired and don't have time to refresh if work in fixed positions. Doing the same measures over and over again cause pains in the body. Using force with some kinds of work like hammering; twisting is related to tendon and fibrous tissue damage. These injuries are also made worse by some of the things you do at home, particularly for women with a lot of housework to do. If the soreness is around for a long time it leads to muscle weakness, to the point that even lifting a cup can be painful. It's important to prevent these things. Your body has a memory, if you stop something and recover and start doing it again 6 months later the body can begin to hurt again. Most workplaces are designed for only one body type. Tall and short workers have to strain to reach their task surface as they are not adjustable. The facilitator demonstrated this by asking one of the participants to sit on a chair. His feet

did not touch the floor and his arms were too high. Melody sat in the same chair and her feet could touch the ground (she's much taller). A good chair will support the lower back and reduce fatigue. Optimal position is with joints at 90 degrees such as the arms when typing on a computer etc, poorly lit work may cause workers to sit or stand in unnatural positions so they can see the task at hand. Changing positions and shifting weight reduces fatigue and back pain when performing standing tasks. A foot rest is an inexpensive solution (AMRC, 2005).

In low back pain symptoms depend on different cause. These may be back sprain or strain, muscle spasms, cramping, and stiffness, pain in the back and buttocks. Pain worse due to certain movements and it feel better during resting makes. The worst pain usually lasts 48 to 72 hours and may be followed by days or weeks of less severe pain. In cases of Nerve-root pressure if leg pain extends below the knee, it is more likely to be due to pressure on a nerve than to a muscle problem. Most commonly, it's a pain that starts in the buttock and travels down the back of the leg as far as the ankle or foot. In cases of nerve-related problems, such as tingling, numbness, or weakness in one leg or in the foot, lower leg, or both legs. Tingling may begin in the buttock and extend to the ankle or foot. Weakness or numbness in both legs, and loss of bladder and/or bowel control, are symptoms of cauda equina syndrome, which requires immediate medical attention (Back Pain Health Center, 2011b).

Diagnosis can be done by physical examination and laboratory investigation. The physical examination includes observation and measurements, palpation for tenderness and joint alignment and check pulses in the legs, deep tendon reflex tests, sensation tests, movement tests, straight leg test, muscle strength tests (neurologic testing), general abdominal, pelvic, rectal, and leg exams (Back Pain Health Center, 2010).

For acute low back pain, most clinical practice guidelines agree on the use of reassurance, recommendations to stay active, brief education, paracetamol, non-steroidal anti-inflammatory drugs (NSAID), spinal manipulation therapy, muscle relaxants (as second line drugs only, because of side-effects), and weak opioids (Dagenais, et al., 2010). Some reviews recommend topical pharmacological treatments and superficial heat application for pain relief (McCarberg, 2010).

For chronic low back pain, the use of brief education about the problem, advice to stay active, non-steroidal anti-inflammatory drugs, weak opioids (short-term use), exercise therapy (of any sort), and spinal manipulation are recommended in most guidelines (Dagenais, et al., 2010). Self-management strategies for example health promoting activities, self-monitoring of status, and decision-making (May, 2010), are receiving increasing attention as important components in the management of low back pain. Secondary recommendations include multidisciplinary rehabilitation, adjunctive analgesics, cognitive behavioural therapy, and strong opioids. Antidepressants are presented as second line treatment for patients with persistent low back pain in some guidelines (Savigny, et al., 2009), although possibly no greater than placebo (Kuijpers, et al., 2011 & Urquhart, et al., 2008) and with a high risk of side-effects (Kuijpers, et al., 2011).

Intradiscal electrothermal therapy, percutaneous intradiscal radiofrequency thermocoagulation, and radiofrequency facet joint denervation are generally not recommended (Savigny, et al., 2009). For chronic disabling cases of nonspecific low back pain, intensive multidisciplinary approaches are often recommended, although these are not necessarily available everywhere. However, group cognitive behavioural interventions in a primary care setting can have a sustained effect on troublesome subacute and chronic low back pain at low cost to the health-care provider (Lamb, et al., 2010).

The place for surgery in chronic non-specific low back pain (if any) is very limited and its overuse has been criticized (Deyo, et al., 2004). Results from trials that compare intensive rehabilitation with spinal fusion surgery have shown similar clinical improvement for the treatments at short and long-term follow-up, but more complications and lower cost-effectiveness for surgery (Brox, et al., 2010 & Fairbank, et al., 2005). The findings of trials that assess new methods of surgical treatment, including disc replacement, show similar clinical outcomes (differences below minimally important clinical difference) to fusion and intensive rehabilitation as judged by standardised clinical outcome measures (Hellum, et al., 2011 & Blumenthal, et al., 2005). One of the difficulties of undertaking randomised trials that compare conservative and surgical management is the high rate of treatment group crossover (Brox, et al., 2010), often dictated by patient preferences and perceptions of

the superiority of surgery. Patients with chronic pain not responding to conservative treatment should be carefully reassessed to ensure that a structural lesion that might be an indication for surgery has not been overlooked (Airaksinen, et al., 2006). But in chronic refractory cases (ie, patients who have undergone multidisciplinary rehabilitation without any improvement) should not be managed by pain specialists or with multidisciplinary programmes focused on chronic pain management (Balague, et al., 2012).

Treatments that may improve outcomes in patients with chronic low back pain include analgesic and anti inflammatory medications, and massage in combination with exercise and patient education (Furlan, et al., 2002). Treatments for which evidence of effectiveness is unclear include acupuncture, epidural steroid injections, muscle relaxants, spinal manipulation, transcutaneous electrical nerve stimulation (TENS), trigger point injections, heat therapy, and therapeutic ultrasound (Assendelft, et al., 2004, Furlan, et al., 2005, Khadilkar, et al., 2005, Nelemans, et al., 2001). Antidepressants reduce pain intensity, but do not improve the ability to perform activities of daily living (Salerno, et al., 2002). Bed rest should be limited to less than two days. Patients should be encouraged to remain as active as possible (Waddell & Burton, 2001). Exercise conducted under the supervision of a therapist three to five times per week is highly recommended as first-line therapy in the treatment of low back pain. However, there is conflicting evidence as to which type of exercise therapy is most effective. As treatment progresses, passive modalities should decrease and active modalities should increase, and the number of exercise sessions per week should be tapered. Home exercises should be initiated with the first therapy session and regularly assessed for compliance. The patient's status in therapy should be reevaluated after the first six visits (i.e., in about two weeks). If there is no progression, factors that inhibit improvement of pain and activities of daily living should be addressed, and multidisciplinary rehabilitation should be considered (Airaksinen, et al., 2006).

The goals of physical therapy are to decrease back pain, increase function and teach the patient a maintenance program to prevent future back problems. Common forms of physical therapy include: Passive physical therapy (modalities) which includes things done to the patient, such as heat application, ice packs and electrical

stimulation. For example, a heating pad may be applied to warm up the muscles prior to doing exercising and stretching, and an ice pack may be used afterward to soothe the muscles and soft tissues.

Active physical therapy which focuses on specific exercises and stretching. For most low back pain treatments, active exercise is the focus of the physical therapy program. Lumbar spine (low back) stability is largely dependent on the supporting abdominal (stomach) and low back musculature. The abdominal muscles provide the initial stabilizing support through their ability to generate pressure within the abdomen which is exerted posteriorly on the spine, thus providing an anterior support column (from the front of the spine). The low back muscles stabilize the spine from the back and lead to posterior support. Another aspect of physical therapy program may include lumbar traction. Proper stretching of the muscles along with active exercise will help maintain normal range of motion and provide relief for muscles that are often suffering disuse atrophy (shrinking muscles from lack of use) or in spasm from inappropriate posture or nerve irritation. For many patients it is best to follow a stretching routine that has been individually designed for them by a physical therapist or a spine physician. As a general rule, low back pain patients should focus on stretching the lower back muscles, abdominal muscles, hips and legs. The patient should never bounce during stretching, and all stretches should be slow and gradual (Dickerman, 2005).

Low-impact aerobic exercises, such as swimming, bicycling, and walking can strengthen muscles in the abdomen and back without over-straining the back. Programs that use strengthening exercises while swimming may be a particularly beneficial approach for many patients with back pain. Medical research has shown that pregnant women who engaged in a water gymnastics program have less back pain and are able to continue working longer. Exercises called lumbar extension strength training are proving to be effective. Generally, these exercises attempt to strengthen the abdomen, improve lower back mobility, strength, and endurance, and enhance flexibility in the hip, the hamstring muscles, and the tendons at the back of the thigh. Flexibility exercises may help reduce pain. A stretching program may work best when combined with strengthening exercises (Simon, 2009).

Dynamic stabilization exercises these exercises involve the use of a variety of exercises and may include use of exercise balls, balancing machines or specific stabilizing exercises. The point of dynamic stabilization exercise is to strengthen the secondary muscles of the spine and help support the spine through various ranges of motion. Core strengthening exercises these are specific exercises to strengthen the abdominal muscles and low back muscles (erector spinae) to provide the aforementioned 'belt of muscle' around the spine. These exercises typically include: Specific abdominal strengthening, such as sit-ups, crunches, abdominal machines, and leg raises. Low back exercises (hyperextensions), which can be performed on machines or by simply lying on the stomach and slowly raising the chest off the ground. This exercise utilizes the lower back muscles to 'hyperextend' the spine (Dickerman, 2005).

Adult Health Advisor (2004) gave suggestions in addition to the treatment for self care management of low back pain these include use an electric heating pad on a low setting (or a hot water bottle wrapped in a towel to avoid burning yourself) for 20 to 30 minutes. Don't let the heating pad get too hot, and don't fall asleep with it. You could get a burn. Try putting an ice pack wrapped in a towel on your back for 20 minutes, one to four times a day. Set an alarm to avoid frostbite from using the ice pack too long. Put a pillow under your knees when you are lying down. Sleep without a pillow under your head. Lose weight if you are overweight. Practice good posture. Stand with your head up, shoulders straight, chest forward, weight balanced evenly on both feet, and pelvis tucked in.

They also gave some advice for prevent low back pain these include don't push with your arms when you move a heavy object. Turn around and push backwards so the strain is taken by your legs. Whenever you sit, sit in a straight-backed chair and hold your spine against the back of the chair. Bend your knees and hips and keep your back straight when you lift a heavy object. Avoid lifting heavy objects higher than your waist. Hold packages you carry close to your body, with your arms bent. Use a footrest for one foot when you stand or sit in one spot for a long time. This keeps your back straight. Bend your knees when you bend over. Sit close to the pedals when you drive and use your seat belt and a hard backrest or pillow. Lie on your side with your knees bent when you sleep or rest. It may help to put a pillow between your knees.

Put a pillow under your knees when you sleep on your back. Raise the foot of the bed 8 inches to discourage sleeping on your stomach unless you have other problems that require that you keep your head elevated.

3.1 Study design

The purpose of the study was to find out the prevalence of low back pain among the cutting and finishing operators in garment workers. The cross section study was conducted to find out the objectives. This design involves identifying group of people and then collecting the information that requires when they use the particular service. This type of data can be used to assess the prevalence of acute or chronic conditions in a population. Survey research is one of the most common forms of research that involves the asking a large group of people questions about a particular topic or issue and these are related to the interest of the participant. Survey is a method of collecting data which involves the measuring relevant sample variables (often using a questionnaire) without any form of manipulation or systemic intervention. The idea with the survey usually approaches a sample of target group of interest, interviews them or ask them questionnaire.

3.2 Study site

The study was conducted at The Delta Composite Knitting Industries Limited, Zarun (South), Kashimpur, Konabari, Gazipur, Bangladesh .

3.3 Study population

In this study, population was all cutting and finishing operators in garment factory.

3.4 Sample size

Sampling procedure for cross sectional study done by following equation-

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

Here,

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

$$P = 0.37$$

$$q = 1 - p$$

$$d = 0.05$$

So the aimed to focus his study by 358 samples following the calculation above initially. But as the study was done as a part of fourth professional academic research project and there were some limitations, so the researcher had to limit with 150 cutting and finishing operators as sample.

3.5 Sampling procedure

The study was conducted by using the convenience sampling methods because it is the easiest, cheapest and quicker method of sample selection. It will be easy to get those subjects according to the criteria concerned with the study purpose through the convenience sampling procedure.

3.6 Inclusion criteria

- Age level 18-50 years because operators in garment usually work between this age level.
- Only cutting and finishing operators who ware doing work in garment.

3.7 Exclusion criteria

- LBP due to pregnancy because it can interfere the result.
- Subjects who had recent major accident or major surgery in any part of the body which could produce pain as acute inflammatory reaction.

3.8 Data collection instrument

A questionnaire with mixed question was used for data collection. In that time some other necessary materials were used like pen, papers etc. Written permission were taken from each participant by using a written consent form.

3.9 Procedure of data collection

At very beginning it clarified that the participant had the right to refuse to answer of any question during completing questionnaire. They could withdraw from the study at any time. It also clarified to all participants about the aim of the study. Participants were ensured that any personal information will not be published anywhere. Permission took from each participant by using a written consent form. After getting consent from the participants, a questionnaire was used to identify the prevalence of

low back pain among the cutting and finishing operators. Stimuli that can distract interviewee were removed to ensure adequate attention during interview. Face to face interview is the most effective way to get full cooperation of the participant in the survey.

According to the understanding level of the participant, sometimes the questions were described in the native language, so that the participants can understand the questions perfectly and answer accurately. All data will be collected by the study conductor himself.

3.10 Data analysis

Data was analyzed with the software named Statistical Package for Social Sciences (SPSS) Version 16.0. Data was numerically coded and captured in Microsoft Excel, using an SPSS 16.0 version software program. Microsoft Office Excel 2007 was used to decorate the bar graph and pie charts.

3.11 Ethical consideration

Written consent (appendix B) was given to all participants prior to completion of the questionnaire. The study conductor explained to the participants about his or her role in this study. The study conductor received a written consent form every participants including signature. So the participant assured that they could understand about the consent form and their participation was on voluntary basis. The participants were informed clearly that their information would be kept confidential. The study conductor assured the participants that the study would not be harmful to them. It was explained that there might not a direct benefit from the study for the participants but in the future cases like them might get benefit from it. The participants had the rights to withdraw consent and discontinue participation at any time without prejudice. Information from this study was anonymously coded to ensure confidentiality and was not personally identified in any publication containing the result of this study. The researcher took permission initially from the supervisor of the research project and from the course coordinator before conducting the study. The necessary information has been approved by the ethical committee of Center for the Rehabilitation of the Paralyzed (CRP) and the study conductor was permitted to do

this study. Also the necessary permission was taken from the executive director of The Delta Composite Knitting Industries Limited. The participants were explained about the purpose and goal of the study before collecting data from the participants. Pseudonyms were used in the notes, transcripts and throughout the study. It was ensured to the participants that the entire field notes, transcripts and all the necessary information will be kept in a locker to maintain confidentiality and all information will be destroyed after completion of the study. The participants were also assured that their comments will not affect their job.

3.12 Limitations

Several limitations and barriers in this study should be considered. The study topic quite new in Bangladesh, so there was no information about the prevalence of low back pain. It was felt that the time duration of the research project was limited. The convenient sampling method was selected because of time limitation. The study conductor had not done any pilot study before conducted research project.

- The result from this survey could not be generalized to a wider population, as the sample were collected from only one garment factory.
- In this study, all objectives of the study should be compared both cutting and finishing operators but due to time limitation it was not possible.
- As data collection was done by questionnaire, so there may be problem in validity and reliability of questionnaire. It is a feasible method to collect the data in questionnaire.
- The research project was done by an undergraduate student and it was first research project. It was only one survey, so that there were some mistakes that overlooked by the supervisor and the honorable teacher.

4.1 Prevalence of low back pain among the cutting and finishing operators

Among the 150 participants, 54 participants were suffer from low back pain and 96 participants were not suffer from low back pain. In percentage 36% participants were suffer from low back pain and 64% participants were not suffer from low back pain.

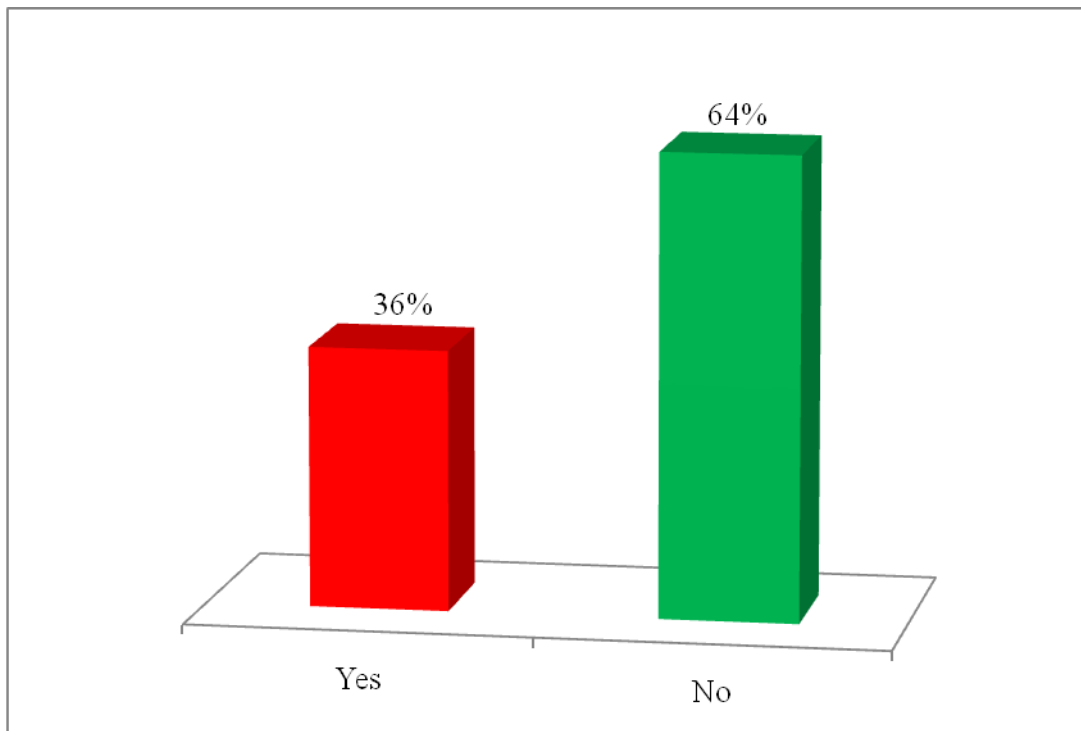


Figure-1: Prevalence of low back pain

4.2 Living Area

Among the 54 cases, 37 cases living area were rural and 17 cases living area were urban. In percentage 68.5% cases living area were rural and 31.5% cases living area were urban.

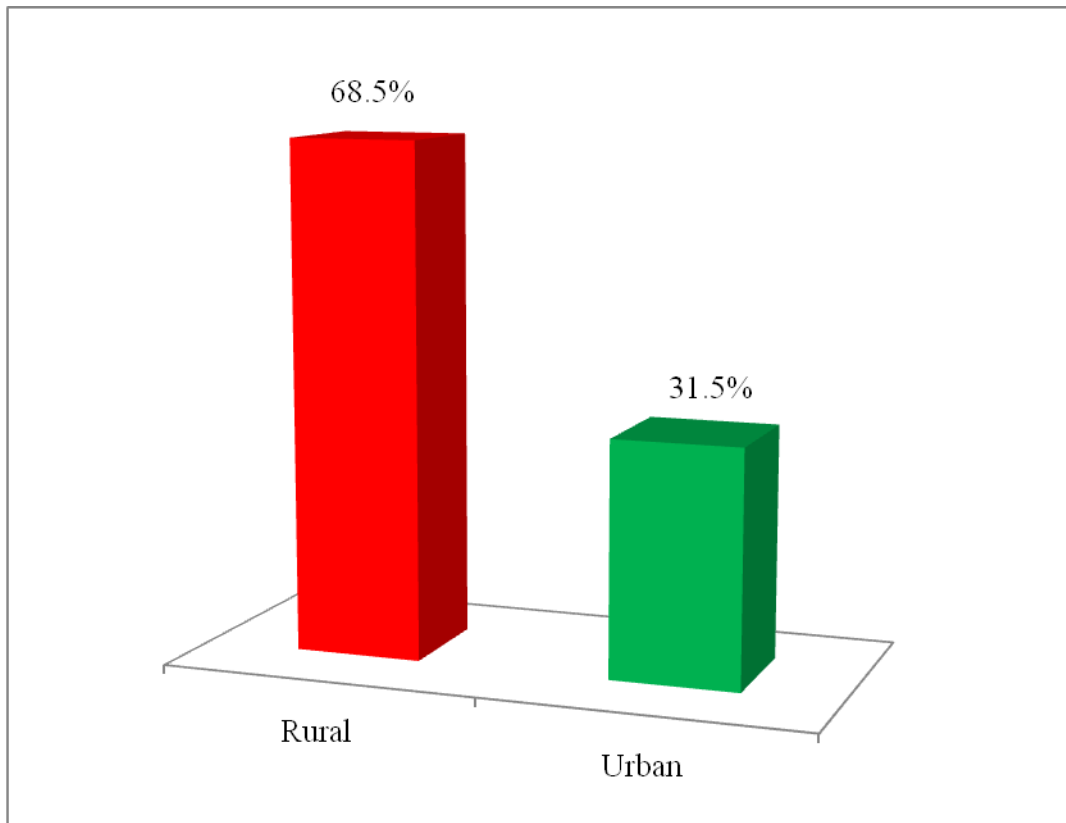


Figure-2: Living area

4.3 Age Group

The study was conducted on 150 participants of cutting and finishing operators. Among the 150 participants 54 participants experienced low back pain. Out of 54 cases the mean age of the participants was 32.33 (± 6.07) years. The range is 26 with minimum age 20 years and maximum 46 years. Among the 54 participants 8 cases were between 18-25 years, 30 cases were between 26-35 years, 16 cases were between 36-46 years. In percentage 14.8% cases were between 18-25 years and 55.6% cases were between 26-35 years, 29% cases were between 36-46 years. Among the 54 cases the higher number of the cases were between 26-35 years 55.6% (n=30).

Age Group	Number (n)	Percentage
18-25 years	8	14.8%
26-35 years	30	55.6%
36-46 years	16	29.6%
Total	54	100%

Table-1: Age group of the participant

4.4 Gender

Among the 54 cases, 45 cases were male and 9 cases were female. In percentage 83% cases were male and 17% cases were female.

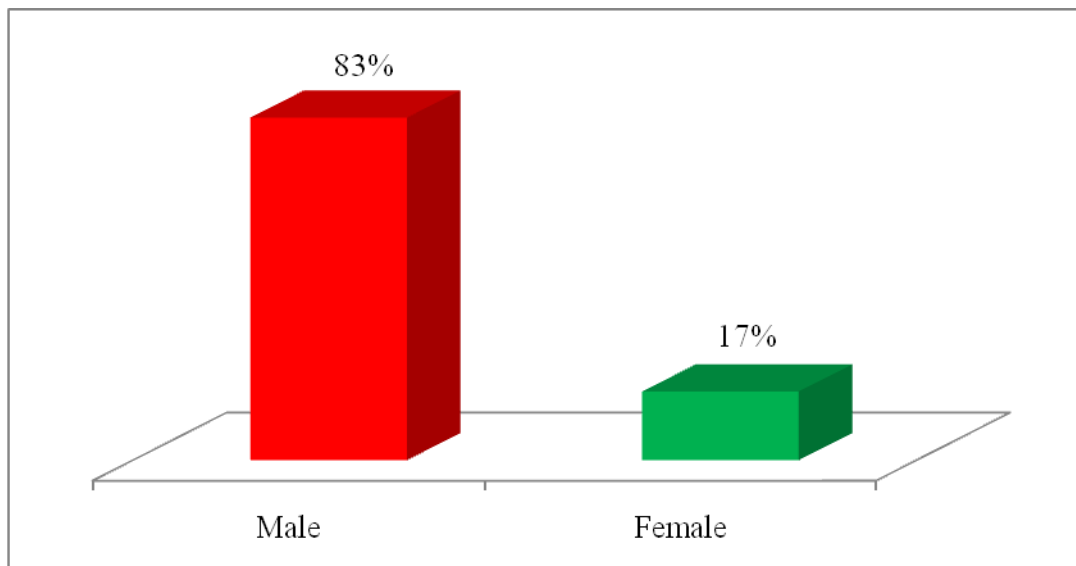


Figure-3: Male female ratio of the participants

4.5 Cross -Tabulation between Age and Gender

Among the 54 cases, majority of the cases age range were 26-35 years and the number were (n=30) in which males were predominantly higher than females in number males (n=24) & females (n=6). In age range between 18-25 years (n=8) cases were affected, among them (n=7) were male & (n=1) were female and in age range between 36-46 years (n= 16) cases were affected, among them (n=14) were males & (n=2) were females.

Age Group	Gender		Total
	Male	Female	
18 – 25 Years	7	1	8
26 - 35 Years	24	6	30
36 - 46 Years	14	2	16
Total	45	9	54

Table-2: Cross -Tabulation between Age and Gender

4.6 Cutting and finishing operators ratio

Among the 54 cases, 30 cases were cutting operators and 24 finishing operators. In percentage 56% cases were cutting operators and 44% cases were finishing operators.

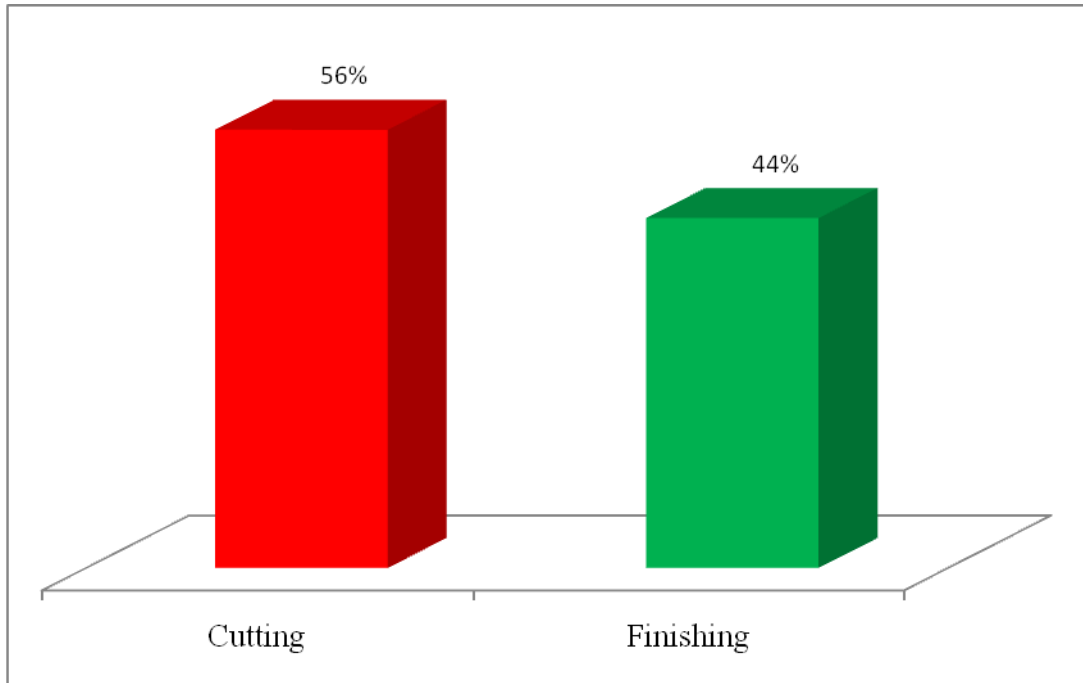


Figure-4: Cutting and finishing operators ratio

4.7 Educational level of the participants

Among the 54 cases, 13 cases educational level were primary, 19 cases educational level were SSC, 15 cases educational level were HSC, 3 cases educational level were honors and others 4 cases educational level were class eight. In percentage 24% cases educational level were primary, 35% cases educational level were SSC, 28% cases educational level were HSC, 6% cases educational level were honors and others 7% cases educational level were class eight.

Educational level	Number (n)	Percentage
Primary	13	24%
SSC	19	35%
HSC	15	28%
Honors	3	6%
Others	4	7%
Total	54	100%

Table-3: Educational level of the participants

4.8 Job experience

Among the 54 cases, 23 cases job experience were between 1-5 years, 22 cases job experience were between 6-10 years, 9 cases job experience were between 11-15 years. In percentage 42% cases job experience were between 1-5 years, 41% cases job experience were between 6-10 years, 17% cases job experience were between 11-15 years.

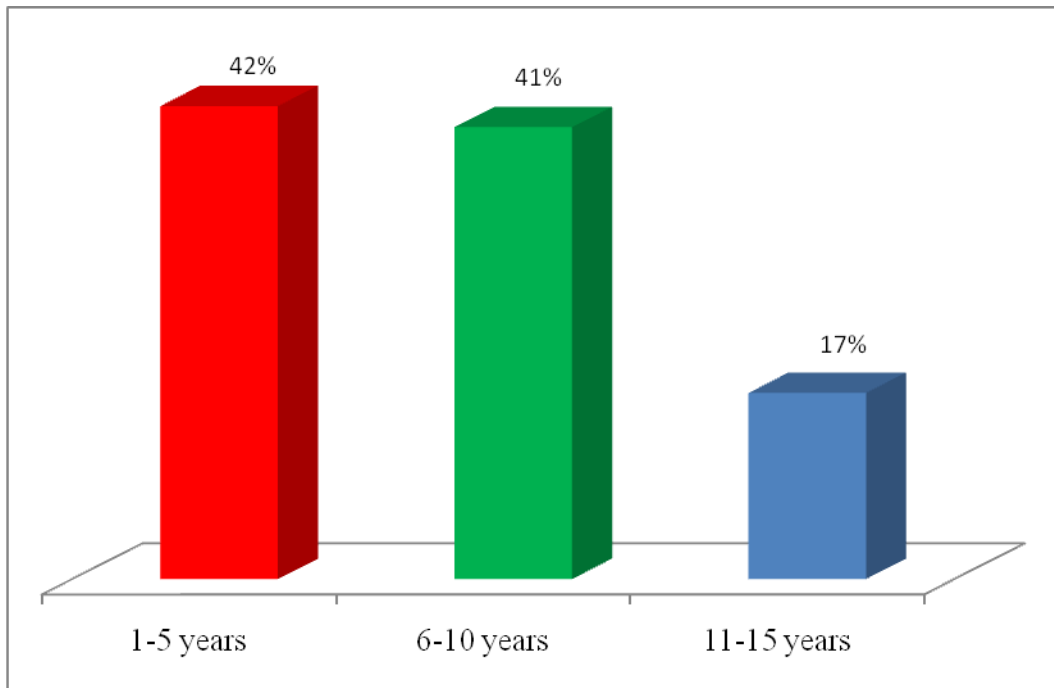


Figure-5: Job experience

4.9 Length of working hours per day

Among the 54 cases, 7 cases length of working hours per day were 10 hours, 21 cases length of working hours per day were 11 hours, 16 cases length of working hours per day were 12 hours, 4 cases length of working hours per day were 13 hours, 6 cases length of working hours per day were 14 hours. In percentage 13% cases length of working hours per day were 10 hours, 39% cases length of working hours per day were 11 hours, 30% cases length of working hours per day were 12 hours, 7% cases length of working hours per day were 13 hours and 11% cases length of working hours per day were 14 hours.

Length of work	Number (n)	Percentage
10 hours	7	13%
11 hours	21	39%
12 hours	16	30%
13 hours	4	7%
14 hours	6	11%
Total	54	100%

Table-4: Length of working hours per day

4.10 Cross-Tabulation between Length of working hours per day and Operators

Among the 54 cases, majority of the cases length of working hours per day were 11 hours and the number were (n=21) in which cutting operators were predominantly higher than finishing operators in number cutting operators (n=19) & finishing operators (n=2), 7 cases length of working hours per day were 10 hours in which cutting operators were 2 & finishing operators were 5, 16 cases length of working hours per day were 12 hours in which cutting operators were 7 & finishing operators were 9, 4 cases length of working hours per day were 13 hours in which cutting operators were 2 & finishing operators were 2 and only 6 finishing operators length of working hours per day.

Length of working hours	Operators		Total
	Cutting	Finishing	
10 hours	2	5	7
11 hours	19	2	21
12 hours	7	9	16
13 hours	2	2	4
14 hours	0	6	6
Total	30	24	54

Table-5: Cross-Tabulation between Length of working hours per day and Operators

4.11 Recurrent attack of low back pain

Among the 54 cases, 38 cases were suffer recurrent attack of low back pain between 1-6 times and 16 cases were suffer recurrent attack of low back pain between 7-15 times. In percentage 70% cases were suffer recurrent attack of low back pain between 1-6 times and 30% cases were suffer recurrent attack of low back pain between 7-15 times.

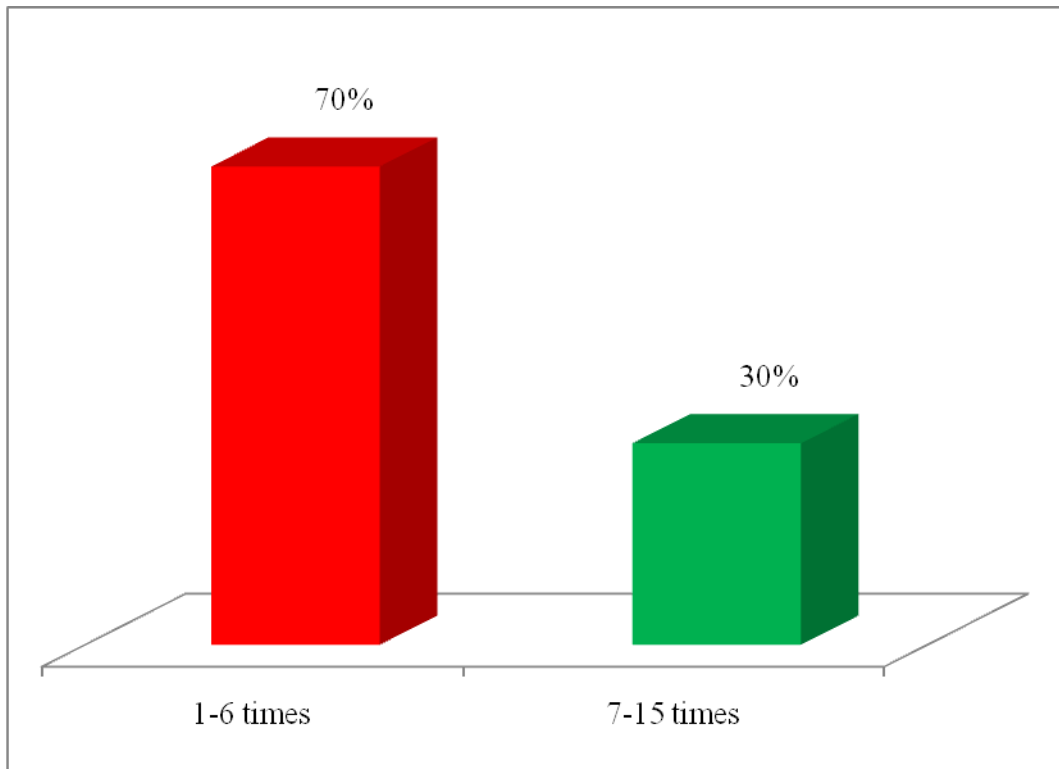


Figure-6: Recurrent attack of low back pain

4.12 Absenteeism from work due to pain

Among the 54 cases, 39 cases became absence in work due to low back pain and 15 cases do not absence in work due to low back pain. In percentage 72% cases became absence in work due to low back pain and 28% cases do not absence in work due to low back pain.

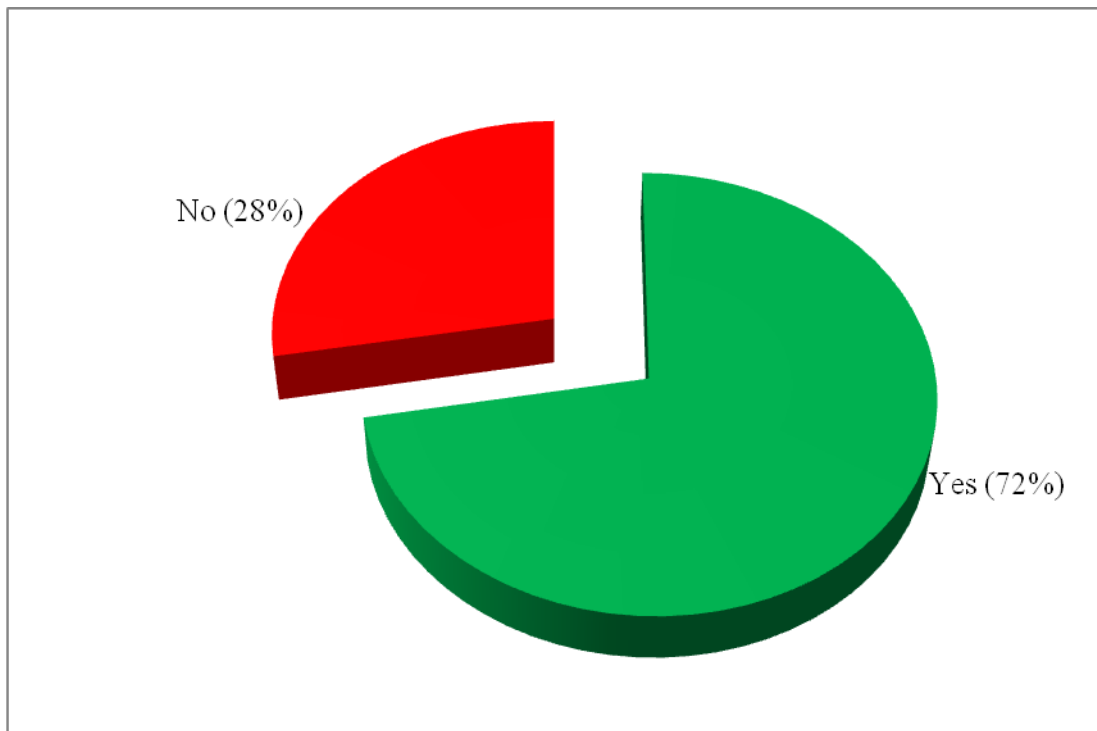


Figure-7: Absenteeism from work due to pain

4.13 Length of the absenteeism from work due to pain

Among the 39 cases, 19 cases became absence in work due to low back pain between 1-5 days , 13 cases became absence in work due to low back pain between 6-10 days and 7 cases became absence in work due to low back pain >10 days. In percentage 49% cases became absence in work due to low back pain between 1-5 days , 33% cases became absence in work due to low back pain between 6-10 days and 18% cases became absence in work due to low back pain >10 days.

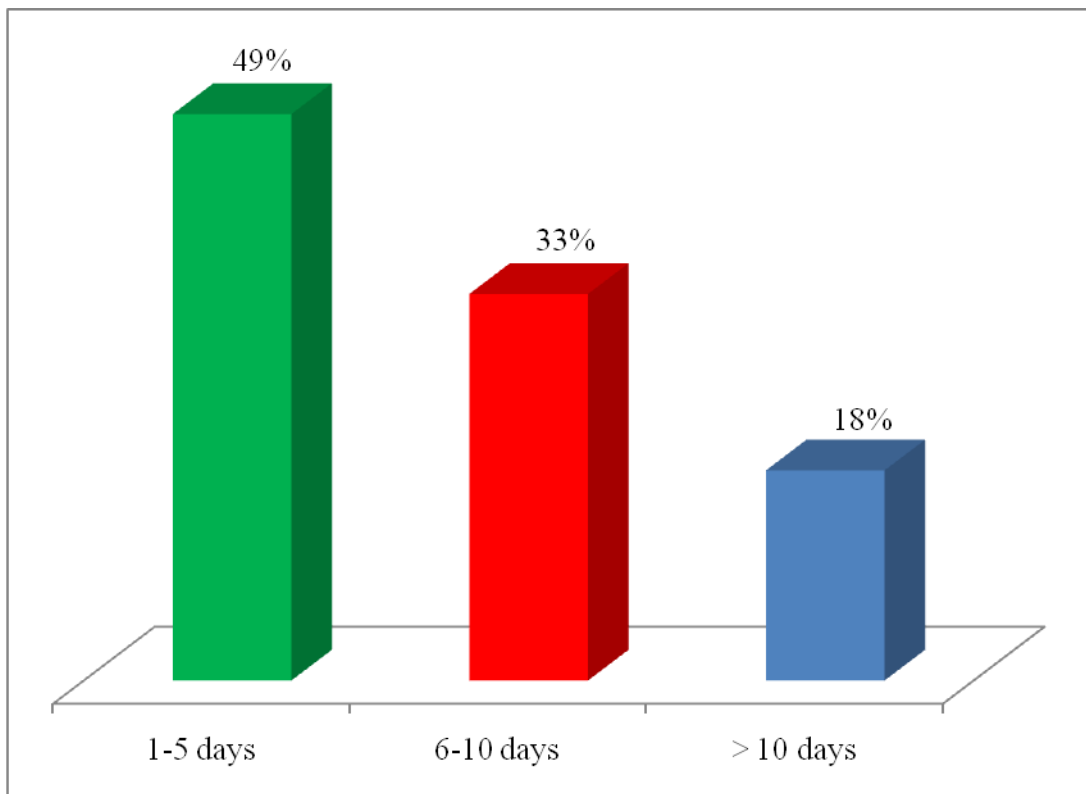


Figure-8: Length of the absenteeism from work due to pain

4.14 Treatment received by participant due to pain

Among the 54 cases, 39 cases received medication as the treatment of low back pain, 2 cases received physiotherapy as the treatment of low back pain and 13 cases other that is they do not received any treatment for low back pain. In percentage 72% cases received medication as the treatment of low back pain, 4% cases received physiotherapy as the treatment of low back pain and others 24% cases do not received any treatment for low back pain.

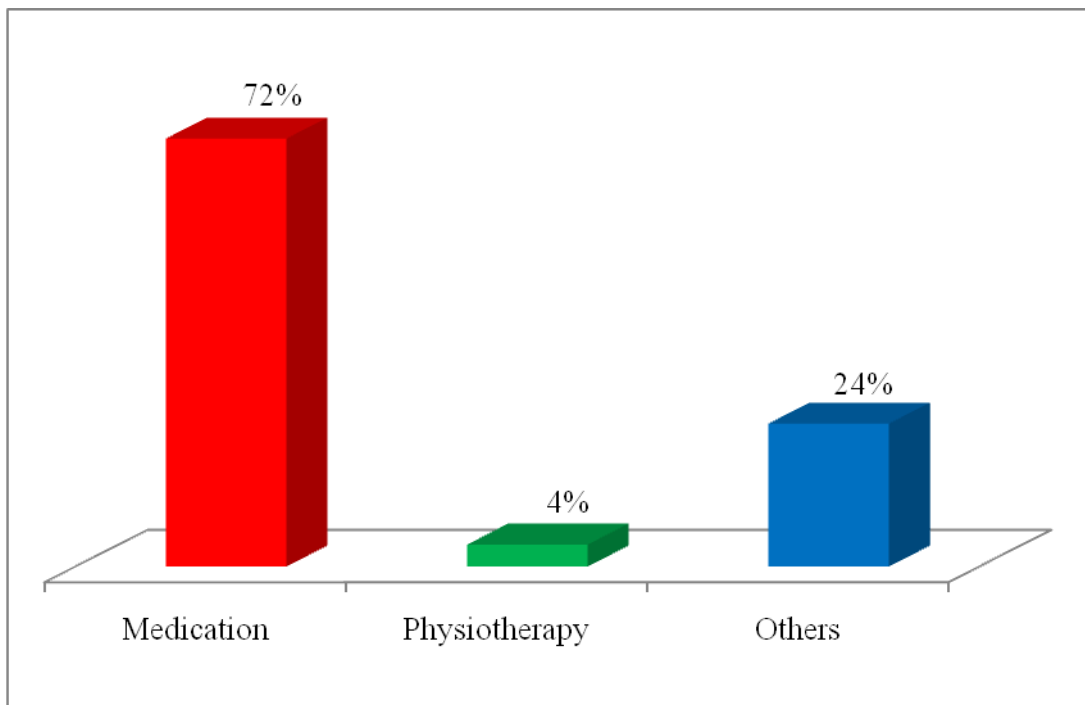


Figure-9: Treatment received by participant due to pain

4.15 Result of the treatment

Among the 54 cases 36 cases result of the treatment were improved, 3 cases result of the treatment were worsed and 15 cases result of the treatment were unchanged. In percentage 67% cases result of the treatment were improved, 5% cases result of the treatment were worsed and 28% cases result of the treatment were unchanged.

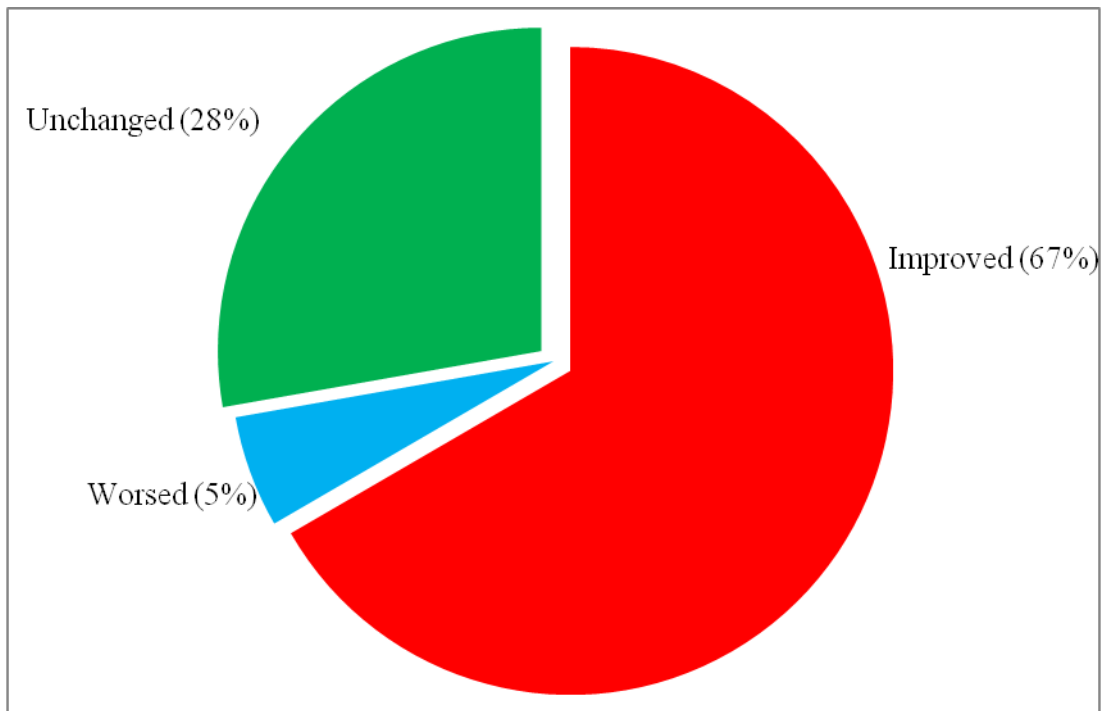


Figure-10: Result of the treatment

4.16 Severity of pain

Among the 54 cases, 13 cases had severity of pain according to VAS scale mild pain (1-4), 28 cases had severity of pain according to VAS scale moderate pain (5-7) and 3 cases had severity of pain according to VAS scale sever pain (8-10). In percentage 43% cases had severity of pain according to VAS scale mild pain (1-4), 51% cases had severity of pain according to VAS scale moderate pain (5-7) and 6% cases had severity of pain according to VAS scale sever pain (8-10).

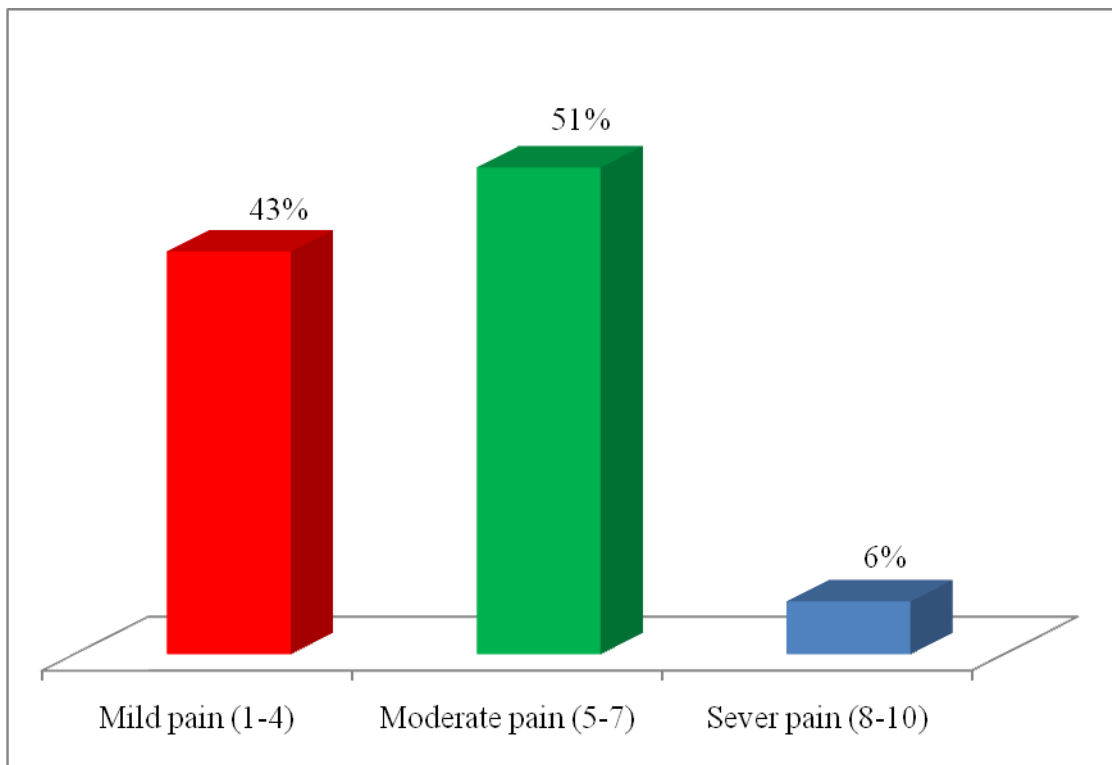


Figure-11: Severity of pain

4.17 Risk factor identification

Among the 54 cases, 2 (3.7%) cases perform lifting activity, 2 (3.7%) cases perform pulling activity, 4 (7.4%) cases perform pushing activity, 9 (16.7%) cases perform bending activity, 6 (11%) cases perform rotational movement activity, 9 (16.7%) cases perform repeated movement activity, 11 (20.4%) cases perform lifting and bending activity, 8 (14.8%) cases perform bending and twisting movement activity, 3 (5.6%) cases perform pulling and pushing activity.

Risk factor	Number (n)	Percentage
Lifting	2	3.7%
Pulling	2	3.7%
Pushing	4	7.4%
Bending	9	16.7%
Rotational movement	6	11%
Repeated movement	9	16.7%
Lifting and bending	11	20.4%
Bending and twisting	8	14.8%
Pulling and pushing	3	5.6%
Total	54	100%

Table-6: Risk factor identification

4.18 Working posture observation

Among the 54 cases, 3 cases maintain sitting posture and 51 cases maintain standing posture. In percentage 6% cases maintain sitting posture and 94% cases maintain standing posture.

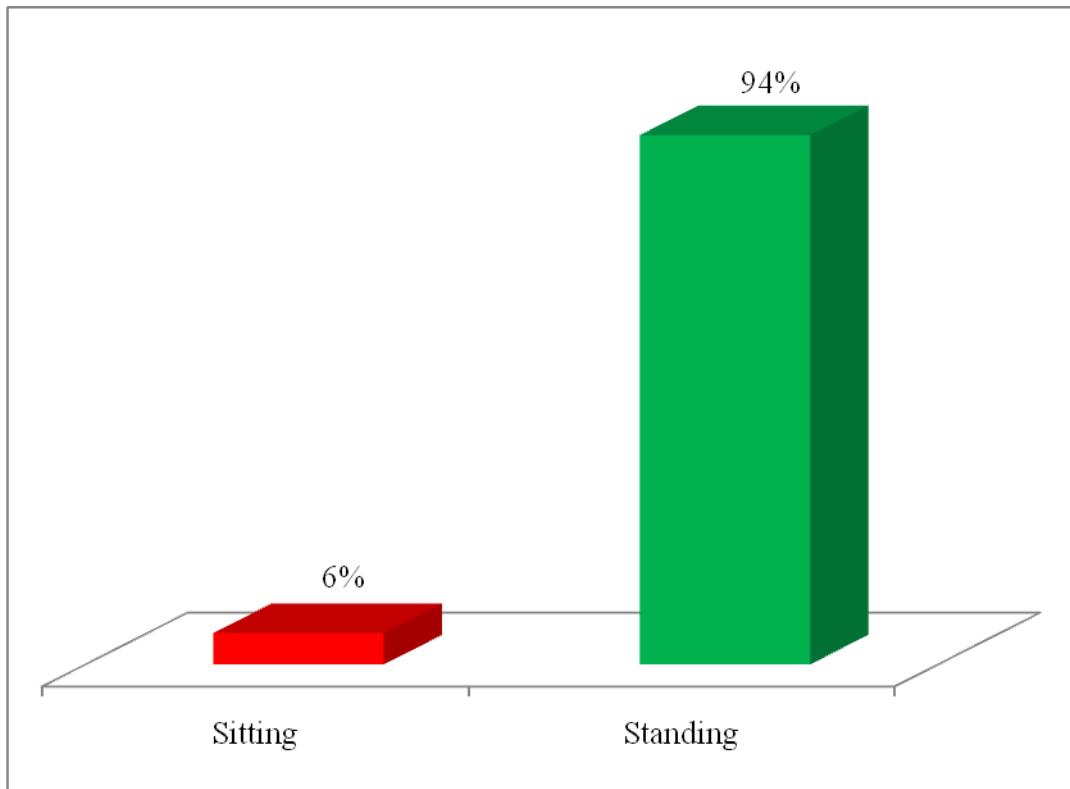


Figure-12: Working posture observation

4.19 Factor that make symptoms worse

Among the 54 cases, 13 cases reported that symptoms became worse during prolong sitting, 40 cases reported that symptoms became worse during prolong standing and 1 cases reported that symptoms became worse during prolong bending. In percentage 24% cases reported that symptoms became worse during prolong sitting, 74% cases reported that symptoms became worse during prolong standing and 2% cases reported that symptoms became worse during prolong bending.

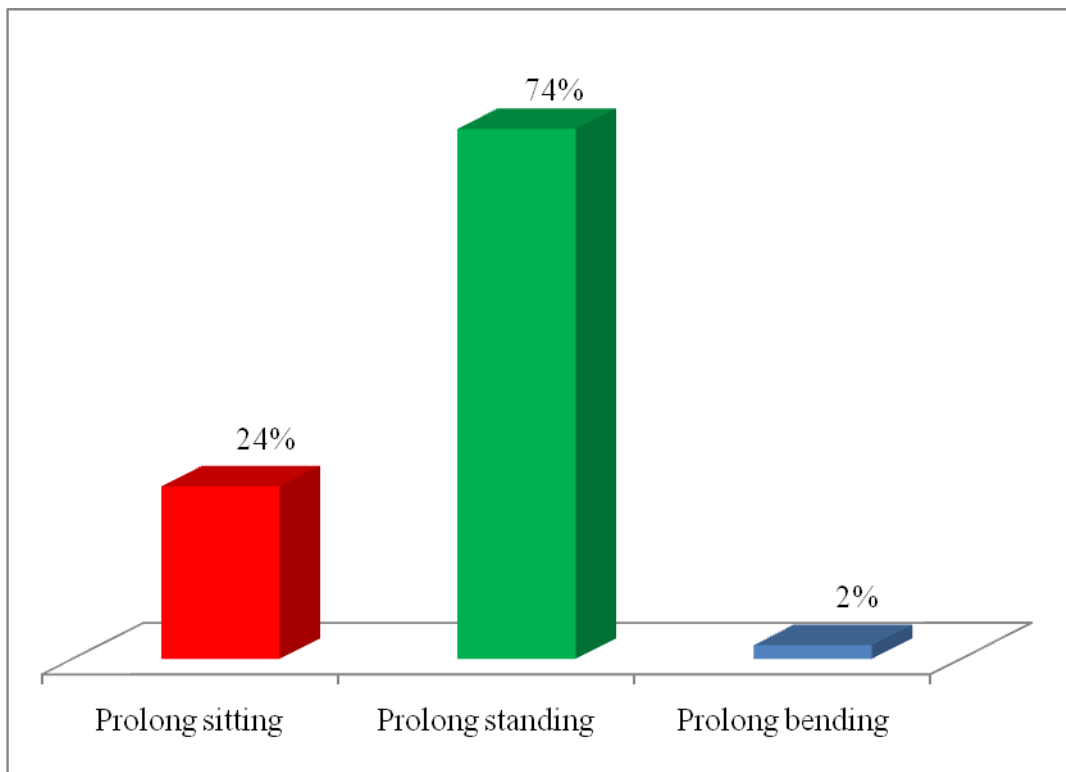


Figure-13: Factor that make symptoms worse

The study result shows that low back pain is prevalent among the among the cutting and finishing operators in garment factory. This is in concordance with a research by Chan et al. (2002) who reported the prevalence back pain 26%, Hague et al. (2001) state that 30% of workers in the European Union (EU) reported problems with back pain, Padmini & Venmathi (2012) reported that backache is 56%, Sarder et al. (2006) found that 18.7% back pain is work related, Ghaffari et al. (2006) of LBP report a point prevalence of 15–30%, and a 1-month prevalence of between 19 and 43%. Worldwide estimates of lifetime prevalence of LBP vary from 50 to 84%. Anderson (2009) mention that back pain occurrence in the adult population of 10–15%, and a point prevalence of 15–30%. In this study the study conductor has found that prevalence of low back pain among the cutting and finishing operators in garment factory was 36%.

Cunningham et al. (2006) state that the first episode of low back pain usually occurs between the ages of 20 and 40, Tiwari et al. (2003) mentioned that age 35 years were found to be significantly associated with development of low back pain among cotton textile workers. In this study the study conductor has found that similar age group more incidence of low back pain. He found the highest number of the cases were between 26-35 years 55.6% (n=30).

Anderson (2009) found that prevalence of low back pain in male 57.4 and in female 70.3 per 1000 population. Cunningham et al. (2006) state that Men and women are both prone to work-related back pain. In this study the study conductor has found that prevalence of low back pain among male was 83% and female was 17%.

Tiwari et al. (2003) mentioned that duration of job experience 10 years were found to be significantly associated with development of low back pain among cotton textile workers. In this study the study conductor has found that 42% cases job experience were between 1-5 years, 41% cases job experience were between 6-10 years, 17% cases job experience were between 11-15 years who suffer from low back pain.

Diaz-Ledezma et al. (2009) focused on patients with acute LBP who had significantly longer sick leave than the rest of the population were patients with an episode of work absenteeism because of LBP in the previous year (14% longer sick leave than patients without that history), manual workers (35% longer than no manual workers). Anderson (2009) mention that different study suggests that took sick leave and it extended from one to fifty two weeks. In this study the study conductor has found that 72% worker was absence in work due low back pain and among them 49% was absence for 1-5 days, 33% was absence for 6-10 days and 18% was absence for more than 10 days.

Tiwari et al. (2003) mentioned that working position requiring prolonged sitting were found to be significantly associated with development of low back pain among cotton textile workers. In this study the study conductor has found that 3.7% cases perform lifting activity, 3.7% cases perform pulling activity, 7.4% cases perform pushing activity, 16.7% cases perform bending activity, 11% cases perform rotational movement activity, 16.7% cases perform repeated movement activity, 20.4% cases perform lifting and bending activity, 14.8% cases perform bending and twisting movement activity, 5.6% cases perform pulling and pushing activity who suffer from low back pain.

Hanney et al. (2009) state that from a prognostic perspective more than three quarters of individuals will have a recurrence of their symptoms within a year from the initial onset and up to 40% report a permanent reduction in activity participation. In this study the study conductor has found that 70% cases were suffer recurrent attack of low back pain between 1-6 times and 30% cases were suffer recurrent attack of low back pain between 7-15 times.

6.1 Conclusion

Low back pain is a common problem among the working population even in a developed country. Age and gender as well as certain work related physical factors influenced the prevalence of low back pain. The aim of the study is to find out the prevalence of low back pain among the cutting and finishing operators in garment factory. Low back pain (LBP) is one of the most prevalent work related condition affecting employed populations in developed countries. This study was revealed out work related risk factor in garment factory. A survey on prevalence of low back pain among the cutting and finishing operators in garment factory reveals that problems are mounting among the cutting and finishing operators in this study and symbolizes that the same situation may prevail all other garment factory. Although cutting and finishing operators are working at garment factory for earning money and livelihood, benefitted by the garment factory but their misery of low back pain, other musculoskeletal problems are alarming concerns for garment factory. If the situation prevails, it will ultimately effect on the garment factory as well as national economy. To face from national challenge, authority should come forward immediately and take necessary steps.

6.2 Recommendations

The aim of the study was to find out the prevalence of LBP among the cutting and finishing operators in garment factory. Though the study had some limitations but study conductor identified some further step that might be taken for the better accomplishment of further study. The main recommendations would be as follow:

- The random sampling technique rather than the convenient would be chosen in further in order to enabling the power of generalization the results.
- The duration of the study was short, so in future wider time would be taken for conducting the study.
- Investigator use only 150 participants as the sample of this study, in future the sample size would be more.
- In this study, the investigator took the sample from The Delta Composite knitting Industries Limited, it was small area to take available sample. So for further study investigator strongly recommended to include every garments factory in Bangladesh and so the results would be generalized in wider population.

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APPENDIX

Appendix: A



বাংলাদেশ হেল্থ প্রফেশন্স ইনস্টিটিউট (বিএইচপিআই)
BANGLADESH HEALTH PROFESSIONS INSTITUTE (BHPI)
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তারিখঃ ০১.০৪.২০১৩

প্রতি
নির্বাহী পরিচালক
দ্য ডেল্টা কম্পোজিট নিটিং ইন্ড্রাঃ লিঃ
জরন্, কাশিমপুর
গাজীপুর।

বিষয় : রিসার্চ প্রজেক্ট (dissertation) এর জন্য আপনার প্রতিষ্ঠান সফর ও তথ্য সংগ্রহ প্রসঙ্গে।

জনাব,

আপনার সদয় অবগতির জন্য জানাচ্ছি যে, পক্ষাঘাতগ্রস্তদের পুনর্বাসন কেন্দ্রে-সিআরপি'র শিক্ষা প্রতিষ্ঠান বাংলাদেশ হেল্থ প্রফেশন্স ইনস্টিটিউট (বিএইচপিআই) ঢাকা বিশ্ববিদ্যালয় অনুমোদিত বিএসসি ইন ফিজিওথেরাপী কোর্স পরিচালনা করে আসছে।

উক্ত কোর্সের ছাত্রছাত্রীদের কোর্স কারিকুলামের অংশ হিসাবে বিভিন্ন বিষয়ের উপর রিসার্চ ও কোর্সওয়ার্ক করা বাধ্যতামূলক।

বিএইচপিআই'র ৪র্থ বর্ষ বিএসসি ইন ফিজিওথেরাপী কোর্সের ছাত্র এস এম ইফতেখার আলম তার রিসার্চ সংক্রান্ত কাজের তথ্য সংগ্রহের জন্য আপনার সুবিধামত সময়ে আপনার প্রতিষ্ঠানে সফর করতে আহ্বান। তার রিসার্চ শিরোনাম "Prevalence of low back pain among the cutting and finishing operators at a selected garnet factory in Gazipur"

তাই তাকে আপনার প্রতিষ্ঠান সফর এবং প্রয়োজনীয় তথ্য প্রদান সহ সার্বিক সহযোগিতা প্রদানের জন্য অনুরোধ করছি।

ধন্যবাদান্তে

মোঃ গুয়ায়দুল হক
সহযোগী অধ্যাপক ও কোর্স-কো অর্ডিনেটর
ফিজিওথেরাপী বিভাগ
বিএইচপিআই।



Appendix: B

Consent statement

(Please read out to the participant)

Assalamualaikum/Namasker, my name is malA rahketfl .M.S , a final year student of Department of Physiotherapy at Bangladesh Health Professions Institute (BHPI) under the University of Dhaka and I am conducting this study to laitrapfulfill rof them eerged yparehtoisyhP ni cSB eht. The title of the study is “**Prevalence of low back pain among the cutting and finishing operators at a selected garment factory in Gazipur**”. I would like to know about some personal and other related information aboutniap kcab wol . This will take approximately 20 - 30 minutes.

I would like to inform you that this is a purely academic study and will not be used for any other purpose. All information provided by you will be kept niconfidential place and it will not be disclosed to others without your permission and your name will not used any where of this study. No any financial incentive will be provided. Your participation in this study is voluntary and you may withdraw yourself at any time during this study without any negative consequences. You also have the right not to answer a particular question that you don't like or do not want to answer during interview.

If you have any query about the study, you may contact with S.M. Iftekhar Alam, and/or the supervisor of this study Md. Obidul Haque, Associate Professor and Head of the Department, Department of Physiotherapy, BHPI, CRP, Savar, Dhaka-1343.

Do you have any questions before I start?

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

YES

NO

Signature of the Partitnopic with date:.....

Signature of the Interviewer with date:.....

Appendix: C

Questionnaire

Title: Prevalence of low back pain among the cutting and finishing operators at a selected garment factory in Gazipur.

A. Socio-demographic information of the participant:

- ID number:
- Date :
- rebmun tcatnoC:
- sserdA:
- Living place:
 - Rural
 - Urban
- Participant's name:.....
- Age (in years):.....
- Sex:
 - Male
 - Female
- tinU:
 - Cutting
 - Finishing
- Educational qualification:
 - Primary
 - SSC
 - HSC
 - Honors
 - Masters
 - Others:.....
- Job experience (raey ni):.....
- Working hours per day with overtime:.....

B. Back pain related question:

1. Have you experience pain or discomfort on your back after starting work in garment?
 1. Yes
 2. No (skip 2-7,10)
2. If yes how many times:.....
3. Did you absence from work due to pain?
 1. Yes
 2. No
4. If yes how many days:.....
5. What kind of treatment did you receive?
 1. Medication
 2. Physiotherapy
 3. Others:.....
6. What is the result of this treatment?
 1. Improve
 2. Worse
 3. Unchanged
7. Severity of pain according to VAS scale?
0.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10
8. What type of activity do perform?
 1. Lifting
 2. Pulling
 3. Pushing
 4. Bending
 5. Twisting movement
 6. Rotation movement
 7. Repetate movement
9. Which posture do you maintain most of the during work?
 1. Sitting
 2. Standing
 3. Bending

10. What factor that make your symptoms worse at work place?

1. Prolong sitting
2. Prolong standing
3. Prolong bending

.....
Signature of participant

.....
Signature of interviewer

“Thank you”