PREVALENCE OF LOW BACK PAIN AMONG THE PEOPLE AGE OVER FORTY AT A SELECTED VILLAGE IN NATOR

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

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PREVALENCE OF LOW BACK PAIN AMONG THE PEOPLE AGE OVER FOURTY AT A SELECTED VILLAGE IN NATOR

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Declarations

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

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Acknowledgement

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Acronyms

ADL   Activities of Daily Living

BHPI   Bangladesh Heath Professions Institute

BMI   Body mass index

BP   Back pain

CRP   Center for the Rehabilitation of the Paralyzed

LBP   Low back pain

PLID   Prolapsed intervertebral disc

SPSS   Statistical Package of Social Science

WHO   World Health Organization

VAS   Visual Analogue Scale

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Abstract

Purpose: To compute the number of people having low back pain per hundred people at a selected village in Nator. *Objectives:* To find out the prevalence of low back pain among the people age over forty in a selected village; to identify vulnerable sex affected by LBP; to determine the educational level of the participant; to determine vulnerable age group of LBP; to assess the behavior of pain; to evaluate the possible cause that might responsible for developing LBP and to identify participants treatment seeking behavior. *Methodology:* A quantitative cross-sectional study design was chosen to accomplish the objectives of the study. One hundred fifteen subjects were selected conveniently from a selected village at Nator. A structural questionnaire was developed through searching related literature. The participants were requested to answer according to the developed format of the question. The answers were entered into SPSS 16 software and analyzed as descriptive statistics. *Results*: The study showed that the prevalence of low back pain among the villagers whose age over forty is 70.4% (n= 81). Their mean age was 56.19 years and standard deviation (±11.24). The study findings reveal the vulnerable age group for the development of low back pain is 40-50 years old. The study finding also indicates that the prevalence of LBP among the male is two times greater than female. Most of male participants are farmer (38.3%). The possible cause of LBP among the farmer might be related to lots of bending work and 39.5% have constant pain. *Conclusion:* The result of the study demonstrates that the prevalence of low back pain was 70.4%. And age, sex, prolong bending posture had a positive effect on the LBP among the people.

1.1Background

Low back pain (LBP) is a significant problem in society. In the general population back pain (BP) is a common and costly problem. Research shows that 80% of the population will suffer from lower back pain (LBP) at some time in their lives (Zhang et al., 2009). Generally it is commonly occur in between ages 25 to 50 years (Charoenchai et al., 2006). According to Horvath et al. (2010) European review article the prevalence of back pain in ranged between 14% and 42%, whereas lifetime prevalence was between 51% and 84% and the higher prevalence are found between the ages of 50 and 64. It was estimated that the point prevalence rate in North America is 5.6% (Loney & Stratford, 1999). In 2003, the 1-year-period prevalence in the general population was 44% in the Netherlands and almost one-fourth of the employed population with LBP reported sickness leave in the past year (Picavet & Schouten, 2003).

Low back pain has becomes a universal problem and is a 20th century disaster (Sparkes, 2005). Williams & Harris (2007) stated that 7.6% of U.S. adults randomly surveyed by telephone had at least one event of severe acute low back pain during a one year period, with 39% of those seeking medical care for the episode. In the general population, correspondingly the prevalence of low back pain in 1-month and annual duration ranges is 30% to 40% and 25% to 60% (McBeth & Jones, 2007).

One study in Canada showed that adults have had LBP during their lifetime in 84%. Average prevalence were in UK in 59% (Waxman et al., 2000), in Finland 75% and in Denmark 70%. In Iranian 29.3% occurrence of LBP was found (Biglarian et al., 2012). In Africa the average prevalence of LBP in one year among adolescents was 33% and among adults was 50%. The average lifetime prevalence of LBP among the adolescents was 36% and among adults was 62% (Louw et al., 2007).

Plouvier et al. (2011) mentioned that in everyday life LBP is the most common complaint in adult population. An adult person experienced a higher prevalence of

severe back pain and when the age increases the persistence of low back pain become more frequent. Peterson et al. (2000) stated that age is an important predictor of LBP. As the age increases the frequency and severity of spinal degeneration increases which can be visualized in radio-graphically. At any given time about 20% of the adult population experiences an episode of LBP (Alsaadi et al., 2011). A systematic review of the global prevalence of low back pain showed that it is a major problem throughout the world and is most common among females and persons ages between 40-80 years (Hoy et al., 2012). A study of Japanese women 25–85 years of age reported that in groups of older the prevalence of LBP has increased (Saidu et al., 2011). Chronic LBP is considered as a major public health issue which causing disability of the elderly people in most developed countries (Muraki et al., 2012). LBP has tendency of becoming persistent or chronic that usually lead to disability. In UK almost 10% of all patients are at risk of developing chronic pain and disability (Buselli et al., 2011).

LBP is a too common, complex and difficult to manage health condition. In acute LBP initial conservative therapy may be beneficial, but chronic LBP still frequently leads to expensive invasive intervention (Janneke et al., 2009). LBP is connected with persistent or recurrent disability cause absence from work and resulting in high costs for society (Macario & Pergolizzi, 2006).

At any given time around 20% of the adult population experiences an episode of LBP. And the estimates of lifetime prevalence are around 80%. In some intensive research, management is only quite effective. The economic burden of LBP is significant. In the USA health-care costs for LBP is more than $90 billion/year, in Australia $1 billion/year and in the UK it is $17 billion/year. LBP which lasts for more than 3 months is called chronic LBP and most of the costs are associated with persistent or chronic LBP (Alsaadi et al., 2011). Extensive costs are associated with LBP which causes lost productivity and income from work, the cost of medical, rehabilitation and surgical interventions and the costs of disabling pain and it limited daily function (Hans et al., 2011).

In rural areas low back pain (LBP) is the most common musculoskeletal disorders among farmers (Taechasubamorn et al., 2011). In developed countries, in Sweden the one year prevalence rate of LBP among farmers was 47% (Holmberg et al., 2002). In Finland the prevalence is 23% and 37% in the US (Rosecrance et al., 2006).

However, in developing countries, the rate was much higher. in South West Nigeria, the prevalence is 72% (Fabunmi et al., 2005) and China the prevalenceis 64% .The variation of prevalence might be due to the distinction of study populations and the relative presence of physical, psychosocial and individual risk factors of LBP (Barrero et al., 2006).

1.2 Rationale

The aim of the study is to find out the prevalence of LBP among the people age over 40 at a selected village in Nator. Aging is a natural process and over the age of 40 people experienced different types of musculoskeletal problem due to degenerative change. They could have chance to develop low back pain and they suffer from low back and it is the common age of degeneration. Degenerative changes of the spine include disc degeneration, facet joint osteoarthritis, vertebral body degeneration, ligament degeneration. This type of degenerative change cause low back pain. In village people, their main occupation is agriculture and female are housewife. They do not maintain their posture and doing different type of loading, bending and squatting type of activity. The spine has three functional roles firstly load bearing, secondly provision of movement, and finally protection of neural elements. Disc degeneration directly affects the first two roles of the spine and because of their activity most of them feel low back pain. These types of activities that may cause chronic low back pain in various work place. It may also decrease productivity and the quality of products and services.

In the study here observe the most ergonomically risk factors which are induced by the villagers in Bangladesh. So, the people are the most vulnerable group for developing LBP in our country. In our economy, farmers are the main stream in our country. They always doing respectable work and also fulfill the internal demand of our country. Even they do not take proper treatment for their low socio-economical condition. The study will provide the prevalence of low back pain among the aged (over 40) people. The study will give details information to the patient about low back pain so that people can modify their life style regarding LBP and we can provide better treatment as well as essential advice to the patients. That's why villagers are selected in the study.

1.3 Research Question

What is the prevalence of low back pain among the people age over 40 at a selected village in Nator?

1.4 Objective

1.4.1 General objective

To identify the prevalence of low back pain among the people age over 40 at a selected village in Nator.

1.4.2 Specific objectives

- To calculate the number of participant with low back pain among the people age over 40 and percentage of this proportion.
- To identify the most affected vulnerable age group of low back pain
- To identify vulnerable sex affected by LBP.
- To assess the behavior of pain.
- To determine the educational level of the participant.
- To evaluate the possible cause that might responsible for developing LBP.
- To identify participants treatment seeking behavior.

1.5 List of variables

Conceptual framework

Independent variables

Dependent variable

Age

Sex

Posture

Body type

Low back pain

Weight lifting

Occupation

Trauma
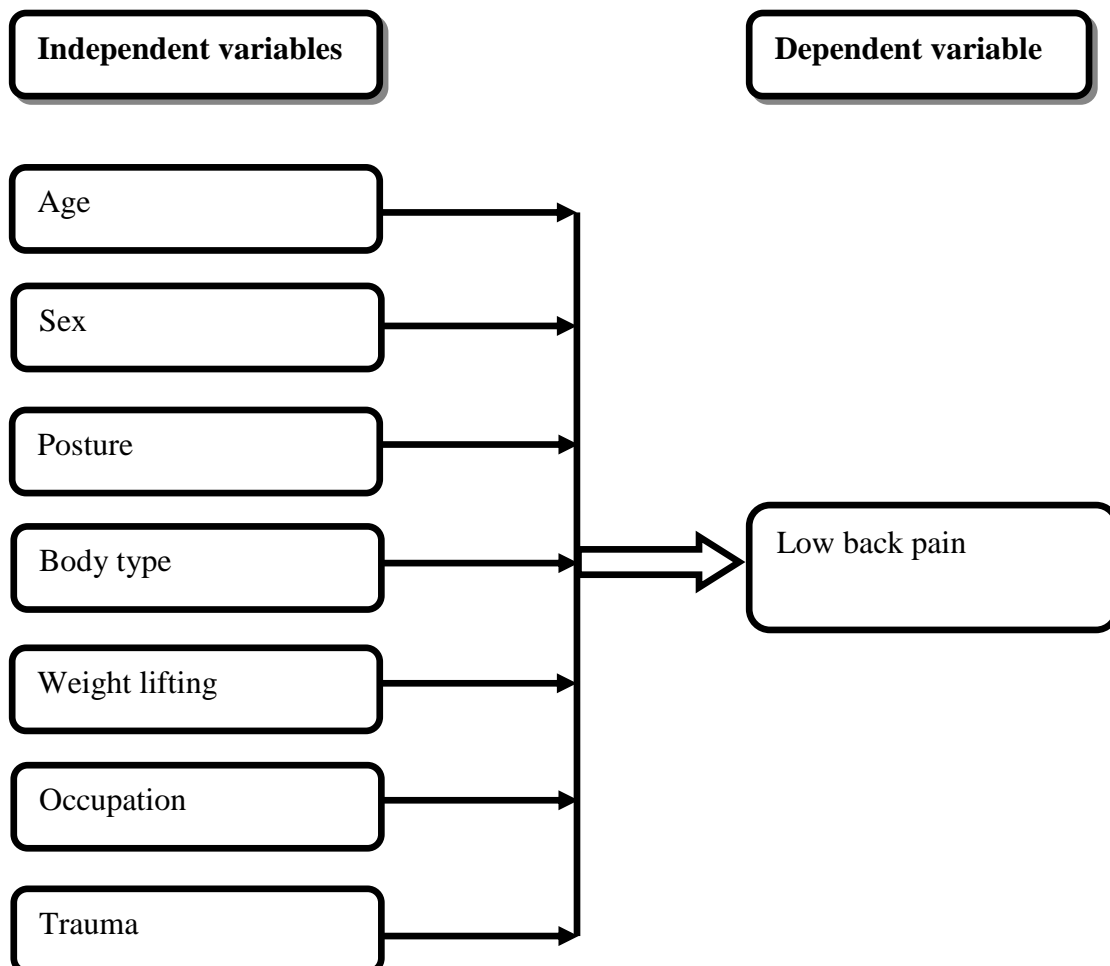
1.6 Operational Definition

Prevalence

The degree to which something is prevalent; especially: the percentage of a population that is affected with a particular disease at a given time.

Low back pain

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

Age

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

Heavy weight lifting

Carrying children, collecting water with heavy jar and any kind of heavy objects.

Back trauma

Any kind of accident, trauma that directly affect the back.

Age over 40

The information was obtained by asking a question "How old are you?"

Back pain (also known as "dorsopathy") is pain felt in the back that may come from the muscles, nerves, bones, joints or other structures in the spine. The pain may constant or intermittent, stay in one place or refer or radiate to other areas. It may be a dull ache or a sharp or burning sensation. Pain often referred to the hip, buttock or one leg. The cause may be muscle strain or trigger point, instability due to weak postural muscles, hypomobile spinal facet joints, or degeneration or herniation of spinal disks. LBP perhaps more precisely called lumbago or lumbosacral pain occurs below the 12th rib and above the gluteal folds (Sikiru & Hanifa, 2010).

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

Kuorinka & Forcier (1995) argued that low back pain is neither a disease nor a diagnostic entity of any kind. The term refers to pain of variable duration in an area of the anatomy afflicted so often that it is has become a paradigm of responses to external and internal stimuli. Low back pain is often accompanied by sciatica, which is pain that involves the sciatic nerve and is felt in the lower back, the buttocks, and the backs of the thighs. Low back pain has several different possible causes: strain on the muscles of the lower back may be caused by obesity; pregnancy; or job-related stooping, bending, or other stressful postures. Low back pain is more precisely called lumbago or lumbosacral pain occurs below the 12th rib and above the gluteal folds (Sikiru & Hanifa, 2010). Emotional stress, improper posture, being overweight or

sitting in the same position for long periods of time it can also because of low back pain. Even a severe cough can result in low back strain (Back Pain Health Center, 2011).

Mary & Ann (2006) stated that vertebrae that make up the spinal column through which the spinal cord passes. When these muscles or ligaments become weak, the spine loses its stability, resulting in pain. Because nerves reach all parts of the body from the spinal cord, back problems can lead to pain or weakness in almost any part of the body. Shiel (2009) explained that low back pain is pain and stiffness in the lower back. It is one of the most common reasons which people miss work. Low back pain is usually caused when a ligament or muscle holding a vertebra in its proper position is strained. According the anatomical view, pain in the lumbosacral area of the spine encompassing the distance from the 1st lumbar vertebra to the 1st sacral vertebra is termed as LBP. This is the area of the spine where the lordotic curve forms. 4th and 5th lumbar segment is the most frequent site of LBP (Kravitz & Andrews, 1984).

The overall lifetime and one year period prevalence of low back pain were 58.3% and 36.1%. Rates in men and women were similar. Symptoms were more common in men with manual occupations than in those with non-manual jobs, but in women there was no clear trend in relation to social class. Geographical differences in prevalence were small, but the threshold for consulting general practitioners about symptoms varied clearly from place to place (Kevin et al., 1991).

The low back consists of vertebral bodies, vertebral discs (cushions between the bones), cartilage (lines the bones that connect with other bones), supportive structures surrounding the spine, such as muscles, tendons (connecting muscle to bone), ligaments (connecting bone to bone) (Integrative pain medicine, 2012). Buckwalter et al. (1993) has also been suggested that metabolic disorders may be detrimental, combined with its co-morbidities of diabetes and hypertension may alter the pathophysiology of diseases of the tendons and ligaments during the process of aging thus potentially leading to LBP. Intervertebral discs begin deteriorating and growing thinner by age 30 and increases the risk for disc herniation. As people continue to age

and the disks lose moisture and shrink, the risk for spinal stenosis increases. At the time of menopause the incidence of low back pain and sciatica increases in women as they lose bone density. In older adults, osteoporosis and osteoarthritis are also common (Times Health Guide, 2013).

Low back pain remains to be the single most common reason for a visit to a general practitioner and is also the greatest cause for work- related disability. It is from mechanical origin is identified by the presence or absence of symptoms and signs with different postures or movements. Mechanical LBP is commonly treated conservatively with physical therapy (Kumar, 2011). There are three categories of low back pain. First one is back pain only (93%), musculoligamentous, fracture, spondylosis, infection, tumor, non-back related. second one is sciatica (4%), it includes radiculopathy and associated symptoms – bowel, bladder, and saddle anesthesia (cauda equine syndrome) and third one is spinal stenosis (Putz & Anderson, 1988).

Bunzli et al. (2010) stated that LBP is categorized by the duration of symptoms as: Acute LBP (0–6 weeks); Sub acute LBP (7–12 weeks); Chronic LBP (>12 weeks) Recurrent LBP: Acute LBP in a patient who has had previous episodes of LBP from a similar location, with asymptomatic intervening intervals (Alvarez et al., 2003). Disability related to chronic low back pain (CLBP) is a complex and multifactorial phenomenon, associated with high social and health costs. This complexity can be explained by the interaction among the many variables that determine disability. The high costs are associated with productivity losses, leaves of absence from work and health system spending (Salvetti et al., 2012). Dartmouth-Hitchcock (2013) stated that chronic low back pain is defined as long-lasting lower back pain continuing for more than three months. In the United States it is estimated that seven million adults have activity limitations as a result of chronic low back pain (Jacobson et al., 2009).

As for the risk factors of LBP, a large number of studies have been conducted that have examined the gender differences, height and weight, body mass index (BMI), physical factors such as the mobility of the spinal column and muscle strength, sports activities, differences in lifestyles such as the amount of activity, time spent sitting in

chairs, time spent watching TV (Jones & Macfarlane, 2005). Repeated bending and lifting activities greatly increase the risk of developing low back pain (Dolan & Adams, 1998). Menopause is commonly associated with rapid bone loss, beginning 2–3 years before and continuing for up to 3–4 years after menopause. This bone loss manifests as a significant decrease in bone mineral density (BMD) measured by dual energy X-ray absorptiometry. BMD is an important clinical measure of bone strength and health, and an association between reduced BMD and musculoskeletal pain is plausible (Briggs et al., 2009).

The risk of developing LBP among the women increased up to 50-59 years because they are more active in this time and after 60 years the frequency of LBP gradually decreases (Urquhart, et al., 2009). Back pain is the most frequent cause of the activity limitation in people younger than 45 years of age (Pop, 1889). Studies have shown that the risk of low back pain increases as a patient gets older but once one reaches the age of about 65 the risk stops increasing (StopPain.org, 2013).

A medical history provides major clues to a potential diagnosis. Up to 85% of patients cannot be given a definitive diagnosis because of weak associations among symptoms, pathological changes, and imaging results. Diagnosis consists of physical examination and laboratory investigation. 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).

The lumbar pain is relatively easier to diagnose than pelvic pain. Pain on palpation of paraspinal muscles, hypo mobility and weakness in the back signifies muscle insufficiency in the lumbar spine. There could also be decrease range of motion of lumbar spine, with pain reproduced on lumbar flexion (Cart, 2010). Besides these some special test should be done, these special tests include: X-rays, Bone scan, Magnetic Resonance Imaging (MRI), CT scan, Myelography, Discography, Electrodiagnostic procedures which include electromyography (EMG), nerve conduction studies, and evoked potential (EP) studies (Slowik, 2011). LBP is usually

a benign and self limiting condition. It is difficult to treat only using medical interventions due to the complex relationship of biological, psychological, and social factors in its onset and persistence (Buselli et al., 2011)

A small retrospective pilot study (n=33) showed that a treatment of 20 sessions of distraction of the lumbar spine in the Accu-SPINA device, gave pain relief 1 year after the treatment completion to 76% of the patients with a herni-ated disc (Shealy et al., 2005). Management of LBP with physiotherapy (PT), chemotherapy and surgery has been well established. There was no sex difference in consultation and management of LBP, but there was a significant association between severity of LBP and type of management (Sikiru & Hanifa, 2010).

The principles of treatment of LBP are to relieve pain in acute case, restore normal movement in chronic cases and recurrence is to be prevented (Ebnezar, 2005, p. 301). Juniper et al. (2009) reported that 14% of adults aged 65 years and older with frequent back pain in Italy reported regular use of analgesics and or NSAIDs in the previous 2 weeks, with higher rates in women (17%) than in men (8%). Tricyclic anti-depressants (TCA) are commonly used to treat numerous chronic pain syndromes (Jacobson et al., 2009). Antispasticity drug tizanidine has been well studied for low back pain (Chou et al., 2007).

Among current musculoskeletal interventions used to treat LBP, Physiotherapy has the highest evidence of effectiveness in avoiding recurrence and chronic disability a number of physiotherapy, chiropractic and osteopathic techniques are currently used in the treatment of patients with low back pain, which are design to reduce the pain and improve range of motion (Al-Eisa, 2010).

In practice guidelines published jointly by the American College of Physicians and the American Pain Society, fair to good evidence is cited supporting numerous alternative treatments for chronic LBP and sub acute LBP, including acupuncture, yoga, massage, spinal manipulation, and functional restoration. For acute, non-specific back pain, evidence of efficacy was found only for spinal manipulation and superficial heat (Cohen et al., 2009). Surgery may be considered in cases of cauda equina syndrome, which is a surgical emergency; severe or progressive neurologic

deficit; infections, tumors, and fractures compressing the spinal cord; mechanical instability of the back; and, perhaps, intractable pain (leg pain equal to or greater than back pain) with a positive straight-leg-raising test and no response to conservative therapy. Two of most commonly performed operations are posterior lumbar interbody fusion (PLIF), and anterior lumbar disc replacement (Krishna, 2013).

The prognosis for most patients with acute LBP is excellent. Due to a favorable prognosis in the acute stages, 80% to 90% of the patients will improve considerably within 6 to 8 weeks. The prognosis for chronic LBP is considerably less favorable causing potentially long-lasting suffering to the patient and significant socioeconomic costs (Aure et al., 2003). Acute LBP is usually considered to be self-limiting but 2–7% of people develop chronic pain (Burton, 2005).

Sharma et al. (2003) stated that most individuals recover quickly from acute episode of LBP but the risk of recurrence is high, up to 60% within one year and up to 40% within six months. But certain beliefs and behavioral or cultural factors may consistently predict poor outcomes. it include a belief that back pain is harmful or potentially severely disabling, a tendency to depressed mood, fear-avoidance behavior and reduced activity levels and withdrawal from social interaction, an expectation of passive treatment, rather than a belief that active participation will help. Other factors that may interfere with recovery such as anxiety, depression, unresolved occupational issues, prior disability claims (Rives & Douglass, 2004).

Postural education in workplace is very important for the prevention of low back pain and it may help to reduce the prevalence. The use of correct postures during activities of daily living will limit physical strain on the musculoskeletal system thus reduces the risk of LBP. It is stated that prolonged static positions including sitting and standing for long hours at work, should be avoided and maintaining correct posture during sitting and standing is also important (Omokhodion, 2002).

3.1 Study design

The aim of the study was to find out the prevalence of low back pain among the people age over 40 at a selected village. For this reason, here chooses a cross sectional survey study because that was the best way to determine prevalence. A cross-sectional study is a descriptive study which providing a "snapshot" of the frequency and characteristics of a disease in a population at a particular point in time.

3.2 Study sites and Study area

As this was a survey on prevalence of LBP among the people age over 40 at a selected village, so the study was conducted in village (Hulhulia) area of Nator.

3.3 Sample size

Sampling procedure for cross sectional study done by following equation-

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

Here,

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

P= 0.76

q= 1-p

d= 0.05

According to this formula of sample size calculation, the actual sample size of the study is 280. But due to the limitations only 115 samples took conveniently from the population for this study.

3.4 Study population and sampling

A population refers to the members of a clearly defined set or class of people, objects or events that were the focus of the investigation. So all of the village people in Bangladesh, who fulfill the inclusion and exclusion criteria of that study, were the population of that study. But it was not possible to study the total population

within the time of that study, so only 115 people as sample that were selected conveniently from selected area of Nator according to the inclusion and exclusion criteria.

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 was easy to get those subjects according to the criteria concerned with the study purpose through the convenience sampling procedure.

3.6 Inclusion criteria

- The people who lived in the village.
- Both male and female people were selected.
- Age group was between 40-90 years.

3.7 Exclusion criteria

- Female who were pregnant.
- Subject who were medically unstable.
- Subject who had mental disorders.

3.8 Data collection tools

A questionnaire with mixed question was used for data collection. In that time some other necessary materials were used like weight machine, height tap, scale, calculator, pen etc. Here took permission from each participant by using a written consent form in Bangla and English.

3.9 Procedure of data collection

At very beginning of data collection 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. Here also clarify to all participants about the aim of the study. Participants were ensured that any personal information were not be published anywhere. At first took permission 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 people age over 40. Height was measured in standing position, with shoes removed, using a wall-mounted height tap. Weight was measured with the subject in light indoor clothes, with shoes removed and emptied pockets. BMI (body mass index) was calculated as weight in kilograms divided by height in meters squared, and subjects were stratified into obese (BMI $\geq$ 30 kg/m2) , overweight (BMI 25- 29.9 kg/m2), medium (BMI 18-24.9 kg/m2), Thin (<18). 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.

3.10 Data analysis

Data was analyzed with the software named Statistical Package for Social Sciences (SPSS) Version 16.0. Data will be 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 charts.

3.11 Informed consent

In this study interested subjects were given consent forms and the purpose of the research and consent forms were explained to the subject verbally. They were told that participation is fully voluntary and they have the right to withdraw at any time. They were also told that confidentiality was maintained. Information might be published in any presentations or writing but they not identified. The study results might not have any direct effects on them but the members of Physiotherapy population may be benefited from the study in future. They would not be embarrassed by the study.

3.12 Ethical consideration

Permission was taken from BHPI ethical committee for research project then permission was taken from the Member of chougram union for data collection. The participants were explained the purpose and goals of the study. This study followed the World Health Organization (WHO) & Bangladesh Medical Research Council (BMRC)

guidelines and strictly maintained the confidentiality. Meanwhile, it was purely an observation research, so nothing was intervene through which the research was considered as limited ethical issue.

3.13 Limitations

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

- The samples were collected only from the selected village in Nator and the sample size was too small, so the result of the study could not be generalized to the whole population of villagers in Bangladesh.

- The research project was done by an undergraduate student and it was first research project for her. So the researcher had limited experience with techniques and strategies in terms of the practical aspects of research. As it was the first survey of the researcher so might be there were some mistakes that overlooked by the supervisor and the honorable teacher.

Prevalence of LBP

Among all of the 115 participants 81 participants (70.4%)$\left(\frac{81\times100}{115}\right)$ suffered from LBP and 34 participants (29.60%) did not suffered from LBP.
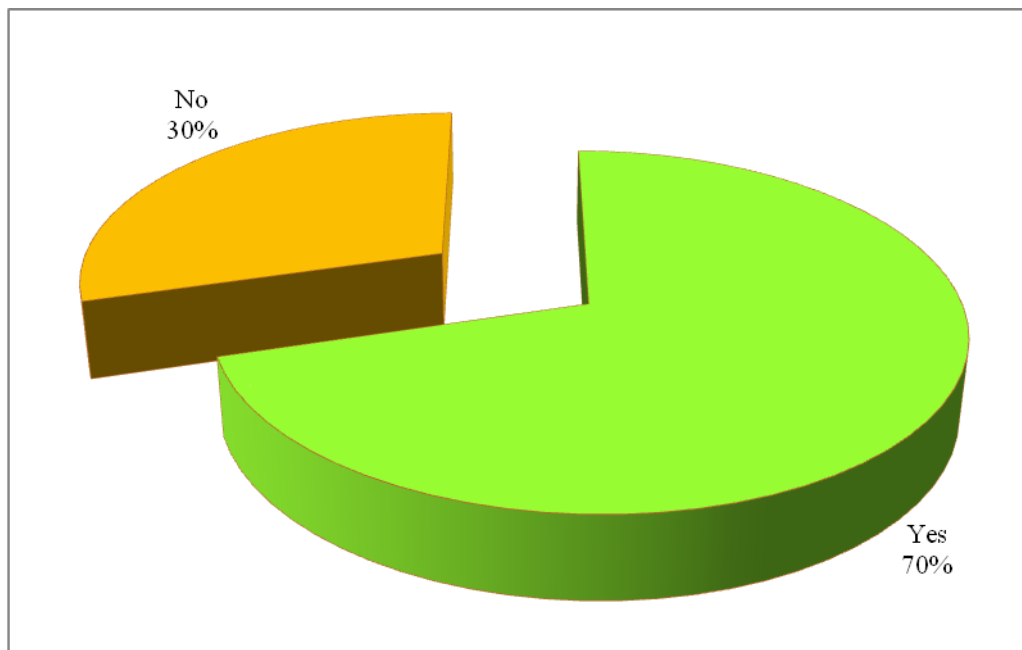
Fig-1**:** Prevalence of LBP

Age range of the participants

Out of 115 participants 34 participants had no LBP and mean age were 52.35 years with standard deviation (± 9.63). Median was 51 and mode was 40. Among the age of the unaffected participant's, 40-50 years were 50%, 51-60 years were 20.59%, 61-70 years were 23.53%, 71-80 years were 5.88% and 81-90 years were 0%.

Out of 115 participants 81 participants had low back pain and mean age were 56.19 years with standard deviation (±11.24). Median was 55.00 and mode was 44. Among the affected participants age, 40-50 years were 40.74%, 51-60 years were 23.45%, 61-70 years were 25.93%, 71-80 years were 8.64% and 81-90 years were 1.23%. Here the most vulnerable age group is 40-50 years that is 40.74%.

Age range	Unaffected participants (n=34)		Affected participants (n=81)	
	Number	Percentage	Number	Percentage
40-50 years	17	50%	33	40.74%
51-60 years	7	20.59%	19	23.45%
61-70 years	8	23.53%	21	25.93%
71-80 years	2	5.88%	7	8.64%
81-90 years	0	0%	1	1.23%
Total	**34**	**100%**	**81**	**100%**

Table-1: Age range of the participants

Gender of the participants

Male participants were predominantly higher than female participants. Out of 115 participants 81 participants had low back pain. Here 54 (66.7%) were male and 27 (33.3%) were female. Also 34 participants have no LBP and here 27 (79.42%) were male and 7 (20.59%) were female. The study shows that in village male participants were more vulnerable than female participants.

Gender of the participants	Unaffected participants (n=34)		Affected participants (n=81)	
	Number	**Percentage**	**Number**	**Percentage**
Male	27	79.42%	54	66.7%
Female	7	20.59%	27	33.3%
Total	**34**	**100%**	**81**	**100%**

Table-2: Gender of the participants

Educational level

Among the 81 participants having LBP, 16 participants had no formal schooling, 3 participants had less than primary school, 24 participants completed primary education, 24 participants completed SSC, 5 participants completed HSC, 5 participants completed Graduate, and 4 participants had masters completed. Among unaffected participants 4 participants had no formal schooling,4 participants completed less then primary school, 5 participants completed primary education, 15 participants had completed SSC, 1 participants completed HSC, 4 participants had Graduate completed, and 1 participants had Masters completed. The study shows that LBP is higher in lower educational level rather than higher educational level because of lack of awareness.

Educational level	Unaffected participants (n=34)		Affected participants (n=81)	
	Number	**Percentage**	**Number**	**Percentage**
No formal schooling	4	11.76%	16	19.75%
Less than primary school	4	11.76%	3	3.70%
Primary education	5	14.71%	24	29.62%
SSC	15	44.12%	24	29.62%
HSC	1	2.94%	5	6.17%
Graduate	4	11.76%	5	6.17%
Masters	1	2.94%	4	4.94%
Total	**34**	**100%**	**81**	**100%**

Table-3: Educational level

Body type (BMI)

Among the 81 participants having LBP there body type were thin 9.90% (n=8), medium 60.50% (n=49), overweight 22.20% (n=18), obese 7.40% (n=6).

In case of 34 unaffected participants, there body type were thin 23.53% (n=8), medium 41.18% (n=14), overweight 35.29% (n=12), obese 0% (n=0).

Body type (BMI)	Unaffected participants (n=34)		Affected participants (n=81)	
	Number	Percentage	Number	Percentage
Thin((<18kg/m2)	8	23.53%	8	9.9%
Medium (18-24.9 kg/m2)	14	41.18%	49	60.50%
Overweight (25-29.9 kg/m2)	12	35.29%	18	22.20%
Obese(≥ 30 kg/m2)	0	0%	6	7.4%
Total	**34**	**100%**	**81**	**100%**

Table-4: Body type of the participant

Occupation of the participants

Result showed that among 81 participant who had low back pain 38.30% (n=31) were farmer, 4.9% (n=4) were driver, 6.2% (n=5) were businessman, 7.4% (n=6) were day laborer, 3.7% (n=3) were unemployed, 27.2% (n=22) were house wife, 4.9% (n=4) were teacher and 7.4% (n=6) were employed.

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

Occupation	Unaffected participants (n=34)		Affected participants (n=81)	
	Number	Percentage	Number	Percentage
Farmer	14	41.2%	31	38.30%
Driver	2	5.9%	4	4.9%
Businessman	1	2.9%	5	6.2%
Day laborer	2	5.9%	6	7.4%
Unemployed	0	0%	3	3.7%
House wife	7	20.6%	22	27.2%
Teacher	4	11.8%	4	4.9%
Employed	4	11.8%	6	7.4%
Total	**34**	**100%**	**81**	**100%**

Table-5: Occupation of the participants

Common working posture

Common working posture of the affected participants was sitting 29.63% (n=24), bending 18.52% (n=15), squatting 20.99% (n=17), standing 19.75% (n=16) and walking 11.11% (n=9).

Working posture	Number	Percentage
Sitting	24	29.63%
Bending	15	18.52%
Squatting	17	20.99%
Standing	16	19.75%
Walking	9	11.11%
Total	**81**	**100%**

Table- 6: Common working posture

Stressful posture among low back pain affected participants

Among the affected participants who were suffering from LBP, the most painful or stressful posture was bending 39.51% (n=32), sitting 29.63% (n=24), squatting 17.28% (n=14), standing 6.17% (n=5), walking 6.17% (n=5) and lying 1.23% (n=1).

Risk posture	Number	Percentage
Bending	32	39.51%
Sitting	24	29.63%
Squatting	14	17.28%
Standing	5	6.17%
Walking	5	6.17%
Lying	1	1.23%
Total	**81**	**100%**

Table- 7: Stressful posture among LBP affected participants

Lifting heavy object during work time

Among the 115 participants, 88 participants (76.52%) lifting heavy object during work time and 27 participants (23.48%) never lifting heavy object during work time.
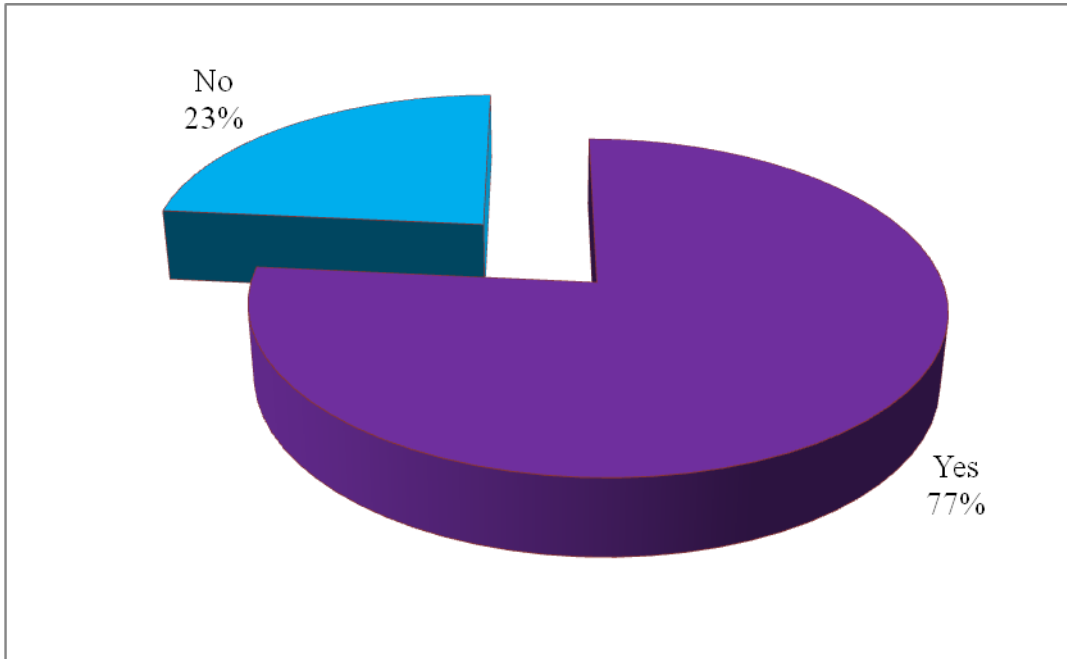
Fig-2: Lifting heavy object during work time

Severity of pain

Among the 115 participants, the severity of pain in VAS scale was in between no pain in 29.6% (n=34), medium pain in 58.3% (n=67) and severe pain in 12.20% (n=14)
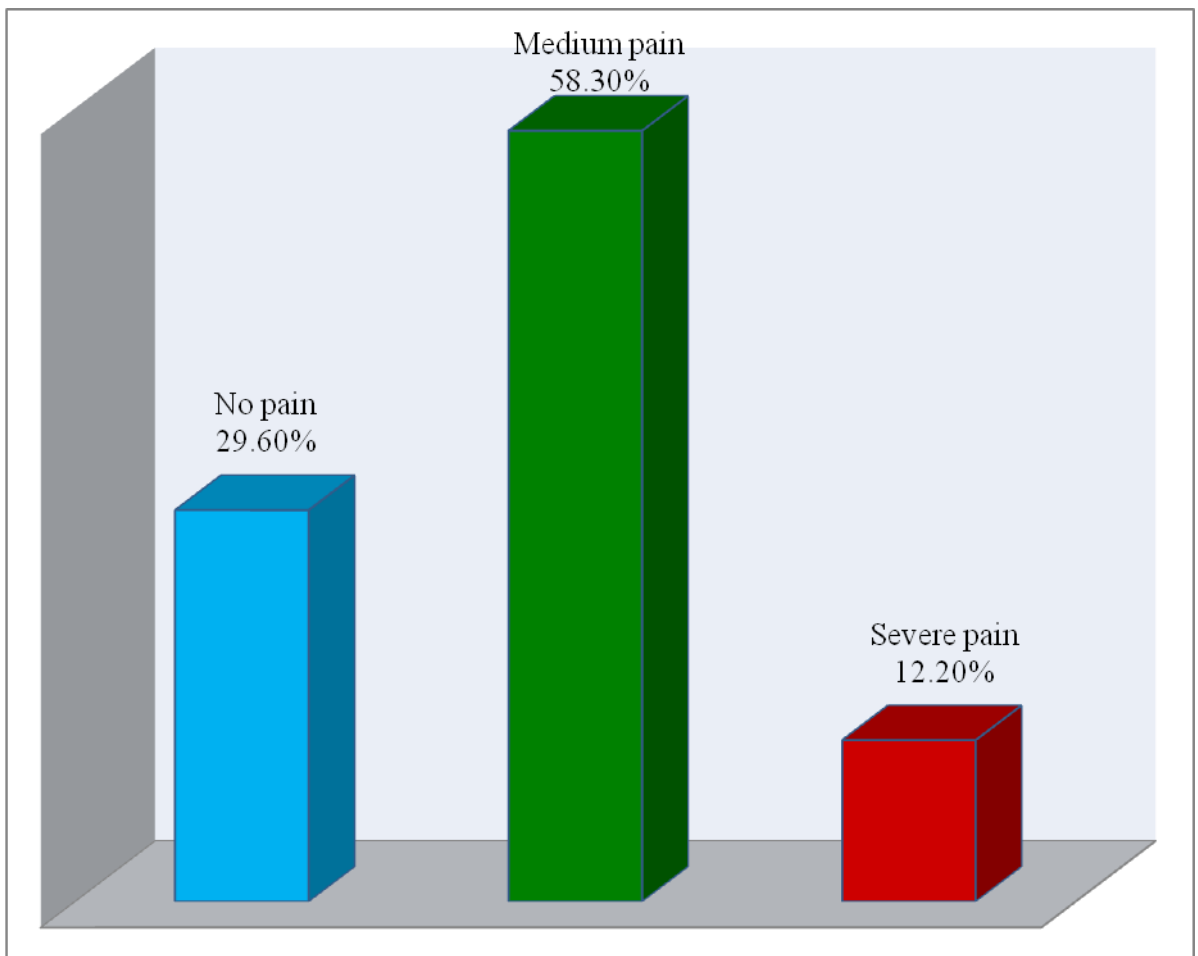
Fig 3: Severity of pain

Response of pain during heavy weight lifting

Among the 115 participants, 39.10% (n=45) never feel pain, 19.13% (n=22) sometimes feel pain, 10.43% (n=12) often feel pain and 31.30% (n=36) all time feel pain during heavy weight lifting.

Pain during heavy weight lifting	Number	Percentage
Never	45	39.10%
Sometimes	22	19.13%
Often	12	10.43%
All time	36	31.30%
Total	**115**	**100%**

Table- 8: Response of pain during heavy weight lifting

Behavior of pain

Among the affected participants who were suffering from LBP, 28.4% (n=23) participants felt occasional, 32.1% (n=26) felt intermittent and 39.5% (n=32) felt constant LBP.

Behavior of pain	Number	Percentage
Occasional	23	28.4%
Intermittent	26	32.1%
Constant	32	39.5%
Total	**81**	**100%**

Table-9: Behavior of pain among the participants

Frequency of taking treatment

Among the affected participants who were suffering from LBP, 75.35% (n=61) participant took treatment and remaining 24.69% (n=20) participants did not take any treatment for their pain. Among the participants who took treatment for their LBP, 55.60% (n= 45) participants took medication, 11.11% (n=9) participants took Physiotherapy, 8.64% (n=7) participants took traditional treatment for their LBP.

Treatment take or not	Type of treatment	Frequency (n)	Percentage (100)	**Total**
Yes	Medication	45	55.6	
	Physiotherapy	9	11.11	**75.35%**
	Traditional	7	8.64	
No		20	24.69	**24.69%**

Table-10: Treatment seeking behavior among the participants

CHAPTER-5:	DISCUSSION

The aim of the study was to identify the prevalence of low back pain among the people age over 40 in a selected village. The researcher took 115 samples and tries to find out the prevalence of low back pain among the people whose age over 40. In this study the prevalence is 70.40%. In a survey among Iranian people, prevalence was 29.3% (Biglarian et al., 2012). One study in Canada estimated that 84% of adults have had low back pain during their life time (Cassidy, 1998). In UK average prevalence were 59% (Waxman, 2000), in Denmark 70% and in Finland 75 % (Harreby, 1996). The prevalence of low back pain in elderly Brazilians was 65.2% (Miranda et al., 2012).

The study demonstrates that the age of 40-50 years 40.74% participants mainly suffered by low back pain most. According to the study in Canada the prevalence of low back pain was higher for younger age groups which naturally correlates with those with less years of work experience reported higher prevalence of pain (Albert, W.J et al., 2008). In Britain the prevalence of low back pain is 62% among the age 30-60 (Walsh, 1992). Urquhart et al. (2009) mentioned that a community based survey with 506 women whose age ranges were 24-80 years reported that the frequency of LBP was more frequent in 50-59 years. Again according to a Thailand study the largest group being 41-50 years (Charoenchai et al., 2006). So it is the most vulnerable age group.

The study reveals that, low back pain prevalence among male 66.70% and 33.3% were female. Because of their occupation male are more vulnerable at village in Bangladesh. But Bisiachchi & Huber (2006) argued that the female reported back pain more often than the male. In female low back pain was more prevalent, while 37% of men reported low back pain in Nigeria (Omokhodion et al., 2000). Sex distribution of patients with LBP was male 66% and female 34% (Ullah et al., 2006). Biglarian et al. (2012) found that LBP was more prevalent among female (37.5%) rather than male (18.3%) in an Iranian population.

This study shows that 33.30% people suffer from low back pain whose occupation is agriculture and 27.20% was house wife. In China prevalence of LBP was 64% (Lope

et al., 2006). In developed countries, the 1-year prevalence rate of LBP among farmers was 47% in Sweden (Holmberg et al., 2002), 23% in Finland, and 37% in the US (Rosecrance et al., 2006). And in developing countries, the rate was much higher especially in South West Nigeria 72% and China 64%. According to a Chinese study published in 2002 the prevalence of LBP among the housewives was 52.3%. (Fabunmi et al., 2005)

In this study here tried to find the most stressful posture for developing low back pain. Here the most stressful posture was bending 39.51%, sitting 29.63%, squatting 17.28%. Omokhodian (2000) showed in his study that the most painful posture is bending 20% and prolonged sitting 25%. Heavy physical work and bending posture is mainly responsible for low back pain (Xu, 1997).

The study shows 17.39% participants have no formal schooling, 6.09% participants had less then primary school, 25.22% participants completed primary education, 33.91% participants had completed SSC, 5.22% participants completed HSC, 7.83% participants had Graduate completed, and 4.35% participants had Masters completed. Siddiqui et al. (2012) found their study that eight (26.7%) subjects never attended school, four (13.3%) had only primary educations, 18 (60%) had more than primary level education. A study in Iran showed that among the participant 33.9% completed their basic educational level, 20.2% completed moderate educational level and 15% completed their higher education, where most affected group completed their basic educational level (Biglarian et al., 2012). Individuals who had some postsecondary education in general had less chronic LBP (Alkherayf & Agbi., 2009). So lower educational level, people are more vulnerable for developing low back pain.

The study reveals that among the affected participants, thin 9.90%, medium 60.5%, overweight 22.2%, and obese 7.4%. In large rural Australian Aboriginal area observed that most of the patients of LBP were obese 45% and 26% were overweight and also found that females and individuals with greater than normal BMI displayed higher percentages of LBP lifetime prevalence (Vindigni et al., 2005). Salvetti et al. (2012) mentioned that among 177 CLBP patients found that 63.3% participants were overweight or obese and 36.7% participants were underweight or normal.

| CHAPTER-6: | CONCLUSION & RECOMMENDATIONS |

6.1 Conclusion

Low back pain is a very frequently occurring phenomenon in Bangladesh and all over the world.LBP has great impact causing severe long term physical disability and give rise to huge costs for the society. Literature showed that more than one-third of disability is caused due to low back problems. . The prevalence and consequences of low back pain is higher in village people which are 70.4% due to their poor posture and the poor ergonomically setting. Among these most of the people suffer from mild to moderate type of LBP. The highest prevalence was found in 40-50 years which is 40.74%. Occupation is the main factor for developing low back pain. Most of the people in our village are farmer and they do different type of bending, squatting and sitting type of work. Age is also a main factor for developing low back pain because after increasing age there may cause some degenerative change. This change cause low back pain. Among the affected group 75.35% take treatment, among those who were taken treatment for their LBP 55.6% took medication and only 10% took Physiotherapy. According to the participant view some socio-demographic characteristic- age, sex, prolong bending posture had a positive effect on the LBP among the people. Affected people face various types of problem in there working place and hamper productivity. In this study the researcher tried to found the factors which are harmful for them. So avoiding this factors people can concentrate their work which ultimately help to the society.

6.2 Recommendations

The recommendation evolves out of the context in which the study was conducted. The aim of the study was to find out the prevalence of LBP among the people age over 40 in a selected village in Nator. The main recommendations would be as follow:

- In this study here took only the people whose age over 40. In future if take below 40 years, the research may be more precious.
- In this study used only 115 participants as the sample, in future the sample size would be more.

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মৌখিক অনুমতি পত্র

(অংশগ্রহনকারীকে পড়ে শোনাতে হবে)

আসসালামু আলাইকুম/ নমস্কার, আমার নাম মায়িশা নুঝাত, আমি এই গবেষনাটি বাংলাদেশ হেলথ্ প্রফেশনস ইনস্টিটিউট (বি এইচ পি আই), ঢাকা বিশ্ববিদ্যালয়ের চিকিৎসা অনুষদের অধিনে করছি যা আমার ফিজিওথেরাপী স্নাতক কোর্সের আংশিক অধিভূক্ত। যার শিরোনাম হল- ”নাটোরের একটি নির্দিষ্ট গ্রামে চল্লিশোর্ধ ব্যক্তিদের কোমর ব্যাথার ব্যাপকতা”। আমি এক্ষেত্রে কিছু ব্যক্তিগত এবং আপনার সমস্যা সম্পর্কে আনুষঙ্গিক কিছু তথ্য জানতে চাচ্ছি যা আনুমানিক ২০-৩০ মিনিট সময় নিবে। আমি এই তথ্য সংগ্রহের জন্য শুধুমাত্র একবারই আপনার সাথে মিলিত হব।

এই গবেষণার লক্ষ চল্লিশোর্ধ ব্যক্তিদের কোমর ব্যাথার ব্যাপকতা সম্পর্কে জানা। এই গবেষণা থেকে আমরা কিছু গুরুত্বপূর্ণ তথ্য জানতে পারব যেমন প্রতি একশ জনের মাঝে কত জনের কোমর ব্যাথা আছে সাথে কোমর ব্যাথার কিছু কারণ ও জানতে পারব।

আমি আপনাকে অবগত করছি যে, এটা আমার অধ্যয়নের সাথে সম্পর্কযুক্ত এবং এই তথ্যগুলো অন্যকোন উদ্দেশ্যে ব্যবহৃত হবেনা। আমি আপনাকে আরও নিশ্চয়তা প্রদান করছি যে আপনার এবং আপনার দেওয়া সকল তথ্যের গোপনীয়তা বজায় থাকবে।

এই অধ্যয়নে আপনার অংশগ্রহণ স্বেচ্ছাপ্রণোদিত এবং আপনি যে কোন সময় এই অধ্যয়ন থেকে কোন নেতিবাচক ফলাফল ছাড়াই নিজেকে প্রত্যাহার করতে পারবেন। এছাড়াও আপনি যদি চান তবে এই সাক্ষাৎকারের যে কোন প্রশ্নের উত্তর নাও দিতে পারেন যেটা আপনার পছন্দ না।

এই সাক্ষাৎকার শুরু করার আগে আপনার কি কোন প্রশ্ন আছে?

আমি আপনার অনুমতি নিয়ে এই সাক্ষাৎকার শুরু করতে যাচ্ছি?

হ্যাঁ ☐   না ☐

সাক্ষাৎকার প্রদানকারীর স্বাক্ষর :.....................

সাক্ষাৎকার গ্রহনকারীর স্বাক্ষর: ....

Assalamualaikum/Namasker, my name is Mayesa Nujhat, I am conducting a study for partial fulfillment of Bachelor of Science in Physiotherapy degree, titled on "Prevalence of low back pain among the people age over 40 at a selected village in Nator" from Bangladesh Health Professions Institute (BHPI) under medicine faculty of University of Dhaka. I would like to know your some personal and other related information about your problem. This will take approximately 20-30 minutes. I need to meet you just once to collect entire information.

The aim of the study is to determine the prevalence of low back pain among the people whose age over 40. The study will provide us important information on how many people are suffering from low back pain per one hundred people, subsequently possible causes of low back pain with also be emerged.

I would like to inform you that this is a purely academic study and obtain information will not be used for any other purpose. All information provided by you will be kept confidential and also the source of information will remain anonymous.

Your participation in this study is voluntary and you may withdraw yourself at any time during this study without any negative consequences. You also have the right not to answer a particular question that you don't like or do not want to answer during interview.

Do you have any questions before I start?

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

YES ☐   NO ☐

Signature of the participant ………………………………….
Signature of the researcher ………………………………….

Prevalence of low back pain among the people age over 40 at a selected village in Nator.

Questionnaire

Interview Schedule		
Part- I: Personal details		
1.1	**Name :-**	**Date of Interview:**
1.2	**Address:** Village/house no………. PO…………. PS……….. District…………..	**Contact no:**
	Part- II: Socio-demographic Information	
2.1	**Age**	1 = (In year): …………. Yrs
2.2	**Gender**	1 = Female 2 = Male
2.3	**Body weight**	……………………………KG
2.4	**Height**	…………………………….cm
2.5	**BMI**	……………………………
2.6	**Body type**	1=Thin 2= Medium 3= Over weight 4=Obese

2.7	**Marital status :**	1 =Married
		2 =Unmarried
		3 =Divorced
		4 =Separate
		5 =Widow
		6=Widower
2.8	**Educational level?**	1 =No formal Schooling
		2 =Less then primary School
		3 =Primary Completed
		4 =SSC Completed
		5 =HSC Completed
		6 = Graduate Completed
		7 =Masters Completed
		8 = Others Completed
2.9	**Occupation?**	1=Rickshaw puller ………………….
		2 =Farmer ……………………
		3 =Factory/garments worker ………
		4 =Driver...…………………………..
		5 =Businessman...……………………
		6 =Day laborer………………………
		7 =Unemployed ……………………
		8 =Housewife ………………………
		9 =Teacher …………………………
		10 =Employed………………….…
		11=Other (Specify):……………….
2.10	**What is the average monthly income of your household?**	_____ (*Taka*)
	Part-III: Physiotherapy related Information **(To be collected from Record/ Care provider/Clinical examination)**	
QN	Questions	Responses/Answers
3.1	**Have you any low back pain?**	1 = Yes

		2 = No
3.2	**How severe is your pain on VAS Scale?**	
		1 = 1(No pain)
		2 = 5(Medium Pain)
		3 = 10(Severe Pain)
3.3	**What is the behavior of pain?**	1=Occasional
		2=Intermittent
		3=Constant
		4= Not applicable
3.4	**From how many days do you suffer such type of pain?**	1= <6 months
		2= >6 month but <1 year
		3=>1 year
		4= Not applicable
3.5	**When do you notice the pain?**	1=During work
		2= After work
		3=During rest
		4= Not applicable
3.6	**Duration of back pain**	1 =<1h
		2 =1h
		3 =>1h
		4= Not applicable
3.7	**When your pain increase?**	1=Day
		2=Night
		3= Not applicable
3.8	**Is the pain radiate to leg?**	1=Yes
		2=No
		3= Not applicable
3.9	**Have you menopause?** **(in female)**	1 = Yes
		2 = No
		3= Not applicable
3.10	**Postmenopausal length**	1= ……….year

		2= Not applicable
3.11	**Have your LBP started after menopause?**	1=Yes 2= No 3= Not applicable
3.12	**Do you sweep in bending position?**	1=Yes 2=No
3.13	**Have you lifting heavy object during work time?**	1=Yes………………………… 2=No…………………………..
3.14	**Do you lift any heavy weight in your ADL?**	1=Yes 2= No
3.15	**Do you feel any pain during heavy weight lifting?**	1= Never 2= Sometime 3= Often 4= All time
3.16	**Which posture do you work most of the time?**	1= Sitting………………………….. 2= Bending………………………… 3= Squatting……………………… 4= Standing………………………… 5= Walking…………………………
3.17	**In which posture you feel the pain most?**	1= Sitting 2= Bending 3= Squatting 4= Standing 5= Walking 6 = Lying 7= Not applicable
3.18	**Do you farming in squatting position?**	1=Yes 2=No
3.19	**Then how many times?**	1=<1 h 2=1-3 h 3=3-5 h

		4=5-7 h
		5=>7h
		6= Not applicable
3.20	**How many time you sitting in a chair?**	1=<1 h
		2=1-3 h
		3=3-5 h
		4=5-7 h
		5=>7h
3.21	**Which posture do you prefer during sleeping?**	1= Supine lying……………………
		2= Prone lying……………………
		3=Side lying………………………
3.22	**Which type of mattress you use during sleeping?**	1= Firm / Normal mattress…………
		2= Soft / Cushioned mattress………
		3= Wooden / Hard bed…………….
3.23	**Do you have Diabetes?**	1= Yes
		2= No
3.24	**Previous surgery**	1=Yes
		2= No
3.25	**Then which type of surgery?**	1= Spine surgery
		2= Cesarean section
		3= Other……………………………..
		4= Not applicable
3.26	**Smoking**	1=Never Smoked
		2=Ex-Smoker
		3=Current Smoking /1-14 cigarettes/day
		4=15-24 cigarettes/ day or more cigarettes/day
3.27	**Alcohol or any drug intake**	1= Yes
		2= No
3.28	**Have you got any trauma on your back?**	1= Yes
		2= No

3.29	If yes then which type of trauma you get?	1= Fall down 2= RTA 3= Other…………………………… 4= Not applicable.
3.30	Have you ever taken any treatment?	1 = Yes 2 = No
3.31	What kind of treatment did you receive?	1 = Physiotherapy 2 = Medication 3= Traditional 4 = Others 5= Not applicable

Permission letter

The Member,   30th March, 2013
Ward no-1
10 nos. Chougram union porishod,
Shingra, Nator.

**Subject: Application to seek permission to collect data to conduct a research
study.**

Sir,

I respectfully state that I am Mayesa Nujhat student of 4th year B.Sc. in Physiotherapy
in Bangladesh Health Professions Institute (BHPI). In fourth year course curriculum,
we have to do a research project. I have chosen a research title on "Prevalence of low
back pain among the people age over 40 at a selected village". My supervisor is
Nasirul Islam, Assistant Professor & Course Co-ordinator of M.Sc in Physiotherapy
program, BHPI, CRP, Savar, Dhaka -1343. I will need to collect data from the people
of your village (Hulhulia) whose age over 40. I am expecting your kind permission to
collect data. The research will provide us important information on how many people
are suffering from low back pain per one hundred people in your village, subsequently
possible causes of low back pain will also be emerged. For this reason, I need to
obtain your kind permission to collect data.

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

Yours faithfully

Mayesa Nujhat

Mayesa Nujhat
4th year B.Sc. in Physiotherapy
Session: 2007-2008
BHPI, CRP, Savar, Dhaka-1343

সেখ সরওয়ার-ই-আজম
১নং ওয়ার্ড সদস্য
১০নং চৌগ্রাম ইউনিয়ন পরিষদ
সিংড়া, নাটোর।

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