

## PREVALENCE OF LOW BACK PAIN AMONG THE TEA GARDEN LABORERS

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### ABSTRACT

Background: LBP is a multi-factorial disorder which involves most active individuals of the society and leads to many social and economic problems. Objectives: To find out the number of tea garden laborer affected by LBP per hundred laborer to measure the severity of pain by using VAS scale, to identify the distribution of pain, to know the duration of pain, to identify the behavior of pain, to explore the socio-demography of the affected group, to determine the most common factors that are responsible for developing LBP among the tea garden laborer, to identify the available treatment received by the LBP affected tea garden laborer. Methodology: This is a 'cross-sectional' study. A Total 70 samples were selected conveniently for this study from the two selected area of Moulvibazar tea garden. Data were collected by using pretested mixed type of questionnaire. Descriptive statistic were used for data analysis which is focused through table, pie chart and bar chart. Results: This study shows that among all of the (70) participants 97.1% (n=68) participants had been suffered from LBP and 2.9% (n=2) had no LBP. Among the affected participants who were suffering from LBP, the severity of pain in VAS scale were moderate pain were in 84.3% (n=59) laborer, severe pain were 15.7% (n=11) laborer. Conclusion: The prevalence of LBP among the tea garden laborer and the possible risk factors for the LBP is vary among tea garden laborer and it's sometimes depend on how long they work and sustained their poor posture.

**Keyword:** Prevalence, Low back pain, Tea garden labor.....

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## Background

Low back pain (LBP) is one of the most common symptoms experienced by people throughout the world [1] and according to WHO (2003) LBP is responsible for a major portion of people staying away from work or visiting a medical practitioner. It is estimated that 70 to 80% least one episode of back pain in their lifetime. This condition may cause a decrease in the quality of life of individuals, as well as deterioration in physical activity. Generally, incidents of back pain most commonly occur in between ages 25 and 50 years [1]. LBP has been referred as a 20th century disaster [2] and now a days it become a universal problem. In the United States disabling low back pain episodes increased 26% from 1974 to 1978, while the population increased only 7% [3]. LBP is also very costly: in the U.S. total incremental direct health care costs attributable to low back pain were estimated at \$26.3 billion in 1998 [4]. It is also considered the second leading cause of office visits to primary care physicians in USA [5]. LBP is a multi-factorial disorder which involves most active individuals of the society and leads to many social and economic problems. Many risk factors effect incidence and durability of LBP, some of which can be changeable and reversible [6]. LBP is the most prevalent musculoskeletal condition and one of the most common causes of disability in the developed nations. In developed countries such as the United States of America (USA) and Australia, LBP prevalence ranges from 26.4% to 79.2%. The lifetime prevalence of LBP in developed countries is reported to be up

to 85%. LBP incurs billions of dollars in medical expenditures each year [7]. Cassidy et al. reported that the prevalence of LBP among adult Canadians was 28.4% and 84.1% of Saskatchewan adults had experienced LBP at some point during their lifetime. In 1994, the estimated cost of back and spine disorders in Canada was \$8.1 billion in Canadian dollars [8]. In the Netherlands, 15% of the total working-age population currently claims disability insurance for their LBP. Each year, low back pain accounts for 13% of all new cases. Nonetheless, there are indications that physical activities, i.e. manual material handling, bending, twisting (heavy load) and whole-body vibration, are possibly risk factors for acute LBP. Quantification of mechanical load, posture and spinal load applied could be useful to identify the physical risk factors [9]. LBP is also categorized by the duration of symptoms as: Acute LBP (0–6 weeks); Sub acute LBP (7–12 weeks); Chronic LBP (>12 weeks) [10] Recurrent LBP: Acute LBP in a patient who has had previous episodes of LBP from a similar location, with asymptomatic intervening intervals [11]. According to identifiable causes the LBP can be divided as: (a) Non-specific LBP (majority about 90%): it means that there is no specific cause to develop the LBP. (b) Specific LBP: it means that there are some causes to develop the LBP, the main causes include: Fracture, infection, cauda equine syndrome, tumours (serious pathologies), Spinal stenosis, spondylolisthesis, spondylolysis, disc prolapse, inflammatory disorders [12]. Reports from industrialized countries have indicated prevalence rates among the general population ranging from 21% in

Hong Kong and 39% in Bradford, UK to 69% in Denmark. Reports from less industrialized countries are few but it is generally believed that the prevalence is much lower than the industrialized countries [13]. Mechanical causes (80-90%): Pain from mechanical causes is typically aggravated with motion and relieved with rest. The mechanical causes of LBP are given below Lumber strain (65-70%): A lumbar strain is a stretch injury to the ligaments, tendons, and or muscles of the lower back. The stretching incident results in microscopic tears of varying degrees in these tissues. Lumbar strain is considered one of the most common causes of LBP. The injury can occur because of over use, improper use or trauma [14]. Spondylolisthesis: Spondylolisthesis means forward displacement of one or more lumbar vertebrae. Spondylitic spondylolisthesis is the most common type and occurs because of a defect in the pars interarticularis, this type of spondylolisthesis is more common in patients who repeatedly lift heavy objects, thereby placing strain on this connection. Patients typically report LBP that is worse with activity and spine extension but is relieved by flexion. Fracture: Spinal compression fractures often occur in patients older than 70 years who have a history of osteoporosis. Patients with a history of long-term corticosteroid use are also at risk [15]. The mechanical causes of LBP also include degenerative disc or joint disease, congenital deformity (such as scoliosis, kyphosis, and transitional vertebrae) and instability [14]. Neurogenic (5-15%): Disk herniation: Intervertebral disc herniation usually occurs with a sudden physical event, such as lifting a heavy object or

sneezing. The disc herniation causes nerve impingement and inflammation resulting in radicular pain [16]. Disk herniation occurs most commonly between the fourth and fifth lumbar vertebrae and between the fifth lumbar and first sacral vertebrae. Patients with disk herniation have pain with forward flexion, whereas patients with spinal stenosis have pain with extension [15]. Spinal Stenosis: Spinal stenosis refers to narrowing of the spinal canal. There are a variety of causes. The most common cause is a combination of degenerative spine disease (osteoarthritis of the spine) and bulging or herniated discs. Some studies suggest that spinal stenosis accounts for approximately 3% of LBP [17, 18]. This condition should be suspected in patients with LBP that is aggravated by walking and with hyperextension of the back and that is relieved by rest or flexion of the back because the volume of the spinal canal increases with back flexion and decreases with extension [15].

## Methodology

### Study design

The aim of this study was qualitative study to find out the prevalence of LBP among the tea garden laborer. For this reason, the investigator choose a cross sectional study because the cross sectional study is the best way to determine prevalence. The cross sectional study is stated by Park [19] "prevalence and this can also be used to identify the associations. The most important advantage of cross sectional study is it need not more time and also cheap. As there is no follow up, fewer resources are required to run the study [20]. 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.

### Study sites and Study area

As this was a survey on prevalence of LBP among the tea garden laborer, so the study was conducted in two selected area of Srimongal Moulovibazar. This study was conducted in musculoskeletal area.

### Study population

A population refers to the members of a clearly defined set or class of people, objects or events that are the focus of the investigation. So all of tea laborer of Bangladesh who fulfill the inclusion and exclusion criteria of this study are the population of this study. But it was not possible to study the total population within the time of this study, so the investigator took only 70 tea laborer as sample who were selected conveniently from selected area of Moulvibazar according to the inclusion and exclusion criteria. The investigator use the convenience sampling technique due to the time limitation and also for the small size of population and as it is the one of the easiest, cheapest and quicker method of sample selection.

### Inclusion and Exclusion criteria

Tea laborer of all age group will be selected- to explore the relationship between age and prevalence of LBP among the tea laborer, so samples were selected from all age group. Subject who were willing to participate in the study- Otherwise they will not give exact information that will helpful to the study. History of acute trauma to back which

can produce pain as an acute inflammatory reaction. Any history of known active infection e.g. TB spine

### Data collection method and tools

In this study data were collected by using both structured and semi structured mixed type questionnaire. Mixed type questionnaire include only close ended questions. Firstly, the investigator introduced themself and describe the project study as well its purpose. The investigator also provided consent form to the participant and explained that to build a trustful relationship. After obtaining consent by sign investigator asked pre-determine question to the participant. The investigator gave time to understand the questions fully so that they could be answered accurately. The Interview was conducted in Bengali so that participants could understand easily. During the interview, the investigator wrote down field notes and observed the facial expression to collect accurate data from the participants because in grounded theory of qualitative research observation and interviewing both were commonly used for data collection [21]. During the interview investigator use pen, paper, written questionnaire, file, visual analog scale (VAS scale).

### Data analysis

Data was numerically coded using an SPSS version 17 software program. Descriptive statistic was used for data analysis which focused through table, bar chart.

### Ethical consideration

It should be ensured by the investigator that it would maintain the ethical issue at

all aspects of the study. Because it is the crucial part of the all form of research. At first to conduct the study, the ethical committee checked the proposal and granted the proposal then the investigator started the study. Permission was also taken from all the participants in the form of written consent during data collection. During the course of the study, investigator gave the consent form to the interested participant. They were

informed that their participation was fully voluntary and they had the right to withdraw or discontinue from this study at any time without any hesitation or risk. Participants were also informed that confidentiality would be maintained and client codes were used to keep clients identity invisible. They were assured that taking part in this study would not cause any harm to them but the result of the study would be beneficial for them.



## Result

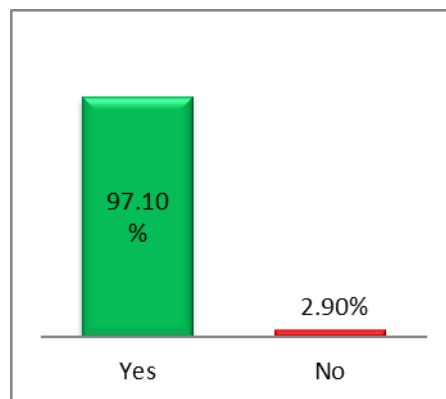


Figure 1: Prevalence of LBP among tea garden laborer

Figure 1 represents among all of the (70) participants 97.1% (n=68) participants had been suffered from LBP and 2.9% (n=2) participants had not been suffered from LBP.

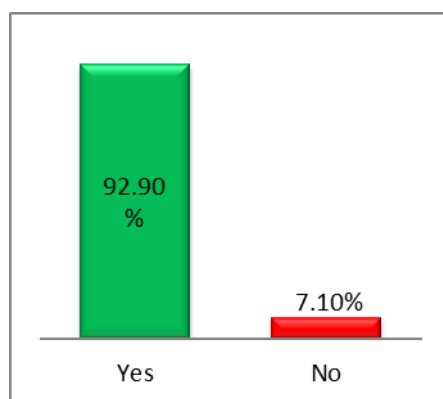


Figure 2: Workplace absenteeism of Tea Garden Laborer due to LBP.

Figure 2 represents among the affected participants who were absence in work due to pain. 92.9% (n=65) laborer and 7.1% (n=5) laborer were absence in workplace due to pain.

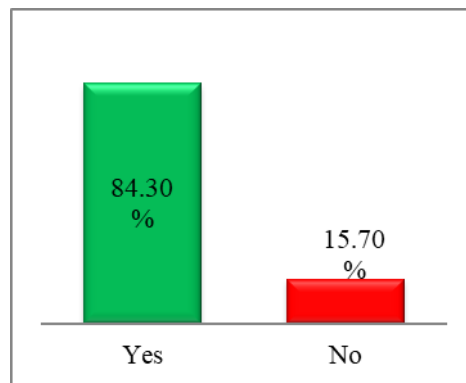


Figure 3: Information about the severity of pain of the affected group

Figure 3 represents among the affected participants who were suffering from LBP, the severity of pain in VAS scale was in between 0-5 (moderate pain) in 84.3% (n=59) laborer, in between 6 10 (severe pain) in 15.7% (n=11) laborer.



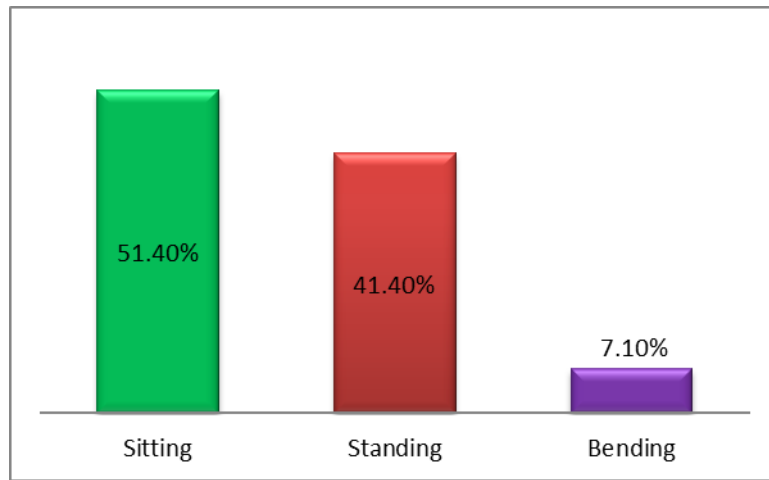


Figure 4: During work most preferred posture by Tea laborer

Figure 4 represents among the affected participants who were suffering from LBP, 51.4% (n=36) participant work in sitting body posture, 41.4% (n=29) participant work in sitting body posture and 7.1%% (n=5) participant work in sitting body posture.

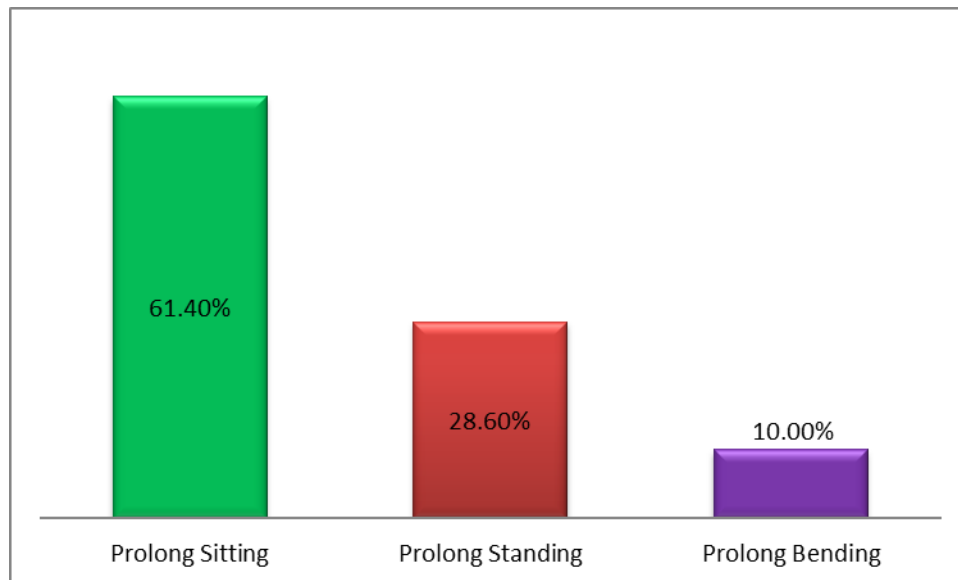


Figure 5: Responsible risk factor for long time postural position

Figure 5 Shows that among the affected participants who were suffering from LBP, 61.4% (n=43) participant suffering in pain in prolong sitting posture, 28.6% (n=20) participant suffering in pain in prolong sitting posture and 10.0% (n=7) participant suffering in pain in prolong sitting posture.

## Discussion

The investigator used a cross sectional study to find out the prevalence of LBP among the housewives. The result of this study showed that 97.9% tea garden laborer suffered from LBP in Moulvibazar during the course of the study the prevalence of back pain was reported to be 64% among the tea pickers. Of these, 29 % had a history of back pain before they started picking tea and found out that 35% of the workers developed back pain due to occupational exposure to tea picking [22]. A point prevalence of

45.4% among tea pickers respectively while LBP was prevalent in the age bracket of 42 years and above among tea pickers. That was nearly similar to the result of this study. In this study it was found that among the sufferer group most of the laborer were absence in their work due to LBP (Percentage is 92.9%). According to Australian and Malaysian study the huge number of worker did not attained in work due to their pain. This study was highly similar to other study report. In this study it was found that among the sufferer group of people had moderate pain which was 84% and 15% was severe. As I could not found any literature about pain of tea laborer so this study was not nearly similar to the result of this study. It was also found that the LBP among the people was more common in 31-50 years. According to Urquhart et al., [23] (a community based survey with 506 people whose age range were 24-80 years) report that the frequency of LBP was more frequent in 50-59 years. According to the perspective of our country degenerative change shows

earlier, especially among the tea laborer due to sitting posture as well as standing causes, so the investigator could said that the literature support the result of this study.

According to this study, investigator showed that regular prolonged work in sitting and standing position influenced the development of LBP. Most of the literature also showed that the heavy weight lifting in prolonged sitting and standing position is one of the risk factors of LBP [24, 25]. Among the participant who felt LBP most of them were worked followed by sitting (61%) and standing (28%) during working or most of the time. A Population-Based Case-control Study in Hong Kong reported that an association between continuous sitting posture and LBP was controversial, with some studies revealed an association, whilst others did not. Moreover, an association between "prolonged walking at last two hours standing" at work and LBP [26]. A cross-sectional study among health care providers working at one hospital with 931 health care providers reported that prolonged standing position and leaning forward are frequently associated with LBP [27]. That was nearly similar to the result of this study.

## Conclusion

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 the non-working group in comparison

with the working population, most of these non-working women were housewives. More than a quarter of the total burden of low back problems is found in the non-working population, among this 50% is women. In the work place, the tea garden laborer are vulnerable to LBP during the course of their daily work due to the poor ergonomically setting. From this study, it was found that the more than half of the tea garden laborer (58.6%) suffers from LBP in our country. Among these most of the tea garden laborer suffer from mild to moderate type of LBP rather than the severe LBP. 42.9% suffered from central and 18.6% suffered from radiating pain and most of the participants were suffering from LBP for more than 1 year (40%) of duration. Among the affected group 63.4% take treatment, among those who were taken treatment for their LBP but only 10% took PT. The investigator has tried to show the prevalence and characteristic of LBP among the tea garden laborer and the possible risk factors for the LBP according to participants view. According to the participant view some socio-demographic characteristic (age, living area and marital status and malnutrition), number of child, prolong bending posture, tobacco use as well as duration of tobacco use and the pregnancy had a positive effect on the LBP among the tea garden laborer.

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### Conflict of Interest

Authors declares no conflict of interest.

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