

## Women's Low Back Pain Assessment and Evaluation of Associated Factors

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## Abstract

## Original Research Article

**Background:** Now a day low back pain (LBP) is a common phenomenon in adult women. Pain in the soft tissues of the lower back area is extremely common among adults and frequently affects individuals in their working years. Although low back pain is suggested to be linked to hormonal and reproductive factors in women, results from various studies are inconclusive. **Objective:** The objective of this retrospective study was to evaluate the associated factors of low back pain in women. **Materials and Methods:** This retrospective study was conducted in a Tertiary Care Hospital, Dhaka, Bangladesh, during the period from January 2019 to December 2019. Data were collected by a pre-designed questionnaire and analyzed by computer program, SPSS version 20. Total 138 patients with low back pain were selected as study population. **Results:** Among the total 138 study people, the highest number of patients with low back pain was found in 30 to 40 years' age group. This number was 41 and it was 30% of the total study population. In total 79 patients were with overweight (BMI $\geq$ 25.0) which was 57.25% of the total population. 57(41.30%) patients had Disc Prolapse and that was the highest ratio according to diagnosis reports. **Conclusion:** Low back pain (LBP) is one of the leading causes of disability women. It occurs in similar proportions in all cultures, interferes with quality of life and work performance and is the most common reason for medical consultations. More studies regarding LBP are necessary to get the clear concepts about this issue.

**Keywords:** Low back pain (LBP), lumbar spondylosis, disc prolapse, factors.

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## INTRODUCTION

Now a day low back pain (LBP) is a common phenomenon in adult women. Pain in the soft tissues of the lower back area is extremely common among adults and frequently affects individuals in their working years. Although low back pain is suggested to be linked to hormonal and reproductive factors in women, results from various studies are inconclusive. Low back pain is one of the most common health problems among all the population in the world. Low back pain experienced most of the people at some point of their lives [1]. Although most of the people recover from the pain quickly, the disability which is the result of such pain most often leads to a limited range of activity among the adults, which is only next to arthritis [2]. It may be caused by gynecologic, vascular, neurologic, psychogenic, spondylogenic or discogenic pathology. But mostly the cause remains unidentifiable and is encompassed under the umbrella term—mechanical or postural back pain [3]. Low back Pain (LBP) more often affects women than men and this leads to

assumption that its cause lies in female reproductive system. The sex difference in incidence is mainly explained by the fact that the female muscular and ligamentary supports are not as strong as of males. Further, during pregnancy and labor the mobility of the pelvic girdle exposes the muscles and ligaments to undue strains which after delivery involute sub-optimally. A higher number of live births are suggested to be associated with LBA [4, 5]. Postpartum, women is exposed to additional physical work, including prolonged bending during household work or lifting the baby. She is subjected to considerable nervous and emotional stresses of motherhood and has inadequate rest and sleep during that period. Minor repeated trauma is commonly accounted for by obesity, bending and lifting, poor posture, pendulous abdomen, flat feet, badly designed shoes with high heels and long hours at work or an office desk. These conditions are characterized by spasm of muscles and it is suggested that spasm may be the cause rather than the effect. Any LBA caused by gynecological lesion is diffuse, situated in midline and importantly associated with anterior

pelvic pain. Any backache which can be pointed with a finger, or associated with local tenderness, is usually not due to intra-pelvic lesion [6]. The prevalence of LBP peaks around the end of the sixth decade of life. A small cases of back pain are due to specific causes; most of the cases are non-specific. Most common presentation is acute back pain and is usually self-limiting, less than three months durable regardless of treatment. Chronic back pain is a more difficult problem, which often has strong psychological overlay: work dissatisfaction, boredom and a generous compensation system contribute to it. It is generally assumed that overweight and low back pain are related [7]. However, scientific evidence to support this relationship is not fully conclusive [8, 9]. Some studies have reported that patients who have excessive abdominal fat over a long period may be at risk of LBP [10]. Although pregnancy is not the main concern in our study but there may some correlation between pregnancy and LBP. In a study in Sweden 1991, 429 pregnant women with a history of low back pain and 375 pregnant women who had no history of low back pain were seen on regular bases from the beginning of the 12th week until the childbirth. Lower back pain was found to be twice as high in women with a history of low back pain. Younger pregnant women had higher incident of low back pain in the 1st trimester but improved by the end of pregnancy [11]. In another study in Sweden in 1991 on 855 pregnant women from the beginning of the twelfth week until childbirth showed that 49% of lower back pain patients had it in the ninth month. They claimed, 27% of the patients had it in the sixth month and in the third month 22% of the patients were found with lower back pain. More likely to have low back pain are younger pregnant women, those multiple pregnancies and those with several physical and psychological work [12]. In a cohort study which was conducted in Sweden in 1996 on 200 pregnant women showed that the incidence of low back pain was 76% reported LBP, the rate to 48% until the twenty fourth weeks and after birth incidence of pain decreased to 9.4% [13]. In our study we had some emphasis on age and BMI for finding any association with low back pain.

## OBJECTIVE

The general objective of this study to evaluate the associated factors of low back pain in women.

## MATERIALS AND METHODS

The objective of this study was to evaluate the associated factors of low back pain in women. This retrospective study was conducted in a Tertiary Care Hospital, Dhaka, Bangladesh, during the period from January 2019 to December 2019. According to the inclusion criteria, only the female patients with low back pain suffered from at least six months were included as study population. The age limit was fixed as

21 to 60 years for the participants of this study. On the other hand, female patients but low back pains after an assault or sudden injury were excluded as per exclusion criteria of this study. Total 138 patients with low back pain were selected as study population. Permission was taken from the hospital authority to conduct the study and stringent confidentiality of data was maintained at all levels of the project. Data of all patients having history of low back pain for last six months or more and not relieved by primary treatment of pain killers and muscle relaxant were analyzed. Completeness of data was assessed. Basic information like name, age, gender, height, weight, diagnosis & duration of low back pain were recorded. Data were analyzed by MS Excel and SPSS version 20. Frequency and percentage were calculated for all variables and all findings disseminated by several tables and charts of MS Office program.

## RESULTS

Among total participants 138, the highest number of patients was from 30 to 40 years' age group and it was 41 in number which was 30% of the total population. Then 39 patients from 41-50 years' age group which was 28%, 30 patients from 51-60 years' age group which was 22% and lastly 28 patients from 21-30 years' age group which was 20%. According to the BMI scores the highest number of patients with overweight (BMI  $\geq 25.00$ ). The number of patients with overweight was 79 and it was 57.25% of the total study population. The second highest number was 44 from normal BMI score (18.50-24.99) and it was about one third (31.88%) of the total study population. In this study we found the lowest portion of patients from lowest BMI score group ( $\leq 18.50$ : Underweight) and it was 15 and 10.87% of total study population. According to the diagnosis reports of the participants the highest occurrence was found with disc prolapse: number-57, ratio-41.30%. Then it was followed by fractures 18(13.04%), lumbar spondylosis 19(13.77), spondylolisthesis 16(11.59%), lumbar spinal stenosis 12(8.70%), spinal tuberculosis 9(6.52%) and lastly nonspecific 7(5.07%).

In Table-1 shown that, lower back pain was higher in 31-40 age group 41(30%), followed by 41-50 age group 39(28%) and 51-60 age group 30(22%). Whereas the youngest group 21-30 years was comparatively lowest in number.

**Table-1: Distribution of participants age group (N=138)**

Patients Age group	n	%
21-30 years	28	20.0
31-40 years	41	30.0
41-50 years	39	28.0
51-60 years	30	22.0
Total	138	100.0

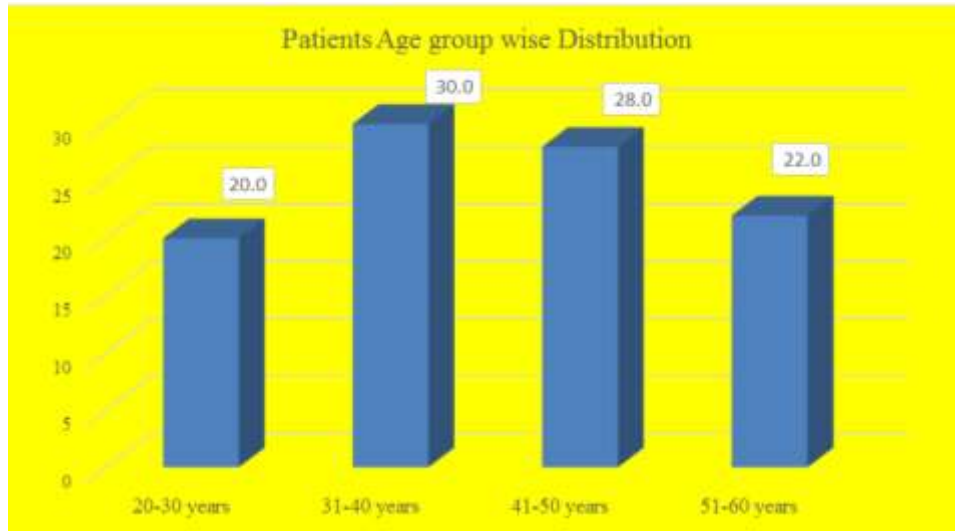


Fig-1: Age Distribution of the participants

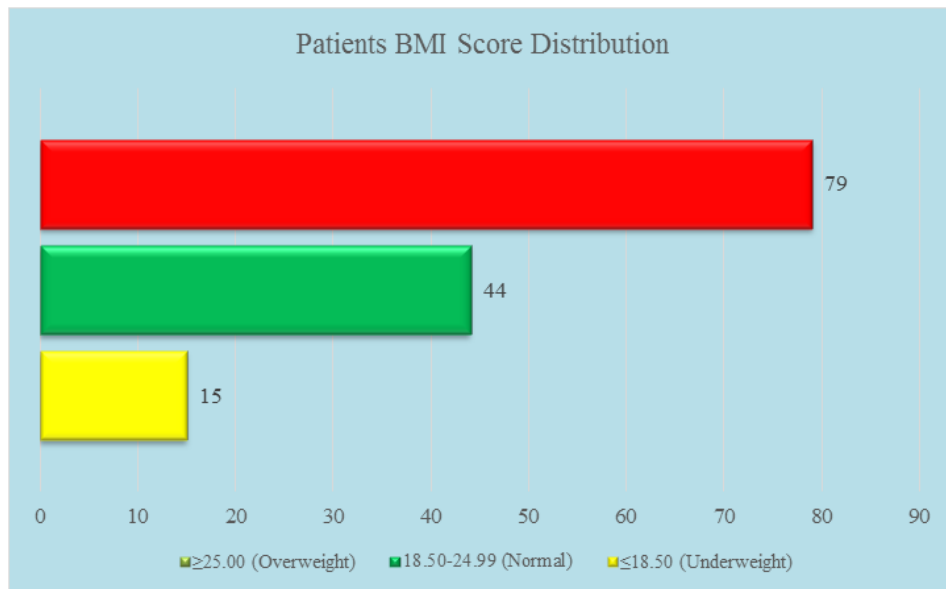


Fig-2: Distribution BMI scores of participants (n=138)

In Table-2 shown that, the associated factors of women back pain disc prolapse was significantly higher 57(41.3%) than others factors. Second highest was

lumbar spondylosis 19(13.77%) and the third highest factor was fractures 18(13.04%).

Table-2: Distribution of associated factors among participants (n=138)

Diagnosis	n	%
Disc prolapse	57	41.30
Fractures	18	13.04
Lumbar spondylosis	19	13.77
Spondylolisthesis	16	11.59
Lumbar spinal stenosis	12	8.70
Tuberculosis (Spine)	9	6.52
Nonspecific	7	5.08
Total	138	100.0

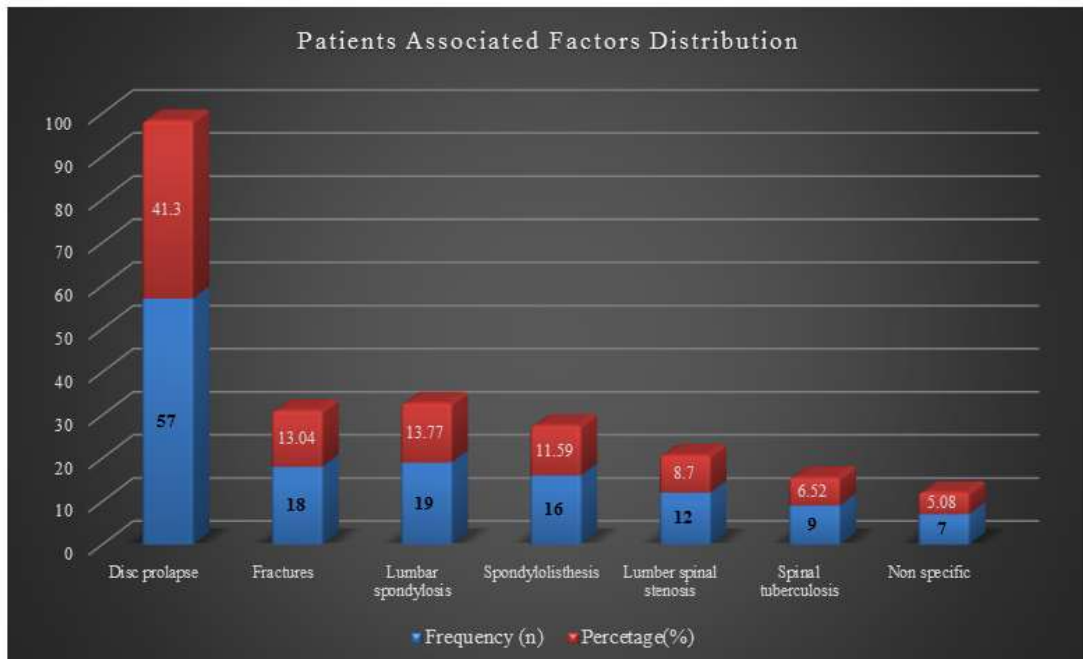


Fig-3: Participants Associated Factor Distribution

## DISCUSSION

According to our study low back pain was more common among women the 31 to 40 years' age group women. Many studies reported the association between age and LBP among Asian population [14] as well as the western population [15, 16]. Some studies reported that age  $\geq 35$  years was found to have 9 times more risk as compared to  $< 35$  years [17, 18]. In another study found that LBP at age 18 significantly increased the risk of LBP at age 30 [19]. It showed a prevalence of 30.8% in the age group (20-30years). Thus, many studies reported the occurrence of back pain at earlier stage of life. The association between gender and LBP had been reported by previous studies. Many studies show female preponderance in lower back pain [20]. According to BMI scores the highest number of patients with over weight (BMI  $\geq 25.00$ ). The number of patients with overweight was 113 and it was 57.65% of the total study population. The second highest number was 65 from normal BMI score (18.50-24.99) and it was about one third (33.16%) of the total study population. In this study we found the lowest portion of patients from lowest BMI score group ( $\leq 18.50$ : Underweight) and it was 9.18% (18) of total study population. This was an alarming signal for overweight women. There are several studies that conformed to the pattern that height is not correlated with the occurrence of low back pain in women, though in men many studies reported a positive correlation [21, 22]. This is in consistent with many studies. Overweight and increased waist-hip ratio serves both the predictor and risk factor for Lower back pain [23-25]. Increased lordosis in obese persons in order to maintain the center of gravity due to excess weight may be responsible for the complaint of low back pain [21]. Persons with a high percent body fat had high levels of disability. Some studies showed that association

between obesity and LBP has been reported to be stronger among women than among men [23]. It was observed in our study that maximum number of patients were having disc prolapse. It was followed by fractures, lumbar spondylosis and spondylolisthesis. Same trend was seen in both male and female. The point prevalence of LBP is 28.5% found in an Asian country [26]. The lifetime prevalence of low back pain is reported to be over 70%. But Globally, the annual prevalence of LBP has been estimated at 38%. In general, LBP resolves within weeks, but may recur in 24-50% of cases within 1 year. Thus, the identification of risk factors for LBP is important in the prevention of recurrent and possibly chronic LBP [7]. The prevalence of LBP in children is low (1%- 6%) but increases rapidly (18%- 50%) in the adolescent population [27].

## LIMITATIONS OF THE STUDY

Low back pain is a greater issue in the treatment arena. A large number of patients suffered from this disease in our country. Our study was a single centered study with a limited sample size. So the findings of this study may not reflect the exact scenario of the whole country.

## CONCLUSION & RECOMMENDATION

In our study we found of 31-40 age and over body weight are two major factors associated with low back pain (LBP) in women. Besides these, about one third female patients with LBP were associated with Disc Prolapse. These findings may be helpful for farther studies and in the treatment procedure of Low Back Pain but to get more clear concepts we would like to recommend for conducting more studies regarding LBP in several places across the world.



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