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Orthopaedics

Factors Associated with Low Back Pain in Women: Study in a Secondary Care Hospital, Brahmanbaria, Bangladesh

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| **Abstract** | | **Original Research Article** |

Introduction: World Health Organization (WHO) definition of Low Back Pain (LBP) is symptom of various cases involving the spine. 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 main objective of this retrospective study was to evaluate the risk factors associated with Low Back Pain (LBP) in women. ***Methodology:*** This is a retrospective study which was conducted in Sadar Hospital, Brahmanbaria during the period from January 2018 to December 2018. Data were collected by a pre-designed questioner and analyzed by computer program, SPSS Version 20. Incomplete data-sheets were rejected before analysis and finally total study population was fixed to 196 with Low Back Pain. ***Result:*** Among the total 196 study subjects, the highest number of patients with Low Back Pain was found in 30 to 40 years' age group. This number was 59 and it was 30.10% of total study population. In total 113 participants were with overweight (BMI >= 25.00) which was 57.65% of the total participants. In total 67 (34.18%) participants had Disc Prolapse and that was the highest ratio according to dialysis reports. ***Conclusion:*** Low Back Pain is one of the leading causes of disability. 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, Lumbar Spondylosis, Disc Prolapse.

INTRODUCTION

Back Pain is a common presenting complaint and frequently affects individuals in their working years [1]. It is a major cause of sickness, disability and absence from work[2]. It may be caused be 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. Few cases of back pain are due to specific causes; most cases are non-specific. Acute back pain is the most common presentation and is usually self-limiting, lasting less than three months 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 is related [7]. However, scientific evidence to support this relationship is not fully conclusive [8, 9]. Some studies have reported that subjects who carry excessive abdominal fat mass over a long period may be at risk of low back pain, as a result of altered posture to counter balance the protruding fat mass [10]. Although pregnancy is not the main concern in our study but there may some correlation between pregnancy and LBP. In a Swedish study in 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, conducted 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 conducted in Sweden in 1996 on 200 pregnant women showed that the incidence of low back pain was 76% reported low back pain, 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

General Objective

To evaluate the risk factors associated with Low Back Pain (LBP) in women.

Specific objectives

To assess the diagnostic findings of women with Low Back Pain (LBP)

MATERIALS AND METHODS

This is a retrospective study which was conducted in Sadar Hospital, Brahmanbaria during the period from January 2018 to December 2018. The aim of this study was to evaluate the risk factors associated with Low Back Pain (LBP) in women. According to the inclusion criteria, only the female patients with Low Back Pain suffered from at least six months were included as study people. 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. Data were collected by a pre-designed questioner and analyzed by computer program, SPSS Version 20. Incomplete data-sheets were rejected before analysis and finally total study population was fixed to 196 with Low Back Pain. 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. Permission was taken from the hospital authority to conduct the study and stringent confidentiality of data was maintained at all levels of the project. Completeness of data was assessed. Basic information like name, age, gender, duration of pain, height, weight, diagnosis etc. details were taken. Patients not having this data were excluded from the records. Data were collected on MS Excel and analyzed by SPSS. Frequency and percentage were calculated for all variables. In total 208 patients were eligible to be included in the study. Out of these, 12 patients were not having complete information. So the data of those 12 patients were excluded from the master dataset. Thus, data of total 196 patients were finalized as total study population and analyzed for the study.

RESULT

In total 208 patients were eligible to be included in the study. Out of these, 12 patients were not having complete information. So the data of those 12 patients were excluded from the master dataset. Thus, data of total 196 patients were finalized as total study population and analyzed for the study. Among total 196 participants the highest number of patients was from 30 to 40 years' age group and it was 59 in number which was 30.10% of the total population. Then 55 patients from 41-50 years' age group which was 28.06, 43 patients from 51-60 years' age group which was 21.94% and lastly 39 patients from 21-30 years' age group which was 19.90%. According to BMI scores the highest number of patients with over weight (BMI ≥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 (≤18.50: Underweight) and it was 9.18% (18) of total study population. According to the diagnosis reports of the participants the highest occurrence was found with Disc Prolapse: Number-67, ratio-34.18%. Then it was followed by Fractures 35 (17.86%), Lumbar Spondylosis 25 (12.76), Spondylolisthesis 24 (12.24%), Lumbar Spinal Stenosis 18 (9.18%), Tuberculosis (Spine) 16 (8.16%) and lastly Nonspecific 11 (5.61%).
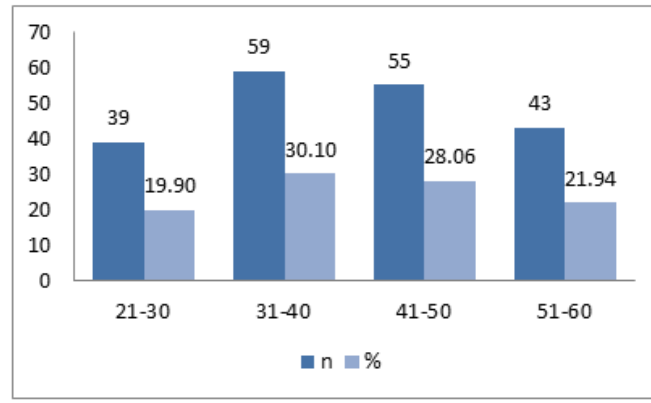
Fig-I: Age distribution of the participants (n=196)

Table-I: Distribution BMI scores of participants (n=196)

BMI	n	%
≤18.50 (Underweight)	18	9.18
18.50-24.99 (Normal)	65	33.16
≥25.00 (Overweight)	113	57.65
Total	196	100.00

Table-II: Distribution Diagnostic findings of participants (n=196)

Diagnosis	n	%
Disc Prolapse	67	34.18
Fractures	35	17.86
Lumbar Spondylosis	25	12.76
Spondylolisthesis	24	12.24
Lumbar Spinal Stenosis	18	9.18
Tuberculosis (Spine)	16	8.16
Nonspecific	11	5.61
Total	196	100.00

DISCUSSION

In our study records of total 196 patients affected with Low Back Pain was analyzed. Our study showed that 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 ≥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 shows female preponderance in lower back pain[20]. According to BMI scores the highest number of patients with over weight (BMI ≥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 (≤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 centre 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 was having Disc Prolapse. It was followed by Fractures, Lumber 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, 28].

LIMITATIONS OF THE STUDY

Low Back Pain is a greater issue in the treatment arena. A big number of patients suffered from this disease in our country. Our study was a single centered study with a small sized sample. 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 globe.

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