

PREVALENCE OF SPONDYLOLISTHESIS IN PATIENTS OF CHRONIC LOW BACK PAIN

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ABSTRACT

Objective: The objective of the study is to assess the prevalence of spondylolisthesis in patients with chronic low back pain (CLBP).**Methods:** This was a cross-sectional and observational study, conducted on patients of CLBP presented and evaluated with relevant radiological investigation in neurosurgery clinics in Rajasthan.**Results:** The mean age of the study population was 46.62 years with female dominance (73.85%). 63.96% had moderate work followed by severe work 28.98%. The prevalence of spondylolisthesis was 16.61% (47).**Conclusion:** The present study's prevalence of lumbar spondylolisthesis was more prone in middle-aged females.**Keywords:** Spondylolisthesis, Lumbar spine, Low back pain.© 2024 The Authors. Published by Innovare Academic Sciences Pvt Ltd. This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>) DOI: <http://dx.doi.org/10.22159/ajpcr.2024v17i4.51015>. Journal homepage: <https://innovareacademics.in/journals/index.php/ajpcr>

INTRODUCTION

The lumbar spine, sometimes known as the low back, is an intricately designed anatomical system. Nevertheless, this intricate configuration also renders the lumbar region vulnerable to harm and distress. In the Western world, back pain ranks as the second most prevalent symptom-related reason for doctor visits. Approximately 60–85% of individuals experience low back pain at some stage in their lives [1-3]. The symptoms typically resolve within a few weeks for the majority of persons [4]. Chronic low back pain (CLBP) is characterized by pain sensations that last for more than 3 months and impact approximately 15–45% of individuals [5].

The exact cause of CLBP in the majority of individuals is not well acknowledged. Lumbar spondylolisthesis is a major cause of back pain and disability, as well as other irregularities in the structure of the lumbar spine. Limited research has been conducted in this particular area, and there exists an opportunity to do studies in developing nations such as India, which exhibit distinct lifestyles. The objective of this study was to assess the prevalence of spondylolisthesis in patients with CLBP.

METHODS

This study employed a cross-sectional and observational design to investigate individuals with CLBP who were referred to neurosurgery clinics in Rajasthan for evaluation using radiological investigations. The study will commence upon the acquisition of authorization from the Institutional Review Board and the Ethical Committee of the Pacific Institute of Medical Sciences, Umarda, Udaipur. The study included all patients who reported CLBP to the neurosurgery clinic during the study period, taking into account the exclusion criteria. Sociodemographic data were collected through the completion of a predefined study pro forma, while patients underwent clinical and radiological evaluations conducted by health-care professionals.

Statistical analysis

The data were gathered and inputted into a Microsoft Excel spreadsheet in the format of a master chart. Subsequently, the data were subjected to

analysis using a widely used statistical software, specifically SPSS version 20. Significance testing for the mean±SD difference between two groups was done by Student t-test (unpaired t-test). Qualitative data were compared using the Chi-square test. $p < 0.05$ will be considered statistically significant.

RESULTS

The maximum number of patients 88 (31.10%) belong to the age group of 46–55 years followed by 36–45 years 75 (26.50%). The mean age of the study population was 46.62 years with female dominance (73.85%). 54.42% were from urban areas (Table 1).

A maximum of 63.25% were housewives followed by farmer 23.32% whereas a minimum of 3.53% were private jobs (Fig. 1).

Of 63.96% had moderate work followed by severe work 28.98% (Table 2).

According to BMI, maximum of 63.96% were in the normal weight class followed by 24.38% in the overweight class whereas a minimum of 2.83% was in the underweight class (Fig. 2).

Table 1: Sociodemographic profile of study subjects

Age groups (in years)	Number	Percentage
18–25	5	1.77
26–35	54	19.08
36–45	75	26.50
46–55	88	31.10
56–65	44	15.55
66–75	15	5.30
>75	2	0.71
Gender		
Male	74	26.15
Female	209	73.85
Area		
Urban	154	54.42
Rural	129	45.58

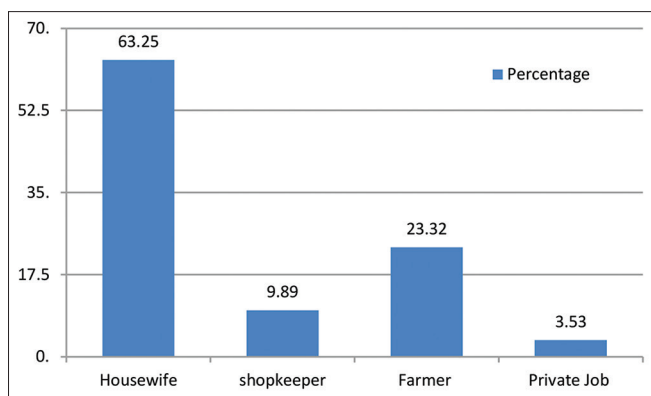


Fig. 1: Distribution of study subjects as per occupation status

Table 2: Distribution of study subjects as per severity of work

Severity	Number	Percentage
Mild	20	7.07
Moderate	181	63.96
Severe	82	28.98

Table 3: Distribution of study subjects as per symptoms

Duration of symptoms	Number	Percentage
3–6 months	86	30.39
6–12 months	16	5.65
>12 months	181	63.96
Symptoms		
Radiculopathy	188	66.43
Neurogenic claudication	45	15.90
Motor deficit	4	1.41
Bladder/bowel	2	0.71

The highest percentage, 63.96%, was observed 12 months after symptom onset, followed by 30.39% within 3–6 months, and the lowest percentage, 5.65%, during 6–12 months. A maximum of 66.43% of lower back pain patients exhibit radiculopathy, either to the right or left side, or both sides. In addition, 15.90% of cases experience neurogenic claudication. A minimum of 0.71% of cases entail bladder/bowel involvement, whereas 1.41% of cases experience motor deficits (Table 3).

The prevalence of spondylolisthesis was 16.61% (47) (Fig. 3).

DISCUSSION

In the present study, a total of 283 patients were included, with 88 (31.10%) falling into the age range of 46–55 years, followed by 75 (26.50%) belonging to the age group of 36–45 years. The average age was 46.62 years, with a standard deviation of 12.01 years. Cruz *et al.* [6] found that the average age (\pm SD) was 48.06 \pm 11.41.

In the study conducted by Layegh and Hejazian [7], it was found that the maximum proportion of females was 73.85%, whereas the minimum proportion was 26.15%.

The study found that the highest proportion of individuals, 63.25%, was housewives, followed by farmers at 23.32%, whereas the lowest proportion, 3.53%, was employed in private jobs. Ahmad *et al.* reported a similar finding [8].

In the present investigation, a maximum of 66.43% of lower back pain patients exhibit radiculopathy, either to the right or left side, or both sides. In addition, 15.90% of cases experience neurogenic claudication. A minimum of 0.71% of cases entail bladder/bowel involvement,

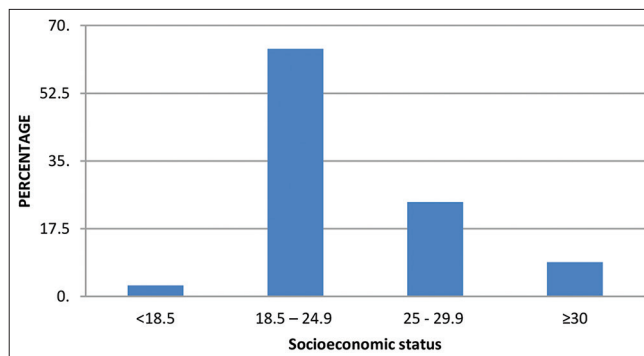


Fig. 2: Distribution of study subjects as per according to BMI status

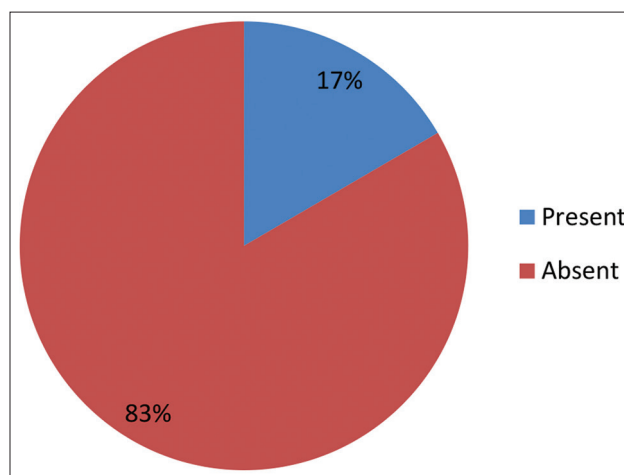


Fig. 3: Prevalence of spondylolisthesis

whereas 1.41% of cases experience motor deficits. In a study conducted by Layegh and Hejazian [7,8], it was shown that radicular discomfort was present in over 60% of cases.

Our study revealed that 16.61% of individuals experiencing lower back discomfort also had spondylolisthesis. He *et al.* [9] reported a prevalence rate of 17.26% for spondylolisthesis. Ishimoto *et al.* reported a prevalence rate of 15.8% for spondylolisthesis.[10]

CONCLUSION

The current study found that middle-aged females were more susceptible to lumbar spondylolisthesis. Low back discomfort exerts a significant influence, resulting in enduring physical disability and incurring substantial societal expenses.

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AUTHORS' CONTRIBUTION

All the authors have contributed equally.

CONFLICT OF INTEREST

The authors declare no conflicts of interest.

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