

**EFFECT OF BODY MASS INDEX ON PREVALENCE OF SCIATICA**Dr. Muhammad Salman Abid<sup>1\*</sup>, Dr. Muhammad Haleem<sup>2</sup> and Dr. Syed Hasnain Ali<sup>3</sup>

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**ABSTRACT**

Sciatica is a health condition characterized by pain going down the leg from the lower back. This pain may go down the back, outside, or front of the leg. Onset is often sudden following activities like heavy lifting, though gradual onset may also occur. A total of 91 patients were included in this study. There were 52 males and 39 males in this study. The mean age of the patients was  $35.12 \pm 2.56$  years, with minimum age of 21 years and maximum age of 52 years. The mean BMI of all the patients was  $23.12 \pm 1.34$ . The analysis of the data revealed significant relation of BMI with the prevalence of sciatica ( $p = 0.01$ ).

**KEYWORDS:** Sciatica, Body mass index.**INTRODUCTION**

Sciatica is a health condition characterized by pain going down the leg from the lower back. This pain may go down the back, outside, or front of the leg. Onset is often sudden following activities like heavy lifting, though gradual onset may also occur. The pain is often described as shooting. Typically, symptoms are only on one side of the body. Certain causes, however, may result in pain on both sides. Lower back pain is sometimes present. Weakness or numbness may occur in various parts of the affected leg and foot.<sup>[1]</sup>

The term "sciatica" usually describes a symptom— pain along the sciatic nerve pathway—rather than a specific condition, illness, or disease. Some use it to mean any pain starting in the lower back and going down the leg. The pain is characteristically described as shooting or shock-like, quickly traveling along the course of the affected nerves. Others use the term as a diagnosis (i.e. an indication of cause and effect) for nerve dysfunction caused by compression of one or more lumbar or sacral nerve roots from a spinal disc herniation. Pain typically occurs in the distribution of a dermatome and goes below the knee to the foot. It may be associated with neurological dysfunction, such as weakness and numbness.<sup>[2]</sup>

Sciatica is generally caused by the compression of lumbar nerves L4 or L5 or sacral nerve S1. Less commonly, sacral nerves S2 or S3 or compression of the sciatic nerve itself may cause sciatica. In 90% of sciatica cases, this can occur as a result of a spinal disc bulge or herniation. Intervertebral spinal discs consist of an outer

annulus fibrosus and an inner nucleus pulposus. The annulus fibrosus forms a rigid ring around the nucleus pulposus early in human development, and the gelatinous contents of the nucleus pulposus are thus contained within the disc. Discs separate the spinal vertebrae, thereby increasing spinal stability and allowing nerve roots to properly exit through the spaces between the vertebrae from the spinal cord. As an individual ages, the annulus fibrosus weakens and becomes less rigid, making it at greater risk for tear. When there is a tear in the annulus fibrosus, the nucleus pulposus may extrude through the tear and press against spinal nerves within the spinal cord, cauda equina, or exiting nerve roots, causing inflammation, numbness, or excruciating pain. Inflammation of spinal tissue can then spread to adjacent facet joints and cause facet syndrome, which is characterized by lower back pain and referred pain in the posterior thigh.<sup>[3,4]</sup>

Other causes of sciatica secondary to spinal nerve entrapment include the roughening, enlarging, or misalignment (spondylolisthesis) of vertebrae, or disc degeneration that reduces the diameter of the lateral foramen through which nerve roots exit the spine. When sciatica is caused by compression of a dorsal nerve root, it is considered a lumbar radiculopathy or radiculitis when accompanied by an inflammatory response. Sciatica-like pain prominently focused in the buttocks can also be caused by compression of peripheral sections of the sciatic nerve usually from soft tissue tension in the piriformis or related muscles.<sup>[5,6]</sup>

## MATERIAL AND METHODS

This cross-sectional study was conducted in outdoor departments of different hospitals. All the patients presenting with leg pain radiating from back were included in this study. Patients of age between 18 to 60 years were included. Brief history of the patients i.e. name, age, gender, and date of onset of symptoms was taken. Height, weight, and BMI of all the patients was noted. Examination was done by senior postgraduate resident. All the findings were collected on a predefined proforma. The data was entered and analyzed in MedCalc software. Relevant statistical analysis was performed. The qualitative variables were presented as frequency and percentages. The quantitative variables were presented as mean and standard deviation.

## RESULTS

A total of 91 patients were included in this study. There were 52 males and 39 males in this study (Table-1).

The mean age of the patients was  $35.12 \pm 2.56$  years, with minimum age of 21 years and maximum age of 52 years. The mean age of the male patients was  $36.89 \pm 3.76$  years and the mean age of the female patients was  $33.23 \pm 2.45$  years.

The mean BMI of all the patients was  $23.12 \pm 1.34$ , the mean BMI of male patients was  $24.23 \pm 2.45$  and mean BMI of the female patients was  $22.34 \pm 1.67$ . Distribution of patients according to the BMI is given in Table-2.

**Table 1: Distribution of patients.**

Gender	Number	%age
Male	52	57.14
Female	39	42.86
Total	91	100

**Table 2: Distribution of patients according to BMI.**

BMI	Male	Female	Total
<18.5	0	1	1
18.5-24.9	39	35	74
25-29.9	11	3	14
>30	2	0	2
Total	52	39	91

The analysis of the data revealed significant relation of BMI with the prevalence of sciatica ( $p = 0.01$ ).

## DISCUSSION

Sciatica is mainly diagnosed by history taking and physical examination. By definition patients mention radiating pain in the leg. They may be asked to report the distribution of the pain and whether it radiates below the knee and drawings may be used to evaluate the distribution. Sciatica is characterized by radiating pain that follows a dermatomal pattern. Patients may also report sensory symptoms.<sup>[5, 6]</sup>

Physical examination largely depends on neurological testing. The most applied investigation is the straight leg raising test or Lasègue's sign. Patients with sciatica may also have low back pain but this is usually less severe than the leg pain. The diagnostic value of history and physical examination has not been well studied. No history items or physical examination tests have both high sensitivity and high specificity. The pooled sensitivity of the straight leg raising test is estimated to be 91%, with a corresponding pooled specificity of 26%. The only test with a high specificity is the crossed straight leg raising test, with a pooled specificity of 88% but sensitivity of only 29%. Overall, if a patient reports the typical radiating pain in one leg combined with a positive result on one or more neurological tests indicating nerve root tension or neurological deficit the diagnosis of sciatica seems justified.

Conservative treatment for sciatica is primarily aimed at pain reduction, either by analgesics or by reducing pressure on the nerve root. A recent systematic review found that conservative treatments do not clearly improve the natural course of sciatica in most patients or reduce symptoms. Adequately informing patients about the causes and expected prognosis may be an important part of the management strategy. However, educating patients about sciatica has not been specifically investigated in randomized controlled trials.<sup>[7,8]</sup>

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