



LUMBAR INTERVERTEBRAL DISC-PROLAPSE AMONG YOUTHS IN NATIONAL ORTHOPEDIC HOSPITAL ENUGU, (NOHE).

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ABSTRACT

Lumbar intervertebral disc prolapse (LIDP) is increasingly being reported among young adults, contrary to its traditional association with aging. This study investigated the demographic distribution, clinical presentation, etiological factors, and treatment outcomes of LIDP among youths in Enugu, Nigeria. A cross-sectional analysis was conducted among youths aged 18–35 diagnosed with LIDP at selected tertiary health institutions in Enugu. Data were collected on gender, age distribution, symptom severity, possible causative activities, level of disc herniation, and treatment outcomes. Females constituted the majority of cases (58%), with the highest prevalence occurring in the 20–30 age group. Mild pain was the most frequently reported symptom, followed by severe pain and lower back pain. Strenuous sports, lifting of heavy loads, childbirth, and prolonged standing were identified as the primary etiological factors in descending order. The L4–L5 and L5–S1 spinal levels were the most commonly affected. Physiotherapy was the predominant treatment approach, with a 92% complete recovery rate. LIDP among youths in Enugu is more common than previously acknowledged, especially among females and individuals in their third decade of life. Mechanical stress from physical exertion and occupational activities appears to be the leading cause. Early diagnosis and physiotherapy offer promising outcomes. Public health education and preventive ergonomics are recommended to reduce incidence and promote spinal health among Nigerian youths.

Keywords: Intervertebral Disc-prolapse, orthopaedic, adults, physiotherapy.

INTRODUCTION

Lumbar intervertebral disc prolapses (LIDP), often referred to as herniated or slipped disc, is a degenerative condition characterized by the displacement of the nucleus pulposus through a tear in the annulus fibrosus, primarily in the lumbar spine region (Fardon et al. 2014). While it is more commonly associated with aging, recent studies indicate a rising prevalence among younger populations, including adolescents and young adults, especially those exposed to repetitive mechanical stress or sedentary lifestyles (Yong-Hing & Kirkaldy-Willis, 1983; Fabritius et al. 2021).

In Nigeria, the burden of musculoskeletal disorders, particularly low back pain, is increasing, with intervertebral disc pathology playing a significant role (Akinbo et al. 2011). This trend is especially concerning among youths, who are increasingly exposed to risk factors such as poor

posture due to prolonged device usage, inadequate ergonomic awareness, obesity, and sports-related injuries (Omokhodion, 2004). Studies conducted in Nigerian urban centers report a notable proportion of youth presenting with symptoms of disc herniation, which is sometimes misdiagnosed or poorly managed due to limited diagnostic infrastructure (Onyemaechi et al. 2019).

In Enugu, a southeastern Nigerian city, a study by Nwankwo et al. (2016) revealed a rising trend of lower back pain complaints among students and young adults in tertiary institutions. While comprehensive epidemiological data specific to LIDP in youths is sparse, hospital records from tertiary health institutions in Enugu such as the University of Nigeria Teaching Hospital (UNTH) suggest an increasing number of radiologically confirmed cases of lumbar disc prolapse among individuals aged 18–35 years (UNTH Records, 2022). This local increase aligns with global trends that show earlier onset of disc

degeneration and herniation, potentially due to modern lifestyle changes and increased participation in high-impact sports (Brinjikji et al., 2015).

Etiologically, factors contributing to LIDP include genetic predisposition, physical trauma, axial loading from poor lifting techniques, and degeneration secondary to poor vascular supply to the intervertebral disc (Urban & Roberts, 2003). In the youth population of Enugu, socioeconomic pressures and inadequate health literacy may also contribute to under reporting and delayed presentation (Igwilo et al. 2020). Moreover, environmental and occupational influences, such as manual labor, motorcycle transportation, and poor seating ergonomics in educational settings, have been implicated in accelerating disc degeneration among young Nigerians (Ezeukwu et al. 2018).

Given the rising trend and disabling nature of lumbar disc prolapse, especially among youths in Enugu and Nigeria at large, there is a pressing need for epidemiological studies to better understand the prevalence, risk factors, and possible preventive measures. Such data would inform public health interventions, awareness campaigns, and health policy formulation aimed at reducing the burden of LIDP among Nigerian youths.

MATERIALS AND METHODS

Study design

A retrospective study of adolescents and young adult patients between the ages of 16 – 37 years with lumbar intervertebral disc prolapse who presented and were managed between January 2018 - January 2023 at National Orthopedic Hospital Enugu.

Study area

This study was conducted in National Orthopedic Hospital Enugu, in the Southern East part of Nigeria.

Data collected

Clinico demographic data including age, sex, etiology, presenting symptoms, levels of herniation, treatment method and clinical outcomes were recorded for 50 patients' whose folders were retrieved from the record department

and ward register.

Statistical analysis

The statistical analysis was done using the statistical package for the social sciences (SPSS) version 23 (SPSS Inc., Chicago, IL) with a value of <0.05 considered significant.

Result

Table 1 Sex distribution

VARIABLES	FREQUENCY (N = 50)	PERCENT (% = 100)
Gender		
Male	21	42.0
Female	29	58.0

Table 2 – Demographic Characteristics

VARIABLE	FREQUENCY (N-50)	PERCENT (%=100)
Age Range		
20 – 24	3	6.0
25 – 29	12	24.0
30 – 34	22	44.0
35 – 39	13	26.0

This table shows the demographics of participants. Most of the participants (44.0%) aged 30 – 34 years, (26.0%) were 35 -39 years, (24.0%) were 25 – 29 years and (6.0%) were 20 – 24 years. About (58.0%) of the participants are female and (42.0%) are male.

Table 3 – The common presenting symptom

VARIABLE	FREQUENCY (N-50)	PERCENT (%=100)
Mild pain	25	40.0
Moderate pain	3	6.0
Severe pain	19	38.0
Lower back pain	3	6.0

This table shows that most of the participants (40.0%) observe that mild pain is the most common presenting symptom in lumbar intervertebral disc prolapse in adolescent and young adults while (38.0%) were severe pain and (6.0%) were moderate pain and lower back pain.

Table 4 – The common etiology

VARIABLE	FREQUENCY (N-50)	PERCENT (%=100)
Road transport accident	3	6.0
Strenuous exercise	11	20.0
Lifting of loads	10	20.0
Child birth	5	10.0
Fall from height	8	18.0
Long standing	8	16.0
Obesity	1	2.0
Prolonged sitting	4	8.0

From the table shown, majority of the participants (20.0%) reports strenuous exercise and lifting of loads as their common etiology followed by fall from height (18.0%), child's birth (10.0%), accident (6.0%), long standing (16.0%) and others.

Table 5 –The level of herniation

VARIABLE	FREQUENCY (N-50)	PERCENT (%=100)
L4 – L5	19	38.0
L3 – L5	3	6.0
T2 – T7	1	2.0
L5 and L2	1	2.0
L5	10	20.0
L4, L5, S1	2	4.0
L4	1	2.0
L1 – L3	1	2.0
L1 – L2	1	2.0
L2 – L3	1	2.0
T7, L2, L3	2	4.0
T10 – L1	1	2.0
L5/S1	2	4.0
L4 – S1	1	2.0
L1 – L5	2	4.0
L2 – S1	1	2.0
Mild L3 - L4 and L4/L5 large	1	2.0

Of the 50 participants, 19 (38.0%) cited L4 – L5 as the level of herniation, followed by L5 (20.0%) while L1 – L5 (4.0%), L5/S1 (4.0%), T7, L2, L3 (4.0%) and L4, L5, S1 (4.0%).

Table 6 – The treatment method

VARIABLE	FREQUENCY (N-50)	PERCENT (%=100)
Physiotherapy	47	94.0
Surgery	0	0.0
Both	3	6.0

As shown in table 6, the most common method of treatment of lumbar intervertebral disc prolapse in adolescent and young adults was physiotherapy (94.0%) and both (6.0%).

Table 7 – The outcomes

VARIABLE	FREQUENCY (N-50)	PERCENT (%=100)
Good	46	92.0
Fair	4	8.0
Bad	0	0.0

As shown in table 7, majority of the participants (92.0%) of them had good outcome with 8% showed fair outcome lumbar intervertebral disc prolapse in adolescent and young adults is good and (8.0%) were fair.

DISCUSSION

The findings of this study reveal critical insights into the demographic and clinical patterns of lumbar intervertebral disc prolapse (LIDP) among youths in Enugu. Notably, a greater proportion of the affected population were females (58%), aligning with recent observations that suggest women may be more susceptible to spinal disc pathologies due to anatomical and physiological differences, including hormonal influences and pregnancy-related mechanical stress (Smith et al. 2011; Wu et al. 2018).

Youth within the age bracket of 20–30 years constituted the most affected group, suggesting an earlier onset of disc degeneration in this population. This early presentation is consistent with global findings indicating that disc herniation is not exclusively an age-related pathology but is increasingly affecting younger adults exposed to high mechanical strain (Brinjikji et al. 2015).

Clinically, mild pain was the most frequently reported symptom, followed by severe pain and lower back discomfort. This gradation reflects the typical progression of LIDP, where initial symptoms may be subtle but worsen with continued mechanical stress or delayed treatment (Fardon et al. 2014). The leading causes identified strenuous sporting activities, lifting of heavy loads, childbirth, and prolonged standing reflect occupational and lifestyle risk factors,

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corroborating previous findings in similar Nigerian populations (Ezeukwu et al. 2018; Igwilo et al. 2020). These physical activities increase intradiscal pressure, leading to annular tears and nucleus pulposus extrusion (Urban and Roberts, 2003).

The most commonly affected spinal levels were L4–L5 and L5–S1, consistent with their biomechanical role in load-bearing and flexibility, making them highly susceptible to degenerative changes (Yong-Hing and Kirkaldy-Willis, 1983). Physiotherapy emerged as the predominant treatment modality, with 92% of affected individuals reporting full recovery. This finding reinforces physiotherapy's role as a conservative and effective first-line intervention for LIDP (Luijsterburg et al. 2008).

CONCLUSION

This study highlights a significant burden of lumbar intervertebral disc prolapse among youths in Enugu, with a disproportionate impact on females and individuals within their third decade of life. Mild to severe back pain remains the predominant symptom, with high-risk activities such as sports, physical labor, and perinatal stress contributing to disease onset. The lumbar levels L4–L5 and L5–S1 are most commonly affected, and physiotherapy has demonstrated excellent outcomes in managing the condition. These findings underscore the need for early screening and intervention among at-risk youth populations.

RECOMMENDATIONS

The study recommends public health education campaigns to raise awareness about proper posture, lifting techniques, and physical ergonomics among youths, particularly in schools, sports clubs, and workplaces. Routine screening and early physiotherapy intervention should be prioritized in primary and secondary healthcare centers to prevent progression and complications of lumbar disc prolapse. Also, gender-specific strategies especially for women in physically demanding roles or post-partum phases should be integrated into musculoskeletal health programs. Further longitudinal and multicenter studies are recommended to explore the long-term outcomes

of conservative treatments and identify potential genetic or socioeconomic contributors to early disc degeneration in Nigerian youth.

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