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THE RELATIONSHIP BETWEEN LOWER CROSS SYNDROME (LCS) AND FLAT FOOT AMONG OBESE POPULATION: A CORRELATION CROSS-SECTIONAL STUDY.

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Background: Lower Cross Syndrome (LCS) is a postural condition characterized by muscle imbalance in the lumbo-pelvic region, leading to altered lower limb biomechanics. Flatfoot, caused by the collapse of the medial longitudinal arch, results in impaired foot function. Obesity contributes to both conditions through increased mechanical load and muscular imbalance. However, limited evidence exists regarding their interrelationship.

Purpose: To investigate the association between LCS and flatfoot among obese individuals, focusing on the influence of muscle strength and flexibility on foot function and pain.

Materials and Methods: A cross-sectional study was conducted among 135 obese individuals aged 18 to 50 years with a Body Mass Index (BMI) between 30 and 39.9 kg/m². Participants of both genders were included. Lower Cross Syndrome was assessed using Manual Muscle Testing (MMT) based on the Medical Research Council (MRC) grading system, the Modified Thomas Test for hip flexor tightness, and measurement of erector spinae muscle length. Flatfoot and its functional impact were evaluated using the Foot Function Index (FFI) and the Numeric Pain Rating Scale (NPRS).

Results: The analysis revealed moderate positive correlations between abdominal and gluteal muscle strength. A significant association was observed between Modified Thomas Test scores and gluteal muscle strength, suggesting interdependence between hip flexor tightness and gluteal function. The relationship between erector spinae muscle length and other muscle groups was relatively low. Additionally, FFI scores positively correlated with Modified Thomas Test scores, indicating increased foot dysfunction with greater hip flexor tightness.

Conclusion: There is a significant relationship between LCS-related muscle imbalances and increased foot dysfunction and pain associated with flatfoot in obese individuals.

Keywords: Lower Cross Syndrome, Flatfoot, Obesity, Muscle Imbalance, Medial Longitudinal Arch.