ORIGINAL RESEARCH PAPER
Volume - 11 | Issue - 05 | May - 2022 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

PREVALENCE OF LOWER CROSSED SYNDROME IN ADULT MALES WITH SEDENTARY LIFESTYLE

Physiotherapy

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ABSTRACT

Background: Sedentary lifestyle is defined as performing less than 25-30 minutes of physical activity per day. Sedentary lifestyle may cause Lower-crossed syndrome (LCS) as, in sitting posture the hip and back muscles do zero work and the entire work is done by the chair sitting upon. **Objective:** To check the tightness and weakness of the lower body muscles and there by determine the cause for alteration in low back posture. **Method:** 100 Subjects with sedentary lifestyle were selected. Weakness of abdominals, gluteus maximum, gluteus medius and gluteus minimus was checked by manual muscle testing method. Tightness of iliopoas, hamstrings, and erector spinae muscles was checked using Thomas test, 90-90 straight leg test & muscle length respectively. **Results:** Erector spinae &TFL tightness was seen more in age group of 31-35 yrs which was (57.38% & 14.28 %) respectively. All the gluteal muscles (minimus, medius, maximus) showed grade 4 weakness in all the age groups. **Conclusion:** Tightness & weakness was found in some of the muscle groups followed LCS pattern in all the age groups.

KEYWORDS

lower crossed syndrome, sedentary lifestyle, tightness, weakness.

INTRODUCTION:

Lower-Crossed Syndrome is the term for a particular pattern of muscular imbalance in the lower body. It is characterized by tightness of erector spinae, hamstrings, iliopsoas & tensor fascia lata which is reflected by weakness of the abdominal muscles in particular the transversus abdominus and the gluteal muscles.

Sedentary lifestyle may cause Lower-crossed syndrome (LCS) as, in sitting posture the hip and back muscles do zero work and the entire work is done by the chair sitting upon. Dysfunction of these muscles mean that the responsibility for lifting the body upright falls mainly on the lumbar spine which when used exclusively to achieve and maintain upright posture, leads to excessive lordosis. This muscle imbalance creates joint dysfunction, particularly at the L4-L5 and L5-S1 segments, SI joint, and hip joint. Specific postural changes seen in LCS include anterior pelvic tilt, increased lumbar lordosis, lateral lumbar shift, lateral leg rotation, and knee hyperextension which would further contribute to back problems.

Sedentary lifestyle is defined as performing less than 25-30 minutes of physical activity per day.

Lower crossed syndrome is a pattern of muscular imbalance in lower body. Sedentary lifestyle may cause pattern of dysfunction known as Lower-crossed syndrome (LCS). This muscle imbalance creates joint dysfunction, particularly at the L4-L5 and L5-S1 segments, SI joint, and hip joint. Specific postural changes seen in LCS include anterior pelvic tilt, increased lumbar lordosis; lateral lumbar shift, lateral leg rotation, and knee hyperextension which if identified early can prevent further contributing back problems

AIM AND OBJECTIVES:

AIM:

To find the prevalence of lower crossed syndrome in adult males with sedentary lifestyle.

OBJECTIVES:

- To check the tightness of the lower body muscles and there by determine the cause for alteration in low back posture.
- To check the weakness of the lower body muscles and there by determine the cause for alteration in low back posture.

MATERIALS AND METHODOLOGY:

Study Design: Cross sectional study.

Sampling Technique: Purposive Sampling.

Sample Size: 100

MATERIALS:

- goniometer
- inch tape
- Pen
- paper
- Consent Form
- plinth

Inclusion Criteria:

Adult males with sedentary lifestyle in age group of 25-40 years.

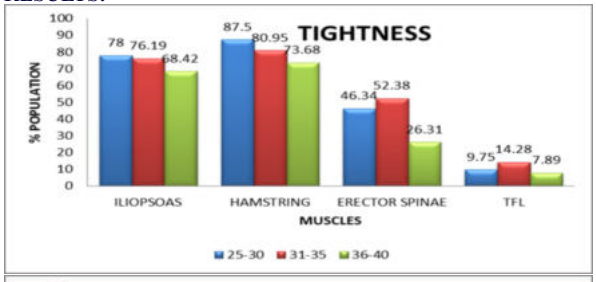
Exclusion Criteria:

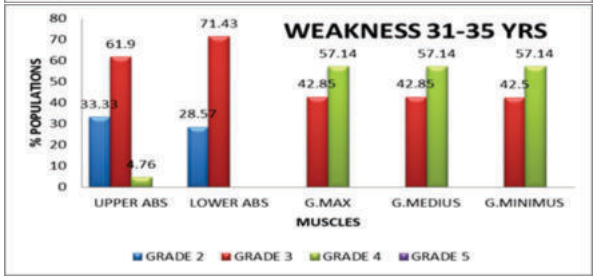
- Surgical or nonsurgical conditions of back & lower limb
- males who are exercising
- Female population.

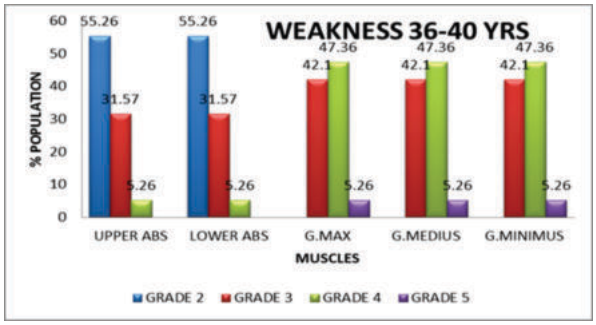
METHODOLOGY:

- Based upon inclusion criteria, 100 Subjects with sedentary lifestyle were selected by using purposive sampling method.
- Informed written consent was taken from the subjects.
- Procedure was explained to the subjects.
- The subjects were asked to assume the testing position and different tests for checking the muscle tightness and muscle strength of the required muscles was performed.
- Weakness of abdominals, gluteus maximum, gluteus medius and gluteus minimus was checked by manual muscle testing method.
- Tightness of iliopoas, hamstrings, and erector spinae muscles was checked using Thomas test, 90-90 straight leg test & muscle length respectively.
- The data was analysed and results were noted.

RESULTS:







Study was conducted on 100 subjects to find out prevalence of lower crossed syndrome. Study revealed that tightness of Iliopsoas (78%) & hamstring (87.5%) muscles was seen more in age the age group of 25-30 yrs. Erector spinae &TFL tightness was seen more in age group of 31-35 years which was (57.38% & 14.28 %) respectively. Age group 25-30 yrs.& 31-35 yrs showed maximum weakness (grade 3) in lower abdominals which was (65.85% & 71.42%) respectively. In age of 36-40 maximum weakness was seen in both upper & lower abdominals (55.26 %) both. All the gluteal muscles (minimus, medius,maximus) showed grade 4 weakness in all the age groups

DISCUSSION:

Sedentary lifestyle may cause Lower-crossed syndrome (LCS) as, in sitting posture the hip and back muscles do zero work and the entire work is done by the chair sitting upon.

Pathophysiology of the lower crossed syndrome: Sedentary lifestyle demands, sitting for long duration. In sitting position, lumbar spine is maintained in upright posture for excess amount of time, which leads to increased lumbar lordosis thereby causing muscle imbalance in the lower region of the body. It can also lead to, joint dysfunction at L4-L5, L5-S1 segment, SI joint and hip joint.

Postural deviations like anterior pelvic tilt, increased lumbar lordosis, lumbar shift, lateral leg rotation, knee hyperextention are the consequences that can occur in long term which may lead to gradual onset of lower crossed syndrome.

CONCLUSION:

Study revealed that all the muscles included in the study did not follow the pattern of tightness & weakness exactly similar to LCS. However tightness & weakness was found in some of the muscle groups that followed LCS pattern in all the age groups. This shows that sedentary population is prone to develop Lower Crossed Syndrome in their near future.

LIMITATIONS:

- Small sample size.
- Subjective measure was used for assessment of muscle strength.
- Female subjects were excluded.

REFERENCES:

1) Jull G. Janda V: Muscles and Motor Control in the low back pain: Assessment and management. Edited by IN Twomey LT, Taylor JR: Physical Therapy of the low back, Churchill Livingston, New York, 1987.
2) Warren Hammer 2005: Functional Soft Tissue Examination and BN 0763727679.
3) *From Assessment and Treatment of Muscle Imbalance: The Janda Approach Human Kinetics Publishers.*
4) Lumbar Stabilization: A Review of Core Concepts and Current Literature, Part 2;Barr, Karen P.; Griggs, Miriam; Cadby, Todd; American Journal of Physical Medicine & Rehabilitation: Volume 86 - Issue 1 - pp 72-80;January 2007.
5) Inefficient Muscular Stabilization of the Lumbar Spine Associated With Low Back Pain: A Motor Control Evaluation of TransversusAbdominis ; Hodges, Paul W. BPhty(Hons); Richardson, Carolyn A. 15 November 1996 - Volume 21 - Issue 22 - p 2640
6) Effects of a ball-backrest chair on the muscles associated with upper crossed syndrome when working at a VDT. Yoo WG, Yi CH, Kim MH 2007.
7) David magee, orthopaedic physical assessment chapter 11;hip;thomas test fifth edition.
8) David magee,orthopaedic physical assessment, chapter 11; hip ,90-90 straight leg raising test,fifth edition.
9) David magee,orthopaedic physical assessment,chapter 8,thoracic spine,muscle length for erector spinae,fifth edition.
10) Muscles testing &function with posture and pain,manual muscle testing of abdominals &hip extensors,fifth edition.
11) Delayed Postural Contraction of TransversusAbdominis in Low Back Pain Associated with Movement of the Lower Limb.Hodges, Paul W. and; Richardson, Carolyn A. Journal of Spinal Disorders: February 1998
12) Chiropractic Management of a 46-Year-Old Type 1 Diabetic Patient with Upper Crossed Syndrome and Adhesive Capsulitis.