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Low Back ACHE Presentation and Rehabilitation in Different Age Groups 15-18 years, 18-25 years, 25-45 years, Above 45 years

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Abstract

Introduction: Pain the lumbar region which starts below the ribs. Everyone experiences lower back ache at some point in their life. In this research we analyzed lower back ache presentation and rehabilitation for different age groups- 15-18 year, 18-25 year, 25-45 year, above 45years of age.

Methodology: Study Design: Experimental Study with sample size of 28 individuals with acute Low Back Pain (LBP). Age ranges from 15-18 years, 18-25years, 25-45 years, above 45 years with inclusion criteria as follows:

People doing a desk job and working in front of screen for long hours (7-8 hrs.), No orthopedic disease that might affect testing, those who can understand English language and children studying in school and college were also included. Exclusion Criteria included conditions diagnosed with- P.I.V.D, structural scoliosis, neurological conditions, metastasis of spine, inflammatory disorders affecting the lumbar spine, metabolic diseases, spinal surgery, undergoing medical or physiotherapy intervention for LBP.

Results and Discussion: The population size was equally sub divided into four groups as per age. Age: 15-18 year (Group A), 18-25 year (Group B), 25-45 year (Group C), above 45 years (Group D). One way anova test was performed to calculate the inter and intra relations of different age groups and their pre and post data (VAS scale and Schober's test). As a result, with the applied physiotherapy protocol (hydrocollator packs, crook lying, back isometric exercise, knee to chest) in all groups for 4 weeks, the most benefited group was group A whereas for flexion range of motion of lumbar spine the most benefited group was group C. The physiotherapy exercises proved to be most beneficial for improving flexion range of motion of lumbar spine in GROUP C overall benefited younger age group A.

Keywords: Low Back Ache; Rehabilitation, Lumbar

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Introduction

Pain the lumbar region which starts below the ribs. Everyone experience lower back ache at some point in their life or other but due to pandemic and continuous lockdown our work and studies everything became online that is online educational classes and work from home which had adverse effects even in younger population causing lower back pins due to bad posture and lack activity.[1]

In this study we analysed lower back ache presentation and rehabilitation for different age groups- 15-18 year, 18-25 year, 25-45 year, above 45years of age.

Human body acts as a kinematic chain in weight bearing conditions. Therefore, any deviation at one joint might affect the other joint directly or indirectly.

Various reasons can lead to development of poor posture. These can be broadly classified as postural (positional) and structural deviations. A stooped or a slouched posture can be described as a posture wherein the back and shoulders are bent forward leading to misalignment of the posture.[2]

Low back pain is the most prevalent musculoskeletal condition and the most common cause of disability in developed nations.

So many steps were taken to decrease the speed of spread of this virus by the countries in which it is wreaking havoc.[3]

Aim

To study the presentation and rehabilitation of lower back ache in different age groups:

15-18 years, 18-25 years, 25-45 years, above 45 years.

Objective

1. To study the presentation of low back ache in different age groups
2. To work on their rehabilitation protocol
3. To eliminate low back ache
4. To gain full pain free ROM and strength of lumbar para-spinal muscles

Need of the Study

Due to the COVID-19 lockdown, people are confiding to their places which led to decreased physical activity. Hence the need is to investigate the incidence of back pain among different age groups due to lifestyle modifications during COVID-19 lockdown also in young working from home population who are constantly using different gadgets to get the work done due to remote learning.

Materials and Methods

Study Design: Experimental Study

Place of Data Collection: Dr Mridula's The Healing Touch Physiotherapy Clinic, Janakpuri, New Delhi

Sampling: Nonprobability sampling

Sample Size: 28 individuals with acute Low Back Pain (LBP)

Age range: 15-18 years, 18-25 years, 25-45 years, above 45 years

Selection Criteria

The subjects were included in the study considering the following criteria:

Inclusion criteria:

1. Patients with acute LBP, Age group 15-18years, 18-25years, 25-45 years, above 45 years both male and female.
2. People doing a desk job and working in front of screen for long hours (7-8 hrs) [4]
3. No orthopaedic disease that might affect testing
4. No visual impairment, visual field defect, or mental or perception problem that might affect testing
5. Those who can understand English.[10]
6. Children studying in school and college were also included.[5]

Exclusion Criteria:

Conditions diagnosed with-

1. P.I.V.D

2. structural scoliosis
3. neurological conditions
4. metastatis of spine
5. Inflammatory disorders affecting the lumbar spine.[6]
6. metabolic diseases
7. spinal surgery
8. undergoing medical or physiotherapy intervention for LBP.

Instruments Required:

1. Inch Tape[7]
2. Visual analogue scale (pain rating scale)[8]
3. Couch[9]
4. Marker

Procedure:

- Sample size of 28 individuals was selected.
- Questionaries was sent through mail.
- Questionnaire was prepared by using google forms and it was sent via E-mail.
- Data collected and data interpretation is done.
- Visual analogue scale was filled by the subjects virtually through use of google forms.
- Written consent was taken from subject who fulfilled the inclusion criteria and who volunteered to participate in the study.
- Subject's demographic data was recorded.
- Patient's detailed history and presentation of low back ache was taken via google forms.
- The selected indiviauls based on the inclusion were told and all necessary instructions were given to them which they need to follow and also we provide them either with certain home exercises of neck or yoga asanas.
- We adviced the subjects to follow all the instructions given for 30 days and we also adviced them to stop practicing all other measures which they were performing before.

Outcome Measures

1. Lumbar spine Range Of Motion: Schober's Test
2. Back pain: VAS

Rehabilitation procedure:

An exercise protocol along with the duration created below:

Hydrocollator Pack[11] for 10 minutes. Knee to chest[12] 10 repetitions, without hold and Crook lying[13] 10 repetitions and hold for 15 seconds along with Back isometric exercises[14] 10 repetitions and hold for 10 seconds. Patient was asked to follow the mentioned protocol 3 sets and repeat it twice a day for 4 weeks.

Data Analysis

Data was compiled and exported to SPSS software (version 26) for analysis. The data collected was arranged for comparison of pre and post results of treatment protocol on LBP pain and 4 weeks which was analysed using descriptive statistics. Descriptive statistics was checked using mean and SD. Annova test and paired p value was calculated, the $p=<0.05$ was taken as the level of significance for checking the significant differences in means.

A total of 28 subjects were taken. Analysis was done on the basis of data collected after 4 weeks of performing the prescribed treatment protocol.

Data was compiled and exported to SPSS software for analysis. The data collected was arranged for comparison of pre and post results of treatment protocol on LBP pain and 4 weeks which was analysed using descriptive statistics. Descriptive statistics was checked using mean and SD. Annova test was calculated, The $p=<0.05$ was taken as the level of significance for checking the significant differences in means.

Table 1: PRE VAS and schober's test Data analysis of patients between age group of 15-18 years of age (Group A), 18-25 years (Group B), 25-45 years (Group C), above 45 years (Group D)

Cases	Flexion schober	Extension Schober	VAS
Group A			
A1	5	3	2
A2	3	4	5
A3	6	2	6
A4	8	3	4
A5	3	3	6

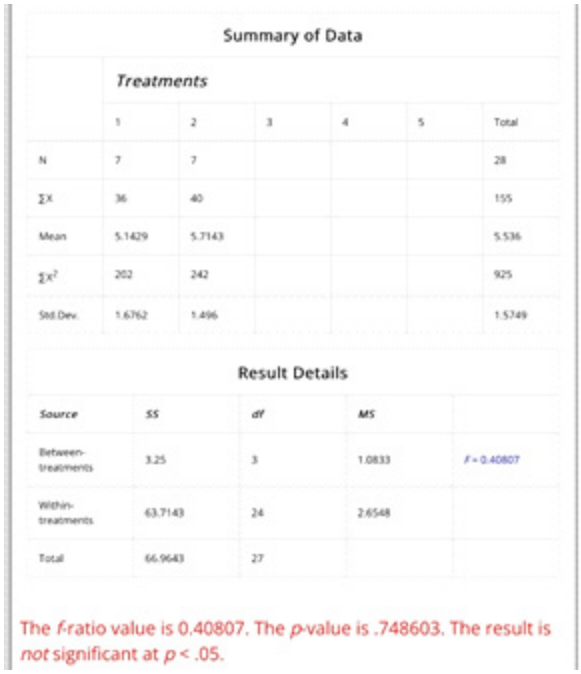
Cases	Flexion schober	Extension Schober	VAS
A6	2	1	2
A7	6	1	1
Mean	3.23	1.7	3.00
Standard Deviation	2.35	1.0	2.07
Group B			
B1	6	3	1
B2	6	2	1
B3	3	3	1
B4	4	4	2
B5	7	3	2
B6	8	4	2
B7	2	1	3
Mean	4.73	2.8	3.00
Standard Deviation	2.15	1.20	2.07
Group C			
C1	6	3	4
C2	2	4	6
C3	3	3	2
C4	2	4	7
C5	5	4	3
C6	2	2	3
C7	6	3	1
Mean	4026	3.2	3.73
Standard Deviation	1.66	1.2	2.21
Group D	4	5	5
D1			
D2	4	4	1
D3	8	1	1
D4	5	4	6
D5	5	2	1
D6	4	1	5
D7	4	3	7
Mean	4026	3.2	3.73
Standard Deviation	2.21	7.11	12.80

Table 2: POST VAS and schober's test Data analysis of patients between age group of 15-18 years of age (Group A), 18-25 years (Group B), 25-45 years (Group C), above 45 years (Group D)

Cases	Flexion schober	Extension Schober	VAS
Group A	5	3	2
A1			
A2	4	4	4
A3	6	2	5
A4	8	3	4
A5	4	3	5
A6	3	2	2
A7	6	1	1
Mean	5.26	2.66	2.8
Standard Deviation	1.62	0.816	1.61
Group B			
B1	6	3	2
B2	6	2	1
B3	4	3	1
B4	5	4	2
B5	7	3	2
B6	8	2	2
B7	4	2	3
Mean	5.26	2.66	2.8
Standard Deviation	1.62	0.816	1.61
Group C			
C1	7	4	3
C2	5	2	4
C3	3	3	2
C4	5	2	5
C5	7	3	3
C6	3	4	3
C7	7	2	1
Mean	4026	3.2	3.73
Standard Deviation	1.66	1.2	2.21

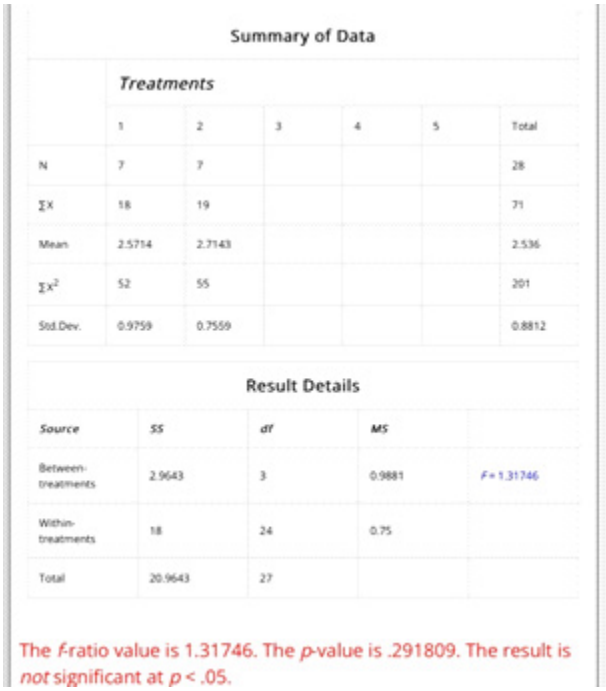
Cases	Flexion schober	Extension Schober	VAS
Group D D1	5	2	2
D2	5	3	1
D3	8	1	1
D4	8	2	3
D5	6	2	1
D6	6	1	3
D7	4	3	4
Mean	5.6	2.5	2.46
Standard Deviation	0.99	1.59	1.3

Table 3: One way anova test was performed to calculate any significant relation between POST flexion schober's test for all groups; A,B,C,D.



Since the p value is > 0.05 the null hypothesis is true and accepted and the result is non significant.

Table 4: One way anova test was performed to calculate any significant relation between POST extension schober's test for all groups; A,B,C,D.



Since the p value is > 0.05 the null hypothesis is true and accepted and the result is non significant.

Discussion

The presentation of low backache in younger age group that is 15 to 18 years, 18 to 25 years is mostly caused by prolonged sitting.

Paras-spinal muscle spasm in the lumbar region is seen and experienced by the patients of above 25 years of age group.

Palliative factors could be change in posture and avoiding to sit for longer period of time using a backrest while sitting and avoiding any provocative factors such as forward bending and rotation of the spine and prolonged sitting and standing.

Physiotherapy treatment along with home exercise prescription helped patients with easing acute and chronic low back ache but the symptoms may reappear once the patient stop doing exercises at home twice a day.

Limitations:

- Sample size was too small, Number of subjects were less.
- For the older age people degenerative changes of the back was not excluded hence age-related factors might affected the study.
- The environmental factors like travelling or driving were not considered as well.

Conclusion

Prevalence of low back pain in younger age group has increased due to remote learning and work from home but it can be treated with physiotherapy treatment and home exercise protocol.

Difficulty in ADLs is usually seen in elderly age group.

Prevalence of low backache has increased to younger age group due to recent lifestyle modifications made due to Covid 19.

Regaularity in follow up of home exercise prescription has helped patients in easing the low back ache in all age groups.

Ethical clearance: Institutional Ethical committee of Amity University, Uttar Pradesh

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Conflict of Interest: Nil

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