



EFFECT OF OCCUPATION SPECIFIC STRUCTURED EXERCISES IN LOW BACK PAIN.

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**ABSTRACT**

**Background:** Low back pain is one of the most common musculoskeletal disorder in various parts of India which may be caused by health problem and it creates a heavy burden on national health and welfare systems in terms of diagnostics, treatment, absenteeism and early retirement. Low back pain is common musculoskeletal problem come across the workplace and loss of quality of life.

**Objectives:**

- To determine the effect of occupation specific structured exercises in low back pain.
- To determine the effect of occupation specific structured exercises on level of pain in subjects with low back pain.
- To determine the effect of occupation specific structured exercises on quality of life in subjects with low back pain.

**Method:** 40 subjects having Low back pain are selected. The pre and post assessment is taken by using by using VAS, Oswestry disability index and SF-36 score. They were divided into two group's i.e, Group A and Group B, Group A received occupation specific structured exercises and conventional treatment and Group B received conventional treatment only.

**Result:** Occupation specific structured exercises and conventional treatment i.e, Group A showed significant improvement in level of pain and quality of life when compared to the conventional treatment only.

**Conclusion:** Occupation specific structured exercises shows significant effect on level of pain, quality of life.

**KEYWORDS :** Low back pain, Visual analogue scale, Oswestry disability index, Quality of life.

**INTRODUCTION**

Low back pain is the leading cause of disability. For most of the people affected by low back pain substantial pain or disability is short lived and they soon return to normal activities regardless of any advice or treatment they receive. The literature has shown that, when considering the aetiology of the nonspecific LBP, the possible risk factor include: age, female gender, race/ethnicity, type of transportation used to go to school, tight muscles, accelerated growth in height, remaining seated for long hours, child work, psychosocial barriers and BMI.<sup>(1)</sup>

Epidemiological studies have indicated that approximately 80% of the population experiences low back pain.<sup>(2)</sup> Many studies have shown that low back pain is the most common musculoskeletal disorders among farmers. The variation of prevalence might be due to the distinction of study population or the relative presence of physical, psychosocial and individual risk factor of LBP.<sup>(3)</sup>

Different occupations are particularly at high risk of developing low back pain and low back disorders which includes poor posturing, prolonged sitting, twisting, bending, stooping and lifting of heavy loads. There are various causes of work absenteeism because of low back pain. More studies should be done to identify the factors which increase the risk of Low back pain.<sup>(4)</sup>

It is a complex condition with several factors contributing to its occurrence. Three different groups of potential risk factors have been identified: (a) individual factors such as body weight age and age, (b) biomechanical factors such as heavy physical load, lifting, twisted postures and vibration and (c) psychosocial factors such as job control and job satisfaction.<sup>(5)</sup>

Exercise therapy is the management strategy that is widely used in low back pain. It encompasses heterogeneous group of interventions ranging from general physical fitness or aerobic exercise to muscle strengthening, various types of flexibility and stretching exercises.

**MATERIALS, METHODOLOGY AND PROCEDURE**

Study was conducted in physiotherapy OPD of Krishna hospital and medical research centre, Karad, after approval of protocol committee and institutional ethics committee. Written informed consent was taken from the participants willing to participate. Outcome assessment was done before the treatment. The inclusion criteria was both male and female of 30-50 years of age group having Low back pain and who were willing to participate was taken. Patients with Inflammatory conditions, Infectious diseases, history of spinal surgeries, and traumatic injuries were excluded.

Total 40 subjects were studied in this experimental study. They were divided into two groups. Group A was experimental group with the mean age of 60.4 while the Group B was a control group with a mean age of 64.7. Group A had a structured exercise protocol like Hot Moist Packs (15 minutes, 3-4 times/day for 8 weeks), Strengthening exercises for back and core muscles (10-20 repetitions, 5 times/day for 8 weeks), Stretching (4 sets with hold of 30 seconds, 5 times/day for 8 weeks), Straight leg raises (10 sets with hold of 5-10 seconds, 5 times/day, each leg for 8 weeks). Group B was a control group. They were given treatment of hot moist pack, stretching exercises.

The pre treatment and post treatment assessment was done by outcome measures like VAS, Oswestry and SF-36 questionnaire.

Data analysis – The statistical analysis of VAS, Oswestry and SF 36 Scores was done by Paired t test and unpaired t test.

**STATISTICAL ANALYSIS**

**1) VAS**

**Table 1: Comparison of pre and post VAS score within the group**

	PRE	POST	p VALUE	INFERENCE
GROUP A	7.75+ 1.02	3.10+0.78	p<0.0001	Extremely significant
GROUP B	7.8+0.83	6.8+0.76	p< 0.0001	Extremely significant

In the Group A, the pre intervention mean VAS score was 7.75+ 1.02 which was reduced to a mean score of 3.10+0.78 post treatment. The p value by paired t-test was found to be <0.0001 which was extremely significant.

In Group B, the pre intervention mean VAS score was 7.8+0.83 which was reduced to a mean score of 6.8+0.76 post treatment. The p value by paired t-test found to be <0.0001 and extremely significant.

**2) OSWESTRY SCALE:**

**Table No.2: Comparison of pre and post PFS score within the group**

	PRE	POST	p VALUE	INFERENCE
<b>GROUP A</b>	75.17+13.20	20.89+ 41.73	p<0.0001	Extremely significant
<b>GROUP B</b>	77.47 + 9.95	41.73 + 0.74	p< 0.0001	Extremely significant

In the Group A, the mean score of ODI on pre intervention was 75.17+13.20 which was decreased to a mean score of post intervention 20.89+ 41.73. The p value by paired t-test was found to be <0.0001 It was extremely significant.

In Group B, the mean score of ODI on pre intervention was 77.47 + 9.95 which was decreases to a mean score 41.73 +0.74 of post intervention. The p value by paired t test was found to be <0.0001 which was extremely significant.

**3) SF- 36**

**Table No. 1.7: Comparison of pre and post SF 36 score within the group**

	PRE	POST	p VALUE	INFERENCE
<b>GROUP A</b>	23.75 + 4.85	75.26+ 6.90	p <0.0001	Extremely significant
<b>GROUP B</b>	23.69 + 4.36	44.96 + 6.99	p < 0.0001	Extremely significant

In Group A, the mean SF 36 on pre intervention was 23.75 ± 4.85 which was increased to a mean score of 75.26 ± 6.90 post intervention. The p value by paired t test was found to be <0.0001 and t value was 59.72 which was extremely significant.

In Group B, the mean SF 36 score on pre intervention was 23.69 ± 4.36 which was increased to a mean and SD score of 44.96 ±6.99 post intervention. The p value by paired t-test found to be <0.0001 and t value was 17.13 which is extremely significant.

**RESULT**

Occupation specific structured exercises ie. Group A showed significant improvement in level of pain and quality of life when compared to the conventional treatment only ie. Group B.

**DISCUSSION**

Low back pain is common musculoskeletal problem come across the workplace and loss of quality of life.<sup>(6)</sup> Different occupations are particularly at high risk of developing low back pain and low back disorders which includes poor posturing, prolonged sitting, twisting, bending, stooping and lifting of heavy loads.<sup>(7)</sup> Role of Exercise therapy has positive result on the individual in all the aspects. In addition, most rice farmers experienced increased LBP from slouched sitting (56.2%), forward bending (70.8%) and lifting (83.2%).<sup>(8)</sup>

People with chronic LBP experience huge social, mental, physical and occupational disruptions.<sup>(9)</sup> It may affect people engaged in almost all the occupations, including healthcare & dental professionals, professionals working on computers or laptops for long hours, or labourers doing heavy manual work etc.<sup>(10)</sup>

The aim of the study was to analyse the effect of occupation specific structured exercises in low back pain. The treatment programme is

designed for the subjects with low back pain to reduce the level of pain, disability, and improvement in quality of life. In this study treatment protocol was given for 8 weeks.

**Advantages of occupation specific exercises –**

- It helps to reduce pain.
- It helps in improving functional ability
- It improve quality of life

In this study, 40 subjects had participated who were diagnosed with low back pain out of which 30 were male subjects and 10 were female subjects.

Subjects were analysed and were divided into two groups according to random sampling method. 20 subjects were included in Group A and conventional treatment with occupation specific exercises was given.

Pre-treatment outcome measures for pain, disability and quality of life was done with VAS, ODI, SF-36. The specific treatment protocol was followed.

Intra group comparison (within group) was analysed by paired t-test for VAS, ODI and SF-36. This showed that there was extremely significant difference of Group A VAS score with (P<0.0001). ODI scores was also extremely significant with (P<0.0001). SF-36 score shows extremely significant difference with (P<0.0001).

Similarly, In Group B, there was extremely significant difference of VAS with (P<0.0001) respectively. ODI score was also extremely significant with (P<0.0001). SF-36 score was also extremely significant with (P<0.0001).

Inter group comparison (between groups) was analysed statistically using unpaired t-test. This shows that pre intervention VAS was not statistically significant with (p=0.0409). Pre intervention ODI was not statistically significant with (p=0.2876) and SF 36 Score was also not significant with (p=0.9568). While comparing the post intervention values of VAS was extremely significant with (p<0.0001). Post intervention ODI was also statistically significant with (p<0.0001). SF 36 score was statistically very significant with (p<0.0001).

In this study, an attempt was made to reduce pain, disability and improve quality of life.

Improvement of subject on week 8 i.e. after the treatment program gets over.

- The subject could perform exercise independently.
- There could be improvement in quality of life of subjects with Low back pain.
- There was reduction of symptoms in both the group but in group A there was marked reduction on symptoms were seen.

In conclusion, the result of current study shows that conventional and structured exercise is significant than conventional exercises. Further studies can be done for longer duration of treatment protocol in order to determine the long term effect of this program.

**CONCLUSION**

Different approaches are used in treating low back pain individuals but this study concluded that the occupation specific structured exercises was more effective than conventional treatment in reducing pain, disability and improving quality of life.

**CONFLICTS OF INTEREST**

This study can be carried out with more various forms of exercises and large sample size can also be taken into consideration.

**ETHICAL CLEARANCE**

Ethical clearance was taken from institutional committee of Krishna institute of medical science, deemed University, Karad.

**SOURCE IF FUNDING**

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