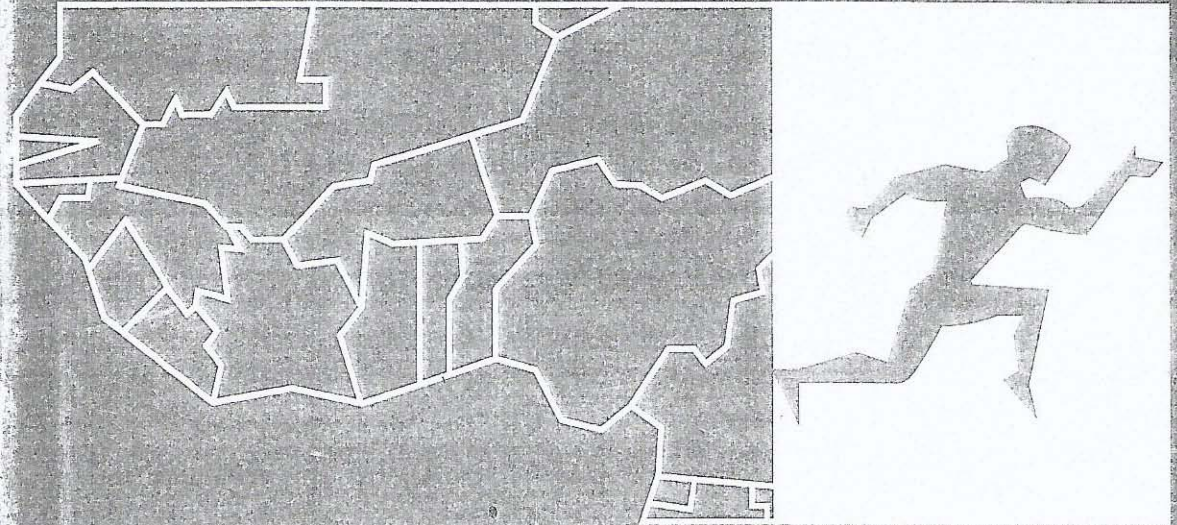


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Home-based Remedial Exercise Programme for Low Back Pain

I.O. Oladipo and R.A. Ogbuehi¹

Abstract

This study was to find out the effect of home-based remedial exercise programme for low back pain, considering changes in pain level, flexibility of the lumbar spine and functional activity level. The participants comprised 5 females and 1 male. Prior to the programme, there was a pre-test, then an eight-week exercise training programme followed by a post-test. The results were analysed using descriptive statistics of range, mean and standard deviation and inferential statistic of paired sample t-test at a significant level of 0.05. The results revealed that there was reduction in the pain level and an increase in functional capacity due to the exercise programme; but there was no significant effect on flexibility. It was therefore recommended that secretaries and lecturers should endeavour not to sit all day but should stand at some intervals to stretch their back muscles. Low back exercises should be performed both at home and at work; also, institutions should include and enforce lunch breaks, especially for secretaries and should organize fitness programmes aimed at back care for staff.

Introduction

Low back pain (LBP) can be described as any pain located along the lower part of the spinal column; this ranges from dull,

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annoying ache to absolute agony and it is a symptom that can arise from

many causes (American Chronic Pain Association, 2001). Low back pain, which affects nearly every individual at some stage of active life, is one of the most common ailments afflicting mankind (McKenzie, 1988; Thomas, 2007). Contributors to the epidemic of low back pain are sedentary lifestyle, obesity, decreasing flexibility, especially in the back due to shortening and tightening of muscles, weak abdominal muscles and hamstring muscles, smoking, and poor posture (Robbins et al., 1999). Some occupations, especially those involving long hours of sitting at the desks, at work stations (Traino, 2007) or in cars and trucks, lifting of heavy objects and lifting with twisting have profound and largely negative impact on human physiology and contribute to LBP occurrence.

With a few exceptions, LBP can be prevented with improved fitness, good living and working habits as well as good posture. The most important factors in the prevention of LBP are the maintenance of strong abdominal muscles and back flexibility. Exercise and movement are usually the natural stimuli for the healing process of low back pain. Controlled and progressive exercise, rather than inactivity and bed rest, often provides the best long-term solution for reducing back pain and preventing or lessening occurrence of body pain.

Study Hypotheses

The study was designed to examine the effects of home-based remedial exercise programme for low back pain among the members of staff of the University of Ibadan. The hypotheses tested were:

1. There will be no significant difference between the pre-test and post-test pain levels of participants with low back pain after an eight-week home-based remedial exercise programme.
2. There will be no significant difference between the pre-test and post-test lower back flexibility of participants with low back pain after an eight-week home-based remedial exercise programme.

3. There will be no significant difference between the pre-test and post-test functional activity levels of participants with low back pain after an eight-week home-based remedial exercise programme.

Method and Procedure for Data Collection

The pre-test/post-test experimental design was adopted for data collection. Six staff of the University of Ibadan with low back pain, but who voluntarily registered for the programme and passed the screening exercise, were selected for the study. The physical fitness components assessed were pain level, lower back flexibility and functional activity level. The participants were pre-tested a week before the training programme, after which they were exposed to an eight-week training and the post-test measures were carried out immediately after the training. Pain level was measured using visual analogue scale; flexibility was measured using the sit and reach box, while functional activity level was measured with the 'resumption of activity daily living'.

Lower back flexibility

The sit and reach box was used to measure flexibility. Participants sat with legs together, the back of the knees flat on the floor and feet flat against the vertical surface of the box. The participants then bent forward at the waist and reached as far forward as possible with their fingers. The point on the box (yardstick) where the fingers stopped was recorded.

Functional activity level

Functional activity level was measured using the 'resumption of activity of daily living' (RADL) scale produced by William and Myers (1998). RADL scale is rated from 0% to 100%; the participants' scores were averaged and taken as the functional

activity level score. A high score represented a good functional activity level.

Pain level

This was assessed using the visual analogue scale. The participants indicated on the scale the point that represented the level of pain felt, from 0 to 10, and this was recorded.

Results

Table 1, for the analysis of hypothesis 1, shows that the pre-test pain level mean value is 4.92, which is higher than the post-test mean value of 2.58; the standard deviation of the pre-test pain level, 2.62, is also higher than that of the post-test, which is 2.01. The significant (2-tailed) value of 0.005 is lower than the set 0.05 alpha level for this study. Also, the calculated t-value of 4.889 is greater than the critical t-value of 2.571, which implies that the hypothesis is significant and is, thus, rejected. Therefore, there was a significant difference between the pre-test and post-test pain levels of the participants due to the exercise programme.

Table 1: Paired t-test for pain level of participants

<i>Level of pain</i>	<i>Mean</i>	<i>N</i>	<i>Std. deviation</i>	<i>Sig. (2 tailed)</i>	<i>df</i>	<i>t (cal.)</i>	<i>t (crit.)</i>
Pre-test	4.9167	06	2.61566	0.01	5	4.889	2.571
Post-test	2.5833		2.01039				

Table 2: Paired t-test for flexibility level of participants

<i>Flexibility level</i>	<i>Mean (cm)</i>	<i>N</i>	<i>Std. deviation</i>	<i>Sig. (2 tailed)</i>	<i>df</i>	<i>t (cal.)</i>	<i>t (crit.)</i>
Pre-test	8.13333	06	11.672475	0.134	5	-1.787	2.57
Post-test	11.9667		6.60747				

Table 2, analysing hypothesis 2, shows that the pre-test mean value of 8.13cm is lower than the post-test mean value of 11.97cm. However, the pre-test standard deviation of 11.67 is higher than that of the post-test, which is 6.61. The significant (2-tailed) value is 0.134, which is higher than the 0.05 set alpha level for this study; also, the calculated t-value of 1.787 is lower than the critical t value of 2.571, which implies that the hypothesis is not significant and is, thus, accepted. Therefore, there is no significant difference between the pre-test and post-test flexibility levels of the participants with low back pain.

Table 3, which analyses hypothesis 3, shows that the pre-test mean for functional activity level is 51.03, which is lower than the post-test mean of 76.15; the pre-test standard deviation, 16.45, is also lower than that of the post-test 11.18. The significant (2-tailed) value of 0.035 is lower than the 0.05 alpha level set for the study. The calculated t-value of 2.865 is also greater than the critical t-value, 2.571, which indicates that the hypothesis is significant and is, thus, rejected. Hence, there is a significant difference between the pre-test and post-test functional activity levels of participants as a result of the programme.

Table 3: Paired t-test for functional activity level of participants

Functional activity level	Mean	N	Std. deviation	Sig. (2 tailed)	df	t (cal.)	t (crit.)
Pre-test	51.0333	66	16.44964	0.035	5	-2.86	2.57
Post-test	76.1500		11.17672				

Conclusion and Recommendations

Low back pain is a major cause of absenteeism, poor work performance and loss of employment. For optimal performance at work, an individual needs a healthy back. Low back pain (LBP) reduces a worker's functional activity; this consequently leads to reduction in productivity and a fall in gross profit. This study has

shown that home-based exercises for low back pain significantly reduce pain levels and increase functional activity levels of individuals; although, flexibility is not affected significantly.

Based on the study, it is recommended that secretaries and lecturers should endeavour not to sit all day but stand at some intervals to straighten their backs. Low back exercises should be performed both at home and at work to keep the back healthy and strong; and more flexibility exercises should be included in low back exercise programmes so that the effect on flexibility can be significant.

References

- American Chronic Pain Association (2001) What is back pain? Retrieved from www.spinehealth.com.
- Mckenzie, R.A. (1988). *Treat Your Own Back* (4th ed). New Zealand; Spinal Publication NZ ltd.
- Robbins, Powers and Burgess.(1999). *A Wellness Way of Life*. Boston Burr Ridge: WBC/ Mc Graw Hill; 156 - 157.
- Traino, J.J. (2007). Reducing back pain while sitting in office chairs. Washington DC. Retrieved 5 September 2007 from www.spinehealth.com.
- Thomas, E.T. (2007). Mckenzie therapy for mechanical low back pain. Retrieved 20 August 2007 from www.spinehealth.com.bulletin.