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EFFECTIVENESS OF BACK STRENGTHENING EXERCISES ON LOW BACK PAIN AMONG POST MENOPAUSAL WOMEN IN SELECTED VILLAGE

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Abstract

A quasi experimental study was conducted to evaluate the effectiveness of back strengthening exercises on low back pain among post menopausal women in selected area. The quasi experimental pre-test post-test control group design was adopted and the post menopausal women from Ammapet area were chosen for the study. 60 samples were selected by purposive sampling technique. The level of low back pain was assessed by using modified Oswestry low back pain disability questionnaire. Back strengthening exercise was administered for Study group. Post test done on fourth week of the data collection period. The data gathered were analyzed by descriptive and inferential statistical method and interpretations were made on the basis of the objectives of the study. During pretest, in Study group none of them had minimal low back pain, 9(30%) had moderate low back pain, 16(53.33%) had severe low back pain, 5(16.66%) had crippled low back pain and none of them had bed bound. In Control group, none of them had minimal low back pain, 10 (33.33%) had moderate low back pain, 17(56.66%) had severe low back pain 3(10%) with crippled low back pain, none of them with bedbound. During post test, in Study group 19(63.33%) had minimal low back pain, 7(23.33%) had moderate low back pain, 2(6.66%) had severe low back pain and 26.66%) had crippled low back pain. In Control group, none of them had minimal low back pain, 10(33.33%) had moderate low back pain, 17(56.66%) with severe low back pain, and 3(10%) crippled low back pain. The mean score on level of low back pain among post menopausal women in Study group were 49.93 in pre test and 19.73 in post test respectively. The paired 't' value for low back pain were 10.74* which is significant at $p < 0.05$. It shows that back strengthening exercise was effective in reducing the level of low back pain. Hence the research hypothesis h1 is accepted. In Control group the mean score on level of low back pain among post menopausal women were 48 in pre test and 48 in post test respectively. The estimated paired 't' value for low back pain were 0.26 which is not significant at $p < 0.05$. The data findings showed that there was no significant association between the post test level of low back pain among post menopausal women with their demographic variable such as age, education, occupation, income, religion, dietary pattern, type of delivery, number of children, age of menopause and type of menopause at $p > 0.05$ level. Hence hypothesis H3 is not accepted.

Keywords: back strengthening exercises, low back pain, post menopausal women.

Research Article

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INTRODUCTION

Human life constitutes various specific stages, in which both men and women have to pass through. Each stage of human life is very important and unique in nature as certain physical development takes place in its own way. Every stage of life is interconnected with the other, according to physical growth takes place in a natural process. It is a fact that there is a slightly different stage of womanhood in comparison to manhood. Menstruation is the bodily process that marks the beginning of womanhood. It also stays with her for a greater part of her life. Woman's first period is known as menarche and it normally occurs at the age of 10-17 years.

Female reproductive function is governed by hormonally regulated cycles called menses. Female reproductive abilities start during adolescence, with the onset of menses. Reproductive abilities decline around the 5th decade, when the frequency of ovulation diminishes and the menstrual cycle becomes shorter and more irregular. From menarche a woman gets her regular period roughly each month until she reaches menopause. Menopause is the most important life stage in women. It marks the end of menstruation leading to women aging process when she cannot become pregnant. In other words, it is the physiological cessation of the menstrual cycle associated with advancing age. It is a natural process that happens to every woman as she grows older and not due to medical problem, disease or illness.

Statement of the Problem

A quasi-experimental study to evaluate the effectiveness of back strengthening exercises on low back pain among post-menopausal women in selected village.

AIM

The aim of the study was to evaluate the effectiveness of back strengthening exercises on low back pain among post-menopausal women

Objectives of the Study

- To assess and compare the pre and post level of low back pain among post-menopausal women in study and control group.
- To evaluate the effectiveness of back strengthening exercise on low back pain among post-menopausal women in study group.
- To determine the association between posttest level of low back pain among post-menopausal women with their selected demographic variables in study and control group.

Research Hypothesis

- H1: There is a significant difference in the pre and posttest level of low back pain among post-menopausal women in study group and control group.
- H2: There is a significant difference between the posttest level of low back pain among post-menopausal women in the study and control group.
- H3: There is a significant association between post test level of low back pain among post menopausal women with selected demographic variables in the study and control group.

Assumption

- Level of low back pain may be reduced with the help of back strengthening exercise on post menopausal women.

RESEARCH METHODOLOGY

Research Approach

Quantitative Experimental Approach was adopted for conduction of the study.

RESEARCH DESIGN:

In this study Quasi experimental, Pretest Post-test Control Group Design was adopted for this study.

VARIABLES:

Independent variable- Back strengthening exercise
Dependent variable- Low back pain.

Setting of the Study

The research setting is that the location where the researcher collected the information from the post menopausal women with moderate and severe low back pain in Ammapet under our institutional rural community area which is situated 12 kilometer away from Shanmuga College of Nursing.

Population of the Study

All the post-menopausal women with moderate and severe low back pain who were residing in Ammapet.

Sampling

Sample size was 60, out of which 30 samples in the control group and 30 samples in the study group.

Sampling Technique

In this study Non probability, Purposive Sampling Technique was used to select the samples of experimental & control group from the population.

Description of the tools

The tool used for the study consists of 3 parts.

Part I

Structured questionnaire is made to collect the demographic variables such as age, education, occupation, income,

religion, dietary pattern, type of delivery, number of children, age of menopause and type of menopause.

Part II

The numerical pain rating scale was used.
Scores for level of pain

0 – no pain
1-3 – mild pain
4-6- moderate pain
7- 10 – severe pain

Part III

The Modified Oswestry Low Back Pain disability index questionnaire is a golden standard tool for the Low Back Pain. Totally it has 10 items namely pain intensity, personal care, lifting, walking, sitting, standing, sleeping, social life, travelling**,** and employment

There are 10 items with 6 responses. Each response score starts from 0-5. According to the patients response the score was awarded. Simply add up the points for each section and plug it in to the following formula in order to calculate the level of low back pain: point total / 50X100=% low back pain. The findings were interpreted as follows:

0% to 20% - minimal
21% to 40%- moderate
41% to 60%- severe

61% to 80%- crippled
81% to 100%- bed bound

DESCRIPTION OF INTERVENTION:
Procedure of back strengthening exercise
Exercise1

Starting position: Lying face downwards, leg extended, head resting on folded arms.
Method: Raise extended legs alternately. Repeat 10 times.

Exercise 2:

Starting position: Lying face downwards, leg extended, head resting on folded arms.
Method: Keeping the feet together, raise both legs simultaneously. Repeat 10 times.

Exercise 3:

Starting position: Lying face downwards, arms stretched beyond the head.
Method: Simultaneously raise one extended arm and the opposite side leg, repeat with the other arm and leg. Repeat 10 times.

Exercise 4:

Starting position: Lying face downwards, legs extended, forehead resting on arms.
Method: Raise the head and chest, all the while keeping arms folded under the forehead. Repeat 10 times.

ANALYSIS

Section A: Distribution of Sample According to the Level of Low Back Pain Before Intervention
Table-1: Frequency and percentage distribution of sample according to the level of low back pain in Study group and Control group before intervention.   (n=60)

Levels of low back pain	Pre test			
	Study group (n=30)		Control group (n=30)	
	F	%	f	%
minimal	0	0	0	0
Moderate	9	30	10	33
severe	16	53	17	57
Crippled	5	17	3	10
bedbound	0	0	0	0

Table 1 shows that During pretest, in Study group none of them had minimal low back pain, 9(30%) had moderate low back pain 16(53.33%) had severe low back pain, 5(16.66%) had crippled low back pain and none of them had bed bound. In Control group none of them had minimal low back pain, 10 (33.33%) had moderate low back pain, 17(56.66%) had severe low back pain, 3(10%) of them had crippled low back pain and none of them had bedbound.
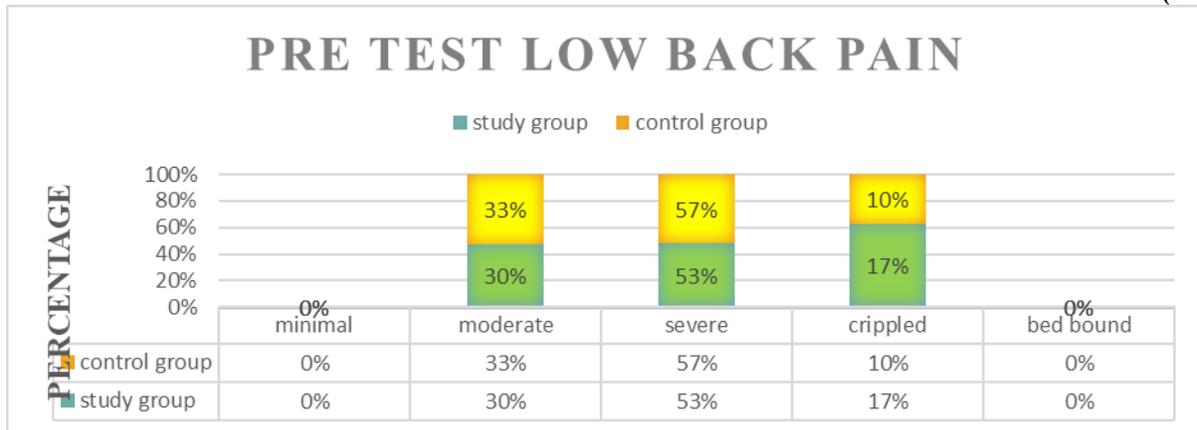
(n=60)

Figure 1: Distribution of Sample according to the Level of low back pain before Intervention

Section B: Distribution of Sample According to the Level of Low Back Pain After Intervention
Table 2: Frequency and percentage distribution of sample according to the level of low back pain Study group and Control group after intervention   **(n=60)**

Levels of low back pain	Post test			
	Study group (n=30)		Control group (n=30)	
	F	%	f	%
Minimal	19	63	0	0
Moderate	7	23	10	33
Severe	2	7	17	57
Crippled	2	7	3	10
Bedbound	0	0	0	0

Table- 2 shows that, during post test, in Study group 19(63.33%) had minimal low back pain, 7(23.33%) had moderate low back pain, 2(6.66%) had severe low back pain and 2(6.66%) had crippled low back pain. In Control group, none of them had minimal low back pain, 10(33.33%) had moderate low back pain, 17(56.66%) had severe low back pain, and 3(10%) of them had crippled low back pain.
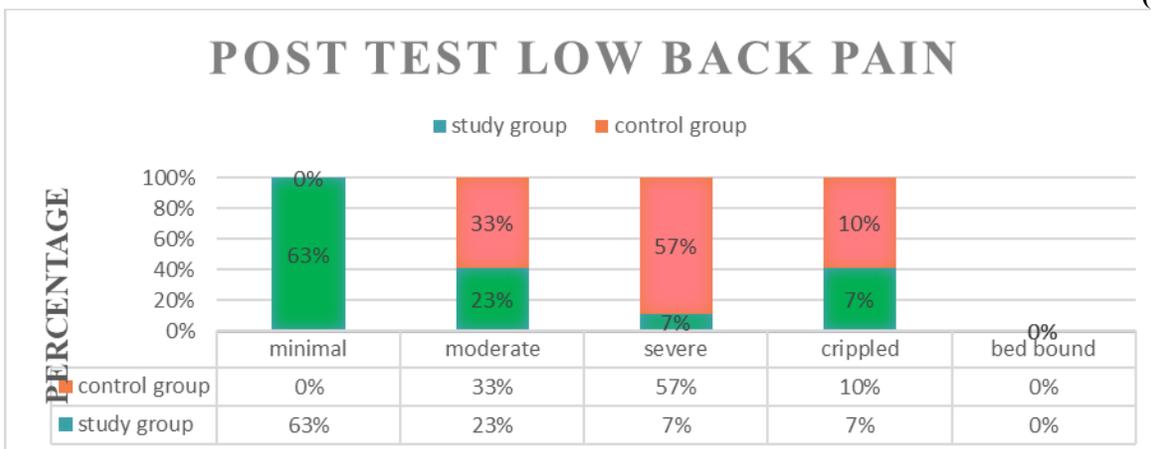
(n=60)

Figure 2: Distribution of Sample according to the Level of low back pain after Intervention

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Section C: Comparison of Pre Test and Post Test Level of Low Back Pain in Study Group and Control Group

Table-3: Mean, SD and paired 't' value on pre and posttest level of low back pain among post-menopausal women in Study group and Control group   **(n=60)**

Level of low back pain	group	mean	SD	Mean difference	df	't'
Experimental group	Pre test	49.93	15.30	30.2	29	10.74*
	Post test	19.73	19.79			
Control group	Pre test	48	13.41	0	29	0.26
	Post test	48	13.34			

Table value t=1.69, * Significant at p < 0.05 level.

Table - 3 represents the mean score on level of low back pain among post menopausal women in Study group 49.93 in pre test and 19.73 in post test respectively. The paired 't' value for low back pain were 10.74* which is significant at $p < 0.05$. It shows that back strengthening exercise was effective in reducing the level of low back pain. Hence the research hypothesis (H1) is accepted.

In Control group the mean score on level of low back pain among post menopausal women were 48 in pre test and 48 in post test respectively. The estimated paired 't' value for low back pain were 0.26 which is no significant at $p < 0.05$.

Section D: Comparison of Post Test Level of Low Back Pain Among Post Menopausal Women in Study Group and Control Group.

Table-4: Mean, SD and independent 't' value on level of low back pain among post-menopausal women in Study group and Control group after intervention.   **(n=60)**

Level of low back pain	mean	SD	df	't'
Experimental group	19.73	19.79	58	6.54*
Control group	48	13.34		

Table value t=1.96, * Significant at p < 0.05 level.

Table - 4 represents, the mean score on level of low back pain among post-menopausal women in posttest Study group was 19.73 and 48 in Control group. The estimate 't' values were 6.54* which is significant at $p < 0.05$. It shows that back strengthening exercise was effective in reducing the level of low back pain. Hence the research hypothesis (H2) is accepted.

Recommendations

- A similar study can be conducted among large samples.
- A similar study can be conducted among post-natal mothers who underwent
- cesarean section with Low Back Pain.
- A similar study can be conducted by giving the exercise for a long period.

- The similar exercises can be educated to the industrial workers who are at risk of getting Back Pain.

CONCLUSION

From the results of the study, it is concluded that back strengthening exercise was effective in low back pain among post-menopausal women. These exercises were not only cost effective but also easy to follow. Compare to pharmacological therapy, the exercise has fewer side effects. The post-menopausal women also feel very happy and comfort while providing back strengthening exercise. Post menopausal women can educate other post-menopausal women in order to create awareness about the problems. Therefore, the investigator feels that, more importance should be given for back strengthening exercises to reduce the low back pain.

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