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Effectiveness of the postural rehabilitation exercise among women with low back pain in selected urban community at Guwahati, Assam

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Abstract

Background: Low back pain (LBP) is the most prevalent and disabling musculoskeletal condition worldwide. LBP is a common complaint associated with functional limitations and disability among women.

Aim: The study aims to assess the effectiveness of the postural rehabilitation exercise among women with low back pain in selected urban community at Guwahati.

Material and Method: The study adopted a Pre – experimental one group pre – test post – test design, 40 women of age 25-50 years with low back pain in selected urban community, Guwahati. Were recruited as sample of the study using non-probability purposive sampling technique. Demographic Performa, Structured 3-point Likert scale for the assessment of low back pain were used as tool for data collection, Demonstration of postural rehabilitation exercise was used as an intervention for finding the effectiveness on reducing low back pain.

Results: The present study revealed that there was a significant association of low back pain and selected Demographic Variables with respect to Age in years ($\chi^2 = 9.23$, $p = 0.01$) and there were no significant association of low back pain with other selected demographic variables.

Conclusion: The results have shown that there is effectiveness of postural rehabilitation exercise on reducing the low back pain among women.

Keywords: Assess, effectiveness, low back pain, postural rehabilitation exercise, women

Introduction

Low back pain (LBP) is the most prevalent and disabling musculoskeletal condition worldwide. It is defined as pain which localises posteriorly within the region from the inferior border of the twelfth rib to the lower gluteal folds. LBP is a common complaint associated with functional limitations and disability among women. As such, the rehabilitation for LBP has been recommended to manage and reduce the prevalence of this condition among the elderly. The effective treatment for LBP has been extensively investigated to improve their physical functions and quality of life and to reduce burden to families, societies, and countries.

Methodology

The objective of the study present was to assess the effectiveness of the postural rehabilitation exercise among women with low back pain in selected urban community at Guwahati, Assam. The research approach chosen for the study was Quantitative research approach (One group pre-test post-test research design). The study was conducted in selected urban community, Kahilipara, Guwahati, Assam. The data were collected from 40 women having low back pain. Formal permission was obtained from the concerned authorities. Written informed consent was taken from the participants.

Sample Size

The sample size consists of 40 women of age 25-50 years with low back pain.

Sampling technique

Non-probability purposive sampling technique.

Tools for data collection

The tool used in the study were

Section I: Demographic variables

Section II: Likert scale for assessment of low back pain.

Method of Data Collection

Demographic Performa and Structured 3-point Likert scale for assessment of low back pain was used for the collection of the study.

Procedure for data collection

Formal permission was obtained from the concerned authorities. The data was collected in the month of October, 2021. The purpose of the study was explained to the women with low back pain and written informed consent was taken from them. The investigator had given a self-introduction, explained the purpose of the study and ascertained the willingness of the subjects to participate in the study. Pre-test assessment was conducted from 6th to 11th October, 2021 by using structured 3-point Likert scale for assessment of on low back pain. After the assessment a visual aid for postural rehabilitation exercise was demonstrated. Post-test assessment was conducted from 20th to 25th October, 2021 by using the same structured 3-point Likert scale structured questionnaire for assessment of low back pain.

Data Analysis

The data were analyzed and interpreted in accordance with the objectives of the study by using descriptive and inferential statistical methods. Frequency and percentage distribution methods were used for the analysis of demographic variables in the study.

Results

Table 1: Frequency and percentage distributions of women with low back pain according to sample characteristics n = 40

Demographic variables		Frequency	Percentage
Age	25 to 35	4	10%
	35 to 45	17	42.5%
	45 and above	19	47.5%
Religion	Hinduism	33	82.5%
	Islam	5	12.5%
	Christianity	2	5%
	Others	0	0%
Educational Qualification	Illiterate	4	10%
	Under matriculate	3	7.5%
	HSLC	6	15%
	HS	7	17.5%
	Graduation	17	42.5%
Occupation	Housewife	17	42.5%
	Private employee	14	35%
	Govt. employee	9	22.5%
Marital Status	Single	0	0%
	Married	38	95%
	Divorced	2	5%
Type of family	Nuclear	24	60%
	Joint	16	40%
Working hours	0-8hrs	7	17.5%
	0-9hrs.	18	45%
	More than 9 hours	15	37.5%
Type of delivery	Normal	32	80%
	C-Section	8	20%
Any neurological problem	Yes	0	0%
	No	40	100%

Table 2: Frequency and percentage distribution of low back pain before and after the implementation of postural rehabilitation exercise, N=40

	Mild Pain	Moderate Pain	Severe Pain
Pre-test	0(0%)	1(2.5%)	39(97.5%)
Post-test	6(15%)	34(85%)	0(0%)

Table 3: Shows the mean, standard deviation, mean difference and t – value of low back pain before and after the implementation of postural rehabilitation exercise, N = 40

	Mean	SD	Mean Difference	DF	'T'-value	P-Value
Pre-test	23.3	1.76	7.7	39	22.0	0.001***
Post-test	15.6	3.11				

(***-significant at $p < 0.05$); tabulated t-value – 2.26

Table 4: Chi Square table showing the association of low back pain before the implementation of postural rehabilitation exercise with selected demographic variables, (N = 40)

Demographic Variables	Pre-test level of low back pain		χ^2	DF	P -Value
	Moderate Pain	Severe Pain			
Age in years	< 35 years	1	9.23	2	0.01**
	36 - 45 years	0			
	> 45 years	19			
Religion	Christianity	0	0.22	2	0.89 ^{NS}
	Hindu	1			
	Islam	0			
Educational Standard	Graduate	1	1.34	5	0.93 ^{NS}
	HS	0			
	HSLC	0			
	Illiterate	0			
	Post Graduate	0			
	Under Matriculate	0			
Occupation	Govt. Employee	0	1.9	2	0.38 ^{NS}
	Housewife	0			
	Pvt. Employee	1			
Marital Status	Married	1	0.05	1	0.82 ^{NS}
	Widow	0			
Types of Family	Joint	0	0.68	1	0.41 ^{NS}
	Nuclear	1			
Working Hour	0 - 8 hours	1	4.84	2	0.09 ^{NS}
	0 - 9 hours	0			
	> 9 hours	0			
Types of Delivery	Caesarean Section	0	0.26	1	0.61 ^{NS}
	Normal	1			

(** – Significant at $p < 0.05$; ^{NS} – Not Significant)

Discussion

The study revealed that there is effectiveness of postural rehabilitation exercise on reducing the low back pain among women. In this study, it revealed that the calculated 't' value ($t = 22.0, p < 0.001$) before the implementation of postural rehabilitation exercise was found higher than the tabulated 't' value ($t = 2.26, p < 0.001$) which is statistically significant at 0.05 level of significance after the implementation of postural rehabilitation exercise.

Similar study was conducted by Kim JH, Kim YE, Bae SH, Kim KY (2013) [6] the effects of the Neurac sling exercise on postural balance adjustment and muscular response patterns in chronic low back pain (CLBP) patients. It was

found that lumbar stabilization exercise using the Neurac sling is effective in decreasing pain, improving damaged postural balance adjustment, and normalizing muscle response patterns of CLBP patients

Similar study was carried out by Paolucci T, Fusco A, Iosa M, *et al.* (2012) ^[5] to evaluate the efficacy of a perceptive rehabilitation in terms of stability and pain relief with chronic non-specific low back pain in an experimental study. There were reductions in sway length ($p = 0.019$) and later lateral sway velocity ($p = 0.038$).

Conclusion

From the findings of the present study the following conclusion were draw:

Mean post-test score after implementation of Postural Rehabilitation Exercise is lower than the mean pre-test score before implementation of Postural Rehabilitation exercise

Therefore, from the findings of the study it was concluded postural rehabilitation exercise is effective in reducing the low back pain among women.

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