

EFFECTIVENESS OF MCKENZIE THERAPY ON LOW BACK PAIN AMONG SCHOOL TEACHERS AT SELECTED SCHOOLS IN KILACHERY

Kavitha M ^{1*}, Yuvarani G ², Anayath Ali ³, Adnan Gulzar ⁴,
Dr. C. Muthulakshmi ⁵ and S. Suganthi ⁶

¹ Nursing Tutor, Department of Community Health Nursing, Saveetha College of Nursing, Saveetha Institute of Medical and Technical Sciences, Thandalam.

*Corresponding Author Email: kavithakarthik98@gmail.com, ORCID: 0009-0006-2662-0875

^{2,3,4} B.Sc (N) IV Year, Saveetha College of Nursing, Saveetha Institute of Medical and Technical Sciences, Thandalam. Email: ²171901093.scon@gmail.com, ³171901093.scon@gmail.com, ⁴171901093.scon@gmail.com

⁵ Associate Professor, Department of Obstetrical Gynecological Nursing, Saveetha College of Nursing, Saveetha Institute of Medical and Technical Sciences. Email: muthulakshmi.scon@saveetha.com

⁶ Nursing Tutor, Department of Community Health Nursing, Saveetha College of Nursing, Saveetha Institute of Medical and Technical Sciences, Thandalam. Email: suganthis.scon@saveetha.com

DOI: [10.5281/zenodo.12204235](https://doi.org/10.5281/zenodo.12204235)

Abstract

Background: The aim of this study was to describe, through a systematic review, the effect of McKenzie therapy on low back pain among school teachers. In this study analyse to determine the effectiveness of McKenzie Therapy will reduce the low back pain among school teachers. Materials and Methods: a quantitative Approach was used with pre- experimental one group pretest posttest research design adopted for the current study, and the samples were based on inclusion criteria by using purposive sampling techniques. The structured questionnaire was used to collect the demographic variable and clinical variables. In this study data was analyzed based on the objectives and hypothesis of the study using descriptive and inferential statistics. Results: The study predicts that before the intervention of McKenzie therapy in experimental group 14 (46.7%) of school teachers had moderate low back pain and 16(53.3%) had severe low back pain. After the McKenzie therapy, only 13(43.3%) of school teachers had mild low back pain and 17 (56.7%) school teachers had moderate low back pain and none of them had severe low back pain. The decreased level of low back pain shows that effectiveness of McKenzie therapy. The mean post test score in experimental group was 18.5 which was less than the mean pretest low back pain score 29.03. The obtained paired 't' value is 15.04 .The mean difference 10.6 was highly significant at 0.001.

Keywords: Low Back Pain, Effectiveness, McKenzie Therapy, School Teachers.

1. INTRODUCTION

Low back pain (LBP) is a prevalent and debilitating condition affecting individuals across the globe, irrespective of age, occupation, or gender. Its impact on the workforce, particularly among school teachers, is a matter of growing concern.

School teachers, who spend a significant portion of their day in a classroom setting, are especially susceptible to LBP due to prolonged periods of sitting, standing, and often adopting poor posture while interacting with students and delivering lessons. The consequences of LBP among this professional group extend beyond individual suffering; it can compromise teaching quality, classroom dynamics, and the overall educational experience.

Low back pain is a common cause of staff absence in school. There is a high risk of short term problems turning into long term absence. Productivity is reduced and children learning are also affected.

Staff working in school particularly those working with younger children is most at risk, but every teacher can be affected. A teacher is a person who helps others to acquire knowledge, competences or values. Teachers face several occupational hazards in their line of work, including occupational stress, which can negatively impact teacher's mental and physical health, and student's performance. Teachers are also at high risk for low back pain, neck and shoulder pain, musculoskeletal disorders and cardiovascular problems.

2. MATERIALS AND METHODS

A quantitative technique was used with pre- experimental one group pre test posttest research design. By using the purposive sampling technique 60 samples were chosen who had satisfied inclusion criteria.

The pretest was done on 1st day and assessment of McKenzie therapy among the samples. After that, McKenzie therapy was practiced among the low back pain teachers the post test was conducted after 3 weeks. Each study participants took 20 to 30 minutes to complete the data collection.

Ethical Approval: After obtaining an ethical clearance from the institutional ethical committee (IEC) of Saveetha Institute of Medical and Technical Sciences and a formal permission from the selected school, the study was conducted A structured questionnaire was used to capture demographic variable. Data were gathered and evaluated using descriptive and inferential statistics.

3. RESULT AND DISCUSSION

SECTION- A DEMOGRAPHIC AND CLINICAL CHARACTERISTICS

Demographic and Clinical Characteristics

Distribution of sample according age majority of them 14 (46.7%) in the experimental group and control group belong to the age group 41 – 50 years. Interestingly 9 (30%) belong to the age group 31 – 40 years in both the groups. Regarding education majority 14(46.7%) of them were holding B.Sc, B.Ed degree in experimental group whereas in the control group majority 13(43.3%) of them were holding M.Sc, B.Ed degree.

Marital status shows that 22 (73.3%) of them were married in both the groups. Considering the type of family majority 16 (53.3%) in experimental group and 18 (60%) in control group were from nuclear family. Dietary pattern shows that majority 24 (80 %) in experimental group and 23(6.7%) of them in control group were non vegetarian.

With regard to work experience majority 12 (40%) in experimental group and 13 (43.33% of them in control group have 5 – 10 years of experience. Regarding habit of doing exercise in both groups 8 (26.7 %) of them doing mild exercise and 7 (23.3) of them doing moderate exercise only. But 12 (40 %) in experimental group and 11 (36.7 %) in control group do not do any exercise.

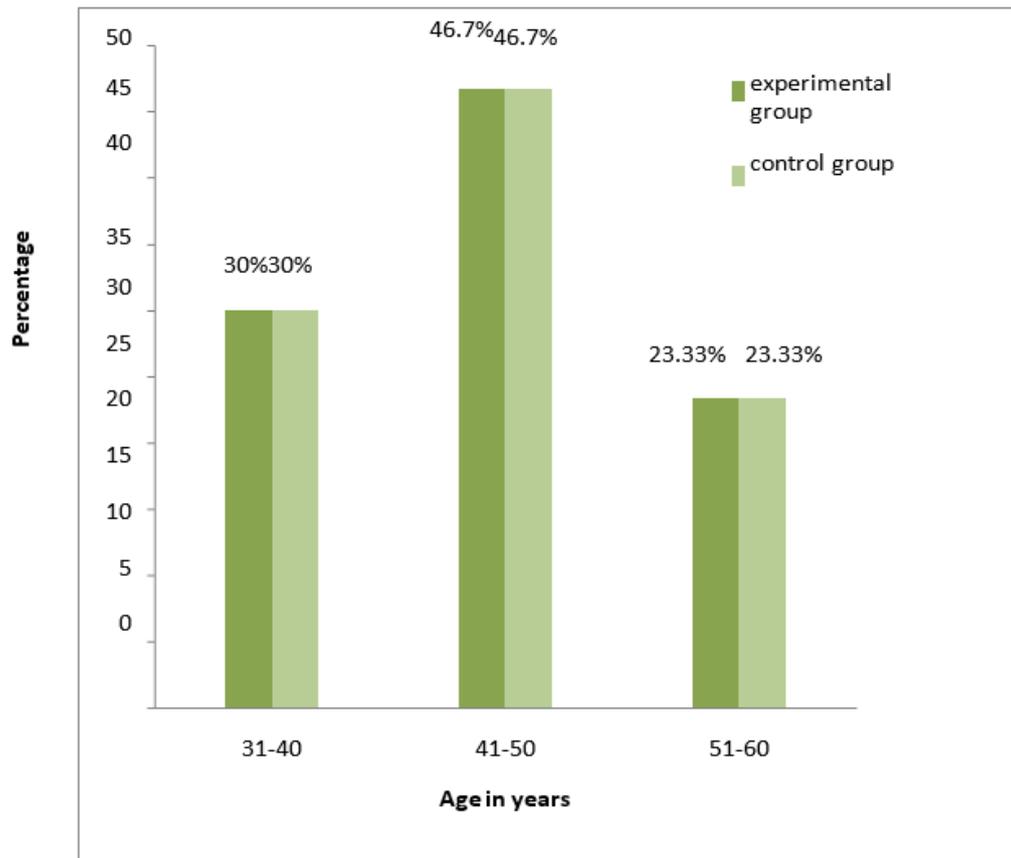


Figure 1: Percentage distribution of level of low back pain among school teachers according to their age

Frequency and percentage distribution of the level of low back pain among school teachers according to clinical variables in experimental and control group.

Table 2: Predicts that with regarding BMI in experimental group 14 (46.7%) of them had 18.5- 24.9 where as in control group 13 (43.3) have the BMI between 15.5 – 18.5

n=60

Clinical variables	Experimental group n=30		Control group n=30	
	f	%	f	%
BMI				
15.5 -18.5	11	36.6	13	43.3
18.5-24.9	14	46.7	12	40
24.9- 30.4	5	16.7	5	16.7
Associated disease				
Pelvic inflammatory disease	8	26.7	9	30
Osteoarthritis	7	23.3	6	20
Kidney disease	7	23.3	7	23.3
Others	8	26.7	8	26.7
Duration of low back pain				
1 - 2 years	10	33.3	9	30
2 – 3 years	14	46.7	12	40
3 – 4 years	3	10	4	13.3
More than 5 years	3	10	5	16.7

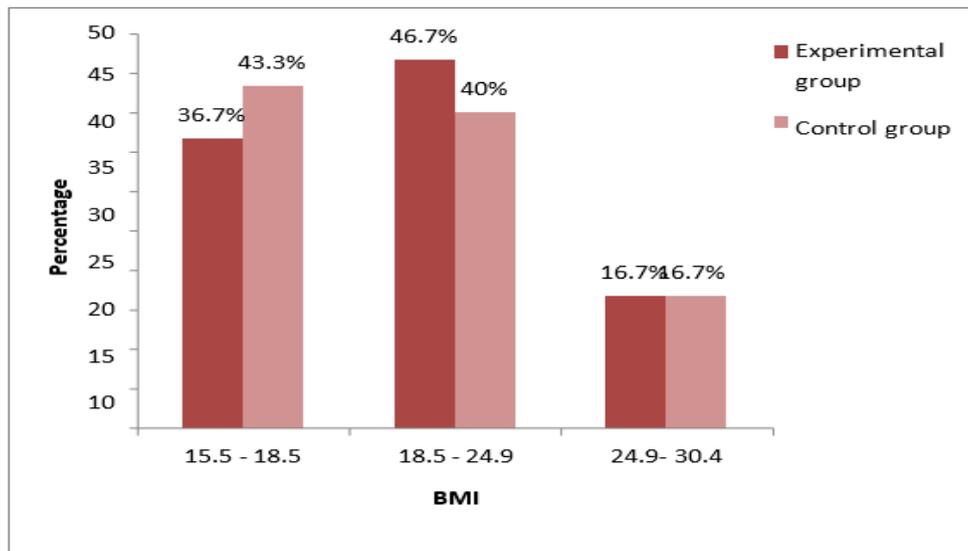


Figure 3: Percentage distribution of level of low back pain among school teachers according their BMI

SECTION - B

Table 3: Comparison of pre test and post test level of low back pain score among schoolteachers in experimental group and control group

(N= 60)

Groups	Tests	Mean	SD	MD	Paired 't'	Level of significant
Experimental Group	Pre test	29.03	9.6	10.6	15.4	0.001*
	Post test	18.5	9.2			
Control Group	Pre test	28.1	10.1	0.4	1.18	0.857#
	Post test	27.7	10.6			

*significant at 0.001 level

not significant

The Table 4 shows that mean post test score in experimental group was 18.5 which was less than the mean pre test low back pain score 29.03.

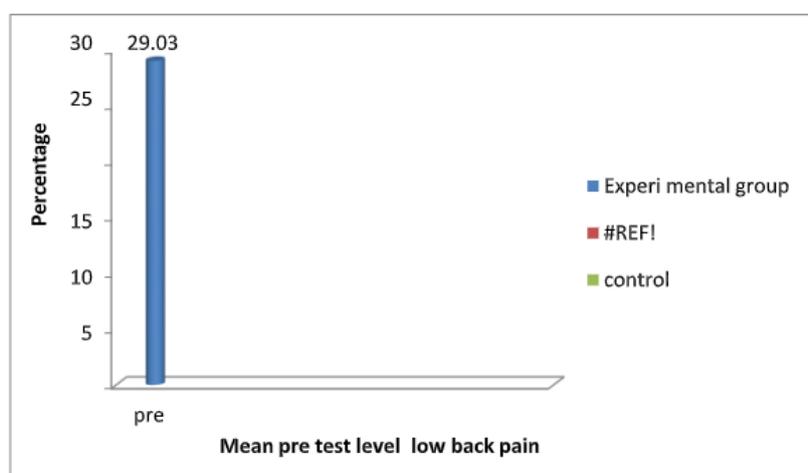


Figure 4 : Percentage distribution of mean pre test score among school teachers in experimental group and control group

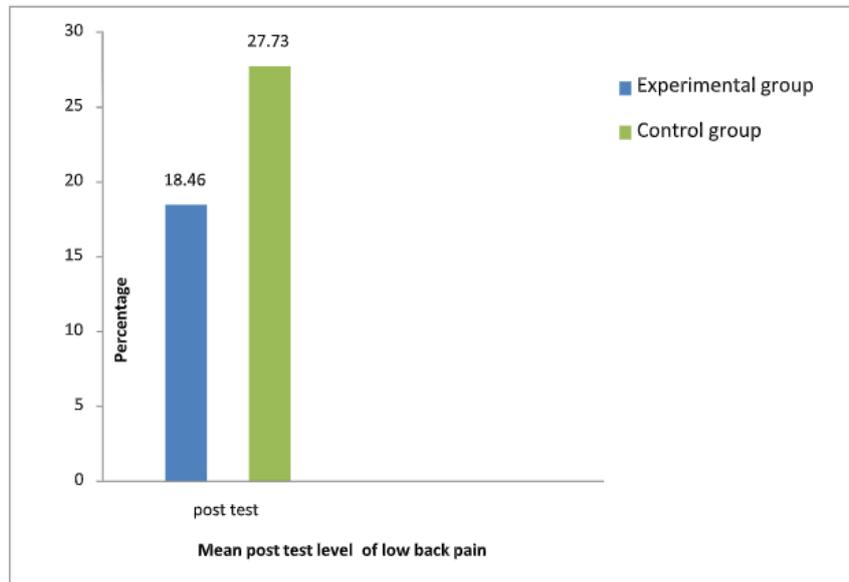


Figure 5: Percentage distribution of mean post test score among school teachers in experimental group and control group

Table 4: Comparison of post test low back pain score among school teachers in experimental group and control group

(N =60)

Group	Mean	S D	Mean Difference	'T' Test	Level Of Significance
Experimental Group	18.46	9.22	8.26	3.64	0.001*
Control Group	27.73	10.58			

*significant at 0.001 level

Table 4 depicts that in the experimental group the mean post test low back pain score 18.46 were lesser than the post test pain score of the control group on 27.73. The obtained ' t' value 3.64 was statistically significant at $p > 0.001$ level .

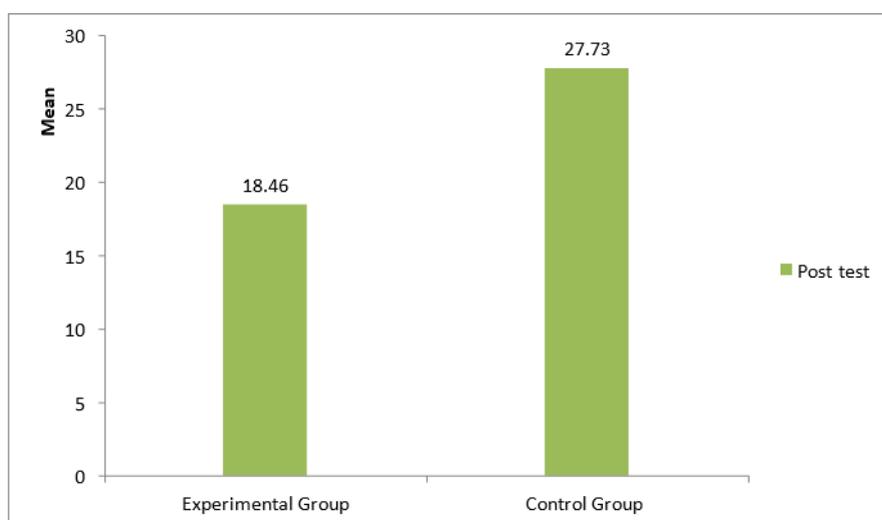


Figure 6 : Comparison of post test level of low back pain score among school teachers in experimental group and control group

SECTION - C

Table 5: Association between the post test level of low back pain among school teachers in experimental; group and control group with their selected demographic variables and clinical variables

(N =60)

Demographic variables	Experimental group n=30				Control group n=30			
	Level of pain				Level of pain			
	Mild	Moderate	χ^2	df	Moderate	Severe	χ^2	df
Age in Year								
31-40 years	7	2			8	2		
41-50years	5	9	9.99*	2	7	7	7.38*	2
51-60 years	1	6			1	5		
Education								
B.A, B.SC	4	2			4	1		
B.Sc.B.Ed	6	8	2.07#	2	7	5	2.83#	2
M.Sc, B.Ed	3	7			5	8		
Marital status								
Married	7	15			12	12		1
Unmarried	6	2	4.54*	1	4	2	0.54#	
BMI								
15.5 -18.5	8	3			9	4		
18.5-24.9	4	10	6.25*	2	6	6	3.70#	2
24.9- 30.4	1	4			1	4		
Associated disease								
Pelvic inflammatory disease	2	6			5	4		
Osteoarthritis	3	4	2.38#	3	3	3	3.61#	3
Kidney disease	3	4			2	5		
Others	5				6			

CONCLUSION

After the McKenzie therapy, only 13(43.3%) of school teachers had mild low back pain and 17 (56.7%) school teachers had moderate low back pain and none of them had severe low back pain. The decreased level of low back pain shows that effectiveness of McKenzie therapy.

Conflict of Interest

Authors declare no conflict of interest

Acknowledgement

All the research participants are sincerely thanked and appreciated by the authors for their assistance in making the study a success.

Ethical Approval

Got Ethical approval from saveetha medical college hospitals.

Finding Support

None

References

- 1) Olivier T. Lam (2018) ,Journal of Orthopaedic and Sports Physical Therapy , Effectiveness of the McKenzie Method of Mechanical Diagnosis and Therapy for Treating Low Back Pain., Volume 48(6) . Retrieved from: <https://www.jospt.org/doi/abs/10.2519/jospt.2018.7562>
- 2) Alessandra Narciso Garcia, et. al (2014) Efficacy of the McKenzie Method in Patients With Chronic Nonspecific Low Back Pain: A Protocol of Randomized PlaceboControlled Trial Physicaltherapy,95(2),267–273. Retrieved : www.bv.fapesp.br/en/pesquisador/92826/alessandra-narciso-garcia/
- 3) Helen A Clare, (2004) A systematic review of efficacy of McKenzie therapy for spinal pain, journal of physiotherapy , 50(4), 209–216. Retrieved from : www.mckenzieinstitute.org/about-us/governance-and-management/helen-clare
- 4) RK Arya, (2014) Low back pain – Signs, symptoms, and management , Indian Academy of Clinical Medicine, 15(1), 30-41.. Retrieved from: medind.nic.in/jac/t14/i1/jact14i1p30
- 5) Mohammad A. Mohseni Bandpei et al ,(2014) ,Occupational Low Back Pain in Primary and High School Teachers: Prevalence and Associated Factors, journal of manipulation and physiological therapeutics,37 (9), 702–708 Retrieved from : chiro.org/.../2014/11/occupational-low-back-pain-in-primary-and-high-schoolteache.
- 6) Alia Alghwiri ,Gregory Marchetti , (2016) Occupational back pain among schoolteachers in Jordan: estimated prevalence and factors associated with selfreported pain and work limitations, International Journal of Occupational Safety and Ergonomics, 24 (3) 341-346 . Retrieved from : <https://www.ncbi.nlm.nih.gov/pubmed/27753293>
- 7) Teresa Kisi Beyen (2013) Low Back Pain and Associated Factors among Teachers in Gondar Town, North Gondar, Amhara Region, Ethiopia, Occupational Medicine & Health Affairs,30(6), 219-224. Retrieved from <https://www.omicsonline.org/.../low-back-pain-and-associated-factors-amongteachers>
- 8) Hafsa Zahid ,et ,al (2017) Frequency Of Low Back Pain Among School Teachers Of Lahore, International Journal of Scientific & Engineering Research, 8(12) ,1776 – 1786. Retrieved <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4724747>
- 9) Nurul Izzah Abdul Samad et al, (2010) Prevalence of Low Back Pain and its Risk Factors among School Teachers ,American Journal of Applied Sciences 7 (5): 634-639 Retrieved from : https://www.researchgate.net/.../46168568_Prevalence_of_Low_Back_Pain_and_its
- 10) Liping Li et al, Work-related Musculoskeletal disorders among school teachers in China, prevalence and occupational factors, British Medical journal,18 (1) Retrieved from : https://www.researchgate.net/.../46168568_Prevalence_of_Low_Back_Pain_and_its
- 11) Burdorf, A. & Jansen, J. P. (2006). Predicting the Long Term Course of Low Back Pain and Its Consequences for Sickness Absence and Associated Work Disability. Occupational and 12.
- 12) Environmental Medicine, 63(8), 522–529 Retrieved from : <https://www.ncbi.nlm.nih.gov/pubmed/16849528>