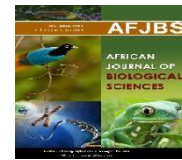


<https://doi.org/10.33472/AFJBS.6.6.2024.419-424>



## African Journal of Biological Sciences



Research Paper

Open Access

### “A STUDY TO ASSESS THE EFFECTIVENESS OF ACHARYA TECHNIQUE ON REDUCTION OF LOW BACK PAIN AMONG THE STAFF NURSES.”

Bergeri Akkamahadevi Subbaiah<sup>1</sup>, Nikhil Ajit Jadhav<sup>2</sup>

1. Clinical Instructor, Department of Psychiatric Nursing, Bharati Vidyapeeth (Deemed to be University) College of Nursing, Sangli, Maharashtra India 416414.
2. Clinical Instructor, Department of Medical Surgical Nursing, Bharati Vidyapeeth (Deemed to be University) College of Nursing, Sangli, Maharashtra India 416414.

**Corresponding Author:** Bergeri Akkamahadevi Subbaiah, Clinical Instructor, Department of Psychiatric Nursing, Bharati Vidyapeeth (Deemed to be University) College of Nursing, Sangli, Maharashtra India 416414.

#### ABSTRACT

**Background:** Backpain is not simply physical pain but also an emotional process. An unpleasant physical, emotional, and subjective sensation known as pain might indicate real or potential tissue damage (International Association of Pain). For a nurse the effect of low back pain includes manual handling of patients, such as moving and repositioning of the patient using their body strength. The study objectives are to assess the existing level of low back pain among the staff nurses in experimental group and control group. To assess the level of low back pain among the staff nurses after Acharya Technique. To compare the post-test scores between experimental group and control group. **Method:** Study was conducted by using quasi experimental research design. 60 samples were selected by using non-probability convenient sampling method. Established the content validity of the tool from 20 experts of different areas. Corrections were made as per the suggestion and the final tool was prepared. Standardized numerical pain scale was selected as the tool for assessing pain score which is universally accepted. The reliability co-efficient was done by using inter-rater method and ‘r’ was calculated by Karl Pearson formula and found that the tool was reliable as the ‘r’ value is 0.86. **Result:** Total mean score in control group was 5.4 and that of experimental group was 3.4 with p value 0.000758 which is significantly effective. **Conclusion:** The study generates the research hypothesis that there was significant difference in the low back pain among the experimental and control group. Researcher concluded that the Acharya Technique procedure was effective in reducing the level of low back pain among the staff nurses.

**Keywords:** Assess Effectiveness Acharya technique Low back pain nurses’ hospital

Article History

Volume 6, Issue 6, 2024

Received: 20 Feb 2024

Accepted: 23 Mar 2024

doi:10.33472/AFJBS.6.6.2024.419-424

## INTRODUCTION

Health is a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity (WHO). However, any change in these states could be the cause of annoyance, a lack of motivation at work, or a hindrance to daily activities<sup>1</sup>. Back pain is not simply physical pain; it is also an emotional process. Back pain is an all-too-common issue that can range from a continuous, dull ache to an abrupt, incapacitating ache.<sup>1</sup> It might appear suddenly as a result of an accident, a fall, or carrying something heavy, or it can appear gradually as the result of changes to the spine brought on by ageing<sup>3</sup>. There are both pathological and general causes of low back discomfort. The pathogenic reasons include fracture, metabolic bone disorders, inflammatory arthropathies, and degenerative diseases of the spine. Non-specific or common low back pain is made worse by lever activities like vacuuming or working with the arms raised above the body, by static loading of the spine (prolonged sitting or standing), and by levered postures (bending forward). When the spine is balanced by many forces, such as walking, frequently switching positions, and stretching activities, this non-specific low back discomfort subsides (Anthony, H.W. et al. 2016)<sup>2</sup>. The term "lower back pain" refers to any discomfort felt in the lower part of the spinal cord or lumbar spine. The majority of the upper body's weight is supported by this area. Additionally, the most common cause of disability related to one's job is this particular type of lower back pain, which affects 80% of adults. Fortunately, there are numerous efficient remedies for curing lower back pain<sup>4</sup>. For nurses, the effects of low back pain include missed work, a higher chance of developing chronic conditions, as well as related financial and personal expenses. The strain of standing up from a chair and lifting patients will affect nurses who have chronic back pain. The primary source of these injuries for direct care nursing workers is manual handling of patients, such as moving or repositioning a patient using their own body strength<sup>5</sup>. Numerous back conditions can be made more bearable by conditioning through flexibility and back-strengthening exercises. It strengthens the muscles, ligaments, and tendons that support the spinal column. Most back workouts emphasize working not only the back but also the gluteus, hip, and abdominal muscles. Because they give the spine strong support, maintain its alignment, and enable movements that extend the spine, these powerful core muscles can relieve back pain. As one of the nursing interventions to lessen low back pain, exercise is absolutely essential (Peter Ullrich, 2009)<sup>6</sup>. The lower back and spine serve as a conduit for important brain structures and are physiologically capable of acting as a crane for lifting and a crankshaft for walking. A sizable and intricate group of muscles cooperate to maintain the spine, keep the body upright, and enable the body's trunk to move, twist, and bend in various directions. Extensor muscles (erector spinae, gluteal muscles), flexor muscles (abdominal muscles), and oblique muscles are the main muscles in the lower back (Peter, F.U. 2015)<sup>2</sup>. To have a strong and powerful back, proper maintenance and frequent exercise are necessary. The spinal column and the muscles, ligaments, and tendons that support it can all be strengthened with a variety of back strengthening exercises. Most of these back exercises emphasize working the gluteus, hip, and abdominal muscles in addition to the back. An exercise-conditioned spine is protected by a strong, well-conditioned back, much as reinforced steel can support greater weight than sheet aluminium<sup>6</sup>. Medication, mobilization, stretching exercises, stabilization exercises, ergonomic counselling, and home cures can all be used to treat low back pain.<sup>12,13</sup> Exercise helps to prevent and treat low back pain by enhancing flexibility and strengthening the back muscles. Stretching exercises were useful in reducing low back discomfort, according to literature evaluations. The Acharya Method is a set of five quick stretching movements that might help to relieve low back discomfort and strengthen the

lower back muscles. Nurses can perform this exercise for 3-5 minutes each day for seven days to strengthen their lower back muscles and lessen low back pain. (Acharya, SM.2014)<sup>2,14</sup>

## MATERIALS AND METHOD

Quantitative quasi experimental research design with 60 samples divided into experimental and control group; each group comprises of 30 samples. Non probability convenient sampling technique was used.. According to the inclusion and the exclusion criteria samples were selected. The researcher selected the 60 samples i.e., staff nurses with low back pain and who doesn't have any spinal and heart diseases, restricted movement, surgical intervention in knee and other orthopedic problems. Before performing the procedure, the explanation was given to each and every sample related to what was actually we were going to do. Preliminary preparation of the unit was done by arranging separate room with beds for performing exercise. Formal intimation to ward incharges was given to assemble staff nurses as convenient groups and asked the nurses to lie on bed and take a deep breath and get relaxed. All the five steps of Acharya technique were demonstrated and performed on the samples for twice a day for seven days. Pain was assessed by using Numerical pain scale on first day and eighth day.

## RESULTS

**Table No.1: - Frequency and percentage wise distribution of demographic variables**

n = 30 +30

Demographic variables		Experimental group		Control group	
		Frequency	Percentage	Frequency	Percentage
Age (in years)	25 – 35	8	26.67 %	12	40 %
	35 – 45	14	46.66 %	12	40 %
	45 – 55	8	26.67 %	6	20 %
Gender	Male	11	36.67 %	12	40 %
	Female	19	63.33 %	18	60 %
Type of family	Nuclear	20	66.67 %	23	76.67 %
	Joint	10	33.33 %	7	23.33 %
Marital status	Married	15	50 %	17	56.66 %
	Unmarried	8	26.67 %	8	26.67 %
	Widows	6	20 %	5	16.67 %
	Divorced	1	3.33 %	0	0
Monthly income (in RS)	10000 and below	2	6.67 %	5	16.67 %
	11000- 25000/-	21	70%	22	73.33 %
	26000- 34000/-	7	23.33 %	3	10 %
	35000 and above	0	0	0	0
Educational qualification	ANM	6	20 %	7	23.33 %
	GNM	13	43.33 %	11	36.67 %
	B.Sc. Nursing	11	36.67 %	12	40 %
	M.Sc. Nursing	0	0	0	0
Duration of low back pain	6- 12 months	12	40 %	15	50 %
	13- 24 months	14	46.67 %	11	36.67 %
	More than 24 months	4	13.33 %	4	13.33 %
Total years of clinical experience	1-6 years	8	26.67 %	13	43.33 %
	7-12 years	9	30 %	10	33.33 %
	13-18 years	5	16.66 %	2	6.67 %
	18 and above	8	26.67 %	5	16.67 %

Among the total sample, In experimental group, 26.67 % of sample belongs to age group between 25-35years, 46.66 % between 35-45 years and 45-55years with 26.67 % whereas in control group, 40% between 25-35 years, 40% between 35-45 years and 45- 55 years with 20%. Regarding the gender of the staff nurses, in experimental group 36.67 % samples are male and 63.33 % are female whereas in control group 40 % are male and 60 % are female. Regarding the type of family, in experimental group 66.67 % samples are from nuclear family and 33.33 % from joint family.Regarding the marital status of the staff nurses, in experimental group 50% samples are married, 26.67% are unmarried, 20% are widows and 3.33% are divorced whereas in control group 56.66% samples are married, 26.67% are unmarried and 16.67% are widows.Regarding the monthly income of staff nurses, in experimental group 6.67% samples having monthly income of Rs10000 and below, 70% samples between Rs.11000-25000 and 23.33% samples between Rs.26000-34000 whereas in control group 16.67% samples having monthly income of Rs10000 and below, 73.33% samples between Rs.11000-25000 and 10% samples between Rs.26000-34000. Regarding educational qualification of the staff nurses, in experimental group 20%samples has completed ANM nursing, 43.33% completed GNM nursing and 36.67% completed B.Sc. Nursing. Whereas in control group 23.33% completed ANM nursing, 36.67% completed GNM nursing and 40% completed B.Sc. Nursing. Above table shows that in experimental group 40% samples having low back pain since 6-12 months, 46.67% since 13-24 months and 13.33% having pain more than 24 months. Whereas in control group 50% since 6-12 months, 40% since 13-24 months and 40% having pain more than 24 months. Regarding total years of clinical experience of the staff nurses, in experimental group 26.67% samples having clinical experience between 1-6 years, 30% between 7-12 years, 16.66% between 13-18 years and 26.67% having clinical experience more than 18 years. whereas in control group 43.33% between 1-6 years, 33.33% between 7-12 years, 6.67% between 13-18 years and 16.67% having clinical experience of more than 18 years.

**Table No.2: Frequency and percentage distribution of level of low back pain before Acharya technique** n = 30 +30

Level of pain	Experimental group		Control group	
	Pre-test			
	F	%	F	%
1-3 (Mild Pain)	5	16.67 %	8	26.67 %
4-6(moderate pain)	13	43.33 %	14	46.66 %
7-10(Severe Pain)	12	40 %	8	26.67 %

**Result:** above table shows that, in pre-test there are 16.67% samples having mild pain, 43.33% moderate pain and 40% severe pain in experimental group before intervention of Acharya Technique. Whereas in control group 26.67% samples has mild as well as severe pain and 46.66% moderate pain before intervention of Acharya Technique. Hence it is concluded that, majority of samples faces moderate low back pain among staff nurses in experimental as well as in control group.

**Table No.3: Frequency and percentage distribution of level of low back pain after Acharya technique** n = 30 +30

Level of pain	Experimental group		Control group	
	Post-test			
	F	%	F	%

0 (No pain)	3	10 %	0	0
1-3 (Mild Pain)	15	50 %	7	23.33 %
4-6(moderate pain)	12	40 %	11	36.67 %
7-10(Severe Pain)	0	0	12	40 %

**Result:** above table shows that, in pre-test there are 16.67% samples having mild pain, 43.33% moderate pain and 40% severe pain in experimental group before intervention of Acharya Technique. Whereas in control group 26.67% samples has mild as well as severe pain and 46.66% moderate pain before intervention of Acharya Technique. Hence it is concluded that, majority of samples faces moderate low back pain among staff nurses in experimental as well as in control group.

**Table 4: Comparison of post-test scores between experimental group and control group.**

n = 30 +30

Post test	Mean	Standard deviation	D.F.	t-test value	P.value
Experimental group	3.4	2.110728	58	-3.55561	<b>0.000758</b> <0.05
Control group	5.366667	2.173244			

#### RESULT:

The above table shows that, in post-test experimental group has mean of 3.4 with SD of 2.110728 and control group has mean of 5.366667 with SD of 2.173244. As per calculation D.F. is 58, t-test value is -3.55561 and P value is 0.000758 which is less than 0.05. It shows that Acharya Technique is effective in reducing low back pain among the staff nurses.

#### DISCUSSION

The present study intended to find out the effectiveness of Acharya Technique on level of low back pain among the staff nurses in selected hospitals of Sangli, Miraj, Kupwad Corporation area. The findings of present study are discussed with reference to the objectives, hypothesis stated and with findings of other similar studies. In this study total 60 samples were taken. Out of 60 samples, 30 in experimental group and 30 in control group. The study shows that there is reduction in level of low back pain compared to the control group. Acharya Technique had a positive role in reducing back pain of the staff nurses working.

#### CONCLUSION

It has been noted that low back discomfort is prevalent among nurses. The results of this study demonstrated the effectiveness of the Acharya Technique in lowering low back pain in nurses. The Acharya Technique is a non-pharmacological method that can be used to reduce low back pain and the impairment caused by it. The study's conclusions indicated that the Acharya Technique can be accepted as a treatment for low back pain among nurses and included in more extensive continuing education programs.

The above table shows that, in post-test experimental group has mean of 3.4 with SD of 2.110728 and control group has mean of 5.366667 with SD of 2.173244. As per calculation. D.F is 58, t-test value is -3.55561 and P value is 0.000758 which is less than 0.05. It shows that Acharya Technique is effective in reducing low back pain among the staff nurses.

**Conflict of interest :** Nil

**Source of funding:** Self

**REFERENCES**

1. Yadav LR, Sharma B. A Quasi-Experimental Study to Assess the Impact of the Acharya Technique on Lower Back Pain among Nurses Working in ICU and OT at Selected Hospitals, Gurugram. *International Journal of Science and Research (IJSR)* ISSN: 2319-7064 (2018)
2. Amutha A. Effectiveness of acharya technique on low back pain among nurses working in ICU and OT at Selected Hospitals, Chennai (Doctoral dissertation, MA Chidambaram College of Nursing, Chennai). (2016)
3. Catherine A. Effectiveness of acharya technique on reduction of back pain among the industrial workers (Doctoral dissertation, Madha College of Nursing, Chennai). (2017)
4. Samal B, Lenka A, Asokan R. Effectiveness of Spinal Extension Exercises on Lower Back Pain among Staff Nurses Working in Tertiary Care Hospital, Bhubaneswar, Odisha. *International journal of orthopedic nursing*. 6(2). (2020)
5. Kalyani CV. Assess prevalence of low back pain and its effect in daily activities among staff nurses. *International Journal Recent Science Research*. 2019 Feb; 1:20-3.
6. Anisha R. A study to evaluate the effectiveness of stretching exercise in reduction of low back pain among staff nurses working in a selected hospital, Kanyakumari district (Doctoral dissertation, Global College of Nursing, Kanyakumari). 2017
7. Adhikari S., & Dhakal G. (2015). Prevalent Causes of Low Back Pain and its Impact among Nurses Working in Sahid Gangalal National Heart Centre. *Journal of Nepal Health Research Council*. <https://doi.org/10.33314/jnhrc.v0i>
8. Sidhant S, Dani P” (January 2019): A Study to Assess the Effectiveness of Eucalyptus Oil on Knee Pain among Osteoarthritis Patients in Selected Areas of Sangli, Miraj and Kupwad Corporation” *Indian Journal of Public Health Research and Development*, 10(7):267
9. Knowledge, Self-efficacy and Practice on Prevention of Work-Related low Back Pain among Staff Nurses. *Indian Journal of Forensic Medicine & Toxicology*. 2020 Oct 29;14(4):551-6.
10. Hidayati Bunga DNF, Harmayetty , Asmoro CP. The effectiveness of back exercise for the reduction of low back pain prevalence on the emergency room nurses. *Indian Journal of Public Health Research and Development*. 2019 Sept;10(9):1529-1534. doi: 10.5958/0976-5506.2019.02666.4
11. Kanakkarthodi R, Baby BE, Anapattath AN, Valappil JK, Afsar A, Jakribettu RP, Binub K. Low Back Pain Among Nurses in a Tertiary Care Teaching Hospital at Malappuram Kerala. *Cureus*. 2022 Nov 17;14(11)
12. Dani R, Kale A, Dani P. Effect of Ice Pack Application on Pain During Venipuncture among the Children Admitted in Selected Pediatric Units of Sangli, Miraj, Kupwad Corporation Area. *Indian Journal of Public Health*. 2019 Aug;10(8).
13. Mrs Manisha Sunil Kulkarni<sup>1</sup> , Mrs. Sindhu Rajesh Gaikwad(2021).effectiveness of planned teaching programme on knowledge and practices regarding body mechanics and handling of patient among multipurpose health workers. *journal of cardiovascular disease research*.12(3).
14. Dhudum B, Bhore NR. Intradialytic Stretching Exercises on Muscle Cramps: A Systematic Review. *Journal of Critical Reviews*. 2020;7(15):4390-8.