

# 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

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**Abstract:** Background of the study: Lower back pain (LBP) estimated to affect 90% of the universal population. In India, nearly 60% of the people have lower back pain at sometimes in their lives. The stretching exercise plan a vital role in relieve from lower back pain. (Arya, R. K., 2014). Aims of the Study: To reduce the lower back pain among nurses working in ICU and OT. Objective: To assess the level of lower back pain among nurses before the intervention in terms of Pre-test pain scores. To assess the effectiveness of Acharya Technique on the level of lower back pain among nurses, in terms of Post-test pain scores. To find association between Post interventional level of lower back pain with the selected demographic and clinical variables. Method: The quasi-experimental study was conducted among 60 nurses working in ICU and OT, were selected by non –probability purposive sampling technique using self-administrating method. Among 60 nurses, 30 nurses in experimental group (15-ICU, 15-OT) and 30 nurses in control group (15-ICU, 15-OT) were assigned. Pre-test was conducted for both the group. After that intervention for 15 days on experimental group was implemented. After that a post-test was conducted and nurses are advice to continue the Acharya technique. Results: Effectiveness table results reveals that in experimental group, lower back pain pre-test & post-test mean difference score was 3.067(61.60%) for ICU Nurses and 2.067 (41.94%) for OT Nurses shows an effectiveness of Acharya technique. There was a statistically Significant difference between pre and post test score for lower back pain among nurses in experimental group at (p=0.001) level. Conclusion: Study results reveals that Acharya technique was an effective measure for lower back pain among nurses so that we can used this technique as a health care measure for lower back pain, not only for nurses but also for all health care workers and for all who suffered with lower back pain.

**Keywords:** Acharya Technique, Lower Back pain (LBP), Demographical and clinical variables

## 1. Introduction

Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. (WHO)<sup>1</sup> But any fluctuation in these states may originate and trigger irritation, lack of interest in work. Or an obstruction in day to day life practices. Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage (IASP, 2019)<sup>2</sup>. Lower Back Pain (LBP) is defined as discomfort in the spinal area below the level of 12th rib and above the gluteal folds experienced at least once a month, with or without radiation into the leg.

All age group people from children to the elderly were affected with lower back pain, and are a very frequent reason for medical consultations. The Global Burden of Disease (2010) study determined that low back pain is among the top 10 diseases and injuries that account for the highest number of DALYs worldwide. Over all the lower back pain is the main cause of limit activity and working absenteeism, imposing a high economic burden on individuals, families, communities,

industry, and governments. Low back pain was identified as the most common cause of disability in young adults, with more than 100 million workdays lost per year In the United Kingdom. (Global Burden of Disease, 2010)<sup>3</sup>

Globally, the prevalence of LBP is 60-80% among general population. In which 10-50% of them receive stretching exercise as treatment for lower back pain. Lower back pain estimated to affect 90% of the universal population. In India, nearly 60% of the people have lower back pain at sometimes in their lives. (Physiopedia, 2020)<sup>4</sup>

## 2. Material and Method

### Research Design

The Quasi-experimental design was used for this study.

### Statement of Problem:

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.

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**Aims of the Study:**

To reduce the lower back pain among nurses working in ICU and OT

**Objective:**

- 1) To assess the level of lower back pain among nurses before the intervention in terms of Pre- test pain scores.
- 2) To assess the effectiveness of Acharya Technique on the level of lower back pain among nurses, in terms of Post-test pain scores.
- 3) To find association between post interventional level of lower back pain with the selected demographic and clinical variables.

**Variables of the Study:** There was two type of variables as follows.

**Independent Variable:**

The independent variable in this study was Acharya Technique (Stretching exercise)

**Dependent Variables:**

The dependent variable of this study was lower back pain among nurses working in ICU and OT.

**Assumptions:**

- 1) Long hours of standing in ICU and OT may cause lower back pain among staff nurses.
- 2) Acharya Technique will be effective in reducing lower back pain among staff nurses working in ICU and OT.
- 3) Lower back pain among staff nurses will be influenced by demographic and clinical variables.

**Delimitations:**

- 1) The sample size was limited to 60 nurses.
- 2) The study limited to the nurses working in selected setting (ICU and OT only).
- 3) The duration of study will be limited to two weeks.

**Conceptual Framework:**

The conceptual framework for this study is derived from "The General system Theory" given by Ludwig Von Bertalanffy

**Setting of the Study:**

This study was conducted in the Artemis Hospital, Gurgaon

**Samples**

Both female and male nurses working in ICU and OT with complaints of lower back pain, who fulfilled the inclusion criteria, were selected as samples. Total 60 nurses, 30 nurses in experimental group (15-ICU, 15-OT) and 30 nurses in control group (15-ICU, 15-OT) were assigned

**Sampling Technique**

In this study self-administered, Non Probability Purposive sampling technique was used.

**Inclusion Criteria**

- 1) Both female and male registered nurses who will be in the age group of 22 to 55 years.
- 2) Having complaints of lower back pain since 6 months.
- 3) Who knows English and Hindi.
- 4) Working in ICU and OT for more than 6 months.
- 5) Willing to participate in the study.
- 6) Nurses who are not on any interventional therapy for lower back pain.

**Exclusion Criteria:**

- 1) Spinal or other Orthopaedic pathology and surgical intervention.
- 2) Nurses working in general wards.
- 3) Nurses who were on any other interventional therapy for lower back pain.

**Validity of the Tool:**

The Numerical Rating Scale (NRS) is a valid and reliable scale to measure pain intensity. This is widely used for pain assessment in the field of nursing.

The content validity of the tool was validated by expertise from Medical and nursing field, field of Nursing and Doctors. They had expertise in developing such instruments and the necessary modification was done accordingly.

**Reliability of the Tool:**

The reliability of the Numerical Rating Scale [NRS] ( $r = 0.92$ )

**Data Collection Procedure:**

The main study was conducted from 1.12.2019 to 17.12.2019, between 7:45am to 8:15 pm at Artemis, hospital, Gurugram. Permission was obtained from Medical and Nursing Superintendent, ethical clearance committee, and Incharge of all ICUs and OTs. Total 60 nurses who were in the morning and afternoon shift in ICU and OT, fulfilled inclusion criteria were selected as samples of the study using non –probability purposive sampling technique. The ICU and OT in-charge were approached for allowing collecting data from the nurses. The nurses working in ICUs and OTs were informed about the purpose and the process of the study and informed consent was obtained from them. Then pre-test was conducted. After the pre-test, intervention as Acharya Technique was implemented for 15 days. After that a post-test was conducted and nurses are advice to continue the Acharya technique for good health and practice on patients with lower back pain. Among 60 nurses, 30 nurses in experimental group (15-ICU, 15-OT) and 30 nurses in control group (15-ICU, 15-OT) were assigned.

**3. Results and Discussion**

**Table 1:** Mean and Standard deviation score of lower back pain among nurses working in ICU and OT

Group		Lower Back Pain Score				Mean Difference	Paired 't' test
		Pre test		Post test			
		Mean	SD	Mean	SD		
Experimental Group (n=30)	ICU (n=15)	4.73	1.335	1.67	1.676	3.067	t=7.122 p=.000 *
	OT (n=15)	4.47	1.033	2.40	1.957	2.067	t= 7.278 p=.000*
Control Group (n=30)	ICU (n=15)	3.87	1.302	3.67	1.028	.193	t=1.660 p=.065NS
	OT (n=15)	4.27	1.280	4.03	.990	.233	t=1.947 p=.053NS

(p=0.05, \* - denotes Significant at 5% level), NS=Not Significant

Table:1 reveals that in ICU experimental group the pre test mean score of lower back pain was 4.73 with the SD of 1.335

mean and post test mean scores of lower back pain 1.67 and SD of 1.676 among nurses in ICU. In OT, the pre test mean score was 4.47 with SD 1.033 and post test score was 2.40 with 1.957.

In control group, pre test mean score of lower back pain was 3.87 with the SD 1.302 and in post test the score was 3.67 the SD of 1.028 in ICU. In OT the pre test mean score was 4.27 with the SD of 1.280 and in post test score was 4.03 with the SD of .990.

There was a statistically significant difference between pre and post test score for lower back pain among nursed in experimental group at (p=0.001) level.

Above findings reveal that Acharya Technique was effective in reducing lower back pain among experimental group of nursed working in ICU and OT.

**Table 2:** Effectiveness Scores of lower back pain among nurses working in ICU and OT in terms of Pre test & Post test

Lower Back Pain Score									
Group		Pre Test			Post Test			Effectiveness	
		Mean	SD	Mean %	Mean	SD	Mean %	Mean Difference (Pre- Post test)	Mean % difference (Post-Pre)
Experimental Group (n=30)	ICU (n=15)	4.73	1.335	95.00	1.67	1.676	33.40	3.067	61.60
	OT (n=15)	4.47	1.033	89.94	2.40	1.957	48.0	2.067	41.94
Control Group (n=30)	ICU (n=15)	3.87	1.302	77.40	3.67	1.028	73.40	0.193	4.00
	OT (n=15)	4.27	1.280	85.40	4.03	0.990	80.60	0.233	4.80

Here: (p=0.05)

Table.2 reveals that in experimental group ,lower back pain pre test & post test mean difference score was 3.067(61.60%) for ICU Nurses and 2.067 (41.94%) for OT Nurses shows an effectiveness of Acharya technique.

This table reveals that Acharya technique is an effective measure for lower back pain among nurses so that we can used this technique as a health care measure for lower back pain, not only for nurses but also for all health care workers and for all who suffered with lower back pain.

#### 4. Discussion

The findings of the study as per the objectives are,

- 1) To assess the level of lower back pain among nurses before the intervention in terms of pre-test pain scores.
- 2) To assess the effectiveness of Acharya Technique on the level of lower back pain among nurses, in terms of post-test pain scores.

Table 1 reveals that in ICU experimental group the pre test mean score of lower back pain was 4.73 with the S.D. of 1.335 mean and post test mean scores of lower back pain 1.67 and S.D of 1.676 among nurses in ICU. In OT, the pre test mean score was 4.47 with S.D 1.033 and post test score was 2.40 with 1.957.

In control group, pre test mean score of lower back pain was 3.87 with the S.D 1.302 and in post test the score was 3.67 the S.D of 1.028 in ICU. In OT the pre test mean score was 4.27

with the S.D. of 1.280 and in post test score was 4.03 with the SD of .990.

Table 2 reveals that in experimental group ,lower back pain pre test & post test mean difference score was 3.067(61.60%) for ICU Nurses and 2.067 (41.94%) for OT Nurses shows an effectiveness of Acharya technique. This table reveals that Acharya technique was an effective measure for lower back pain among nurses so that we can used this technique as a health care measure for lower back pain, not only for nurses but also for all health care workers and for all who suffered with lower back pain.

The above study findings were supported the study conducted by Nirmala M Emmanuel, Punitha Ezhilarasu and Anu Bharathy Bheemaroo (2015),a cross-sectional study to assess the prevalence of Low Back Pain among nurses, their risk status and association between Low Back Pain and selected demographic and clinical variables. Total 1284were determined that 53.4 % of the nurses had Low Back Pain and 17.1 % among them were at high risk status. The study found that there was a significant association (p<0.001) between LBP and age, body mass index, experience, and place of work. Results shows that Low Back Pain is common among nurses. Periodic screening of nurses for low back pain and referring the high risk nurses for immediate medical assistance may prevent complications related to low back pain and improve the functional ability of the nurses.

There was a statistically Significant difference between pre and post test score for lower back pain among nursed in experimental group at ( $p=0.001$ ) level. Above findings reveal that **Acharya Technique** was effective in reducing lower back pain among experimental group of nurses working in ICU and OT.

This study findings reveals that there was a statistically significant association found between the level of lower back pain among nurses working in OT with Clinical variable such as Since how long do you have lower back pain?. Describe the characteristics of your pain? How frequent you experience lower back pain?. Which of the following factors often contribute to lower back pain? , and Lower back pain makes you feel like? at 5% level of Significance.

There was not significant association found between the level of lower back pain with other demographic variable such as For how many hours you feel lower back pain per day?, at 5% level of significance.

There was a statistically significant association found between the level of lower back pain among nurses working in ICU with Clinical variable such as Since how long do you have lower back pain?, Describe the characteristics of your pain?, How frequent you experience lower back pain? and Lower back pain makes you feel like? at 5% level of significance.

There was a statistically Significant association found between the level of low back pain among nurses working in ICU with demographic variable such as Age in years, Gender, BMI, Religion, Monthly income, Dietary Habit, Marital Status, Type of family, Educational qualification, Present Working Area, Total years of clinical experience in OT, at 5% level of Significance.

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**Conflict of Interest:** Nil

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