

Original Research Article

Effect of the Acharya approach on Nurses working in the ICU and OT of particular hospitals, who suffer from lower back pain

Anusaya Behera^{1*}, Sweta Rani Dalei², Monalisa Mall³, Dr. Anasuya Pattanayak⁴, Reena Singh⁵, Subhadeep⁶, Bhawana⁷, Samriddhi⁸, Suranjana⁹, Pratyusha¹⁰

^{1*} Asst. Prof, Department of Obstetrics and Gynaecological Nursing, Kalinga Institute of Nursing Sciences, KIIT Deemed to be university, Bhubaneswar.

²Tutor, Department of child health Nursing, Kalinga Institute of Nursing Sciences, KIIT Deemed to be University, Bhubaneswar.

³Tutor, Department of Obstetrics and Gynaecological Nursing, Kalinga Institute of Nursing Sciences, KIIT Deemed to be university, Bhubaneswar

⁴Head, Department of Community Health Nursing, Kalinga Institute of Nursing Sciences, KIIT Deemed to be university, Bhubaneswar.

⁵Asst. Prof, KINS, Department of Mental Health Nursing, Kalinga Institute of Nursing Sciences, KIIT Deemed to be university, Bhubaneswar.

^{6,7,8,9,10} Students B.Sc (n) 4th year,,KINS,KIIT-DU, Bhubaneswar

***Corresponding Author:-** Anusaya Behera

*Asst. Prof, Department of Obstetrics and Gynaecological Nursing, Kalinga Institute of Nursing Sciences, KIIT Deemed to be university, Bhubaneswar.

ABSTRACT-

BACKGROUND-

Nursing professionals are the health care warriors and main asset of Health care settings working day and night, devoting 24×7 hours for the care of the patients. Health is an important parameter for all. Nurses are being suffering with the health care issue like low back pain related to long standing hours, and extensive duty in clinical areas Being healthy is a state of physical, mental, and social well-being and goes beyond simply being free of illness or disability. (^1) However, any change in these moods could be the cause of irritation, a lack of enthusiasm in one's job, or a hindrance to daily activities.

MATERIALS AND METHODS-

For the study, 60 nurses from the OT and ICU were chosen. A self-structured questionnaire was used to gather information on sociodemographics, clinical data, a scale for quantifying pain, and the modified Rolland Morris Disability Index. To analyse the data, descriptive and inferential statistics were employed.

FINDINGS-

The study findings revealed that, 7 (46.6%) ICU Nurses had mild pain 8(53.3%) OT Nurses had moderate pain, 6 (40.9%) nurses have chronic pain in ICU and 6(40.9) have inflammatory pain in OT. In the ICU, nurses' mean low back pain scores ranged from 6.27 (SD: 1.16) to 2.87 (SD: 0.64) on the pretest and posttest, respectively. In OT, the mean score prior to testing had a standard

deviation of 0.62 while the mean score after testing had a standard deviation of 3.27. Among a group of experimental nurses who worked in the ICU and OT, the Acharya Technique proved successful in alleviating low back pain.

CONCLUSION-

The results of the current study showed that the Acharya approach is a practical and affordable method for reducing low back pain in medical professionals.

Key words- Acharya technique, lower back pain

BACKGROUND-

Nearly 60% of Indians experience low back discomfort at some point in their life, which frequently results in noticeable disability. Due to specific employment conditions like strain and manual lifting of heavy objects, low back discomfort is a growing public health concern around the globe. The nursing profession has been found to be particularly vulnerable to WRMDs, or work-related musculoskeletal disorders. Nurses who collaborate with other medical professionals on a Healthcare facilities with multidisciplinary medical teams are vulnerable to WRMDs.. Nurses who regularly stretch improve their functional performance, reduce low back pain, and feel more at ease at work. (Mathew, A. et al. 2015). (^1)

The most costly musculoskeletal condition that nurses have is low back pain. Nursing professionals have the greatest claim rates, according to studies on workers' compensation claims connected to low back discomfort. According to an estimate for the year 2012, A lot of nurses experience low back pain. In India, at least 90% of nurses who work in hospitals and nursing homes report experiencing low back discomfort. For every 10,000 nurses, low back discomfort resulted in 181.6 missed work days in nursing facilities and 90.1 missed work days in hospitals. (Lin, P.H. et al. 2012). (^2)

Lower back discomfort is more widespread among nurses who work in the ICU and OT. Medication, mobilisation, stretching exercises, posture counselling, and home cures can all be used to treat lower back related issue like pain.

In an advanced medical facility, 384 staff nurses participated in a study conducted by Sandhya, R.B. et al. (2015) in Puducherry to evaluate one's understanding of body mechanics and the prevalence of low back pain. According to the study's findings, 4.7% of nurses had low back issue like pain that was thought to be linked to their work. Low back discomfort affected 74% of nurses. . Although nearly half of the nurses had good body mechanics knowledge, the study also found that they hardly ever applied it. (^3)

According to a 2019 estimate on the prevalence and effects of musculoskeletal injuries among nurses in the Netherlands, 52% of them reported having 48% of people with low back pain had significant symptoms of their persistent low back pain. A few of them, such as 12% of nurses, 20% of nurses who changed units, 38% of nurses who were ill and required time off, and 6%, 8%, and 11% of nurses even changed employment as a result of back, neck, and shoulder issues. (^4)

The reasons of low back discomfort in nurses included repetitive bodily activities including lifting, twisting, and preparing the ground for crises while also reaching up, gripping, and clasping., as well as bad body posture, especially while ... Medication, mobilisation, stretching, stabilisation, ergonomic and postural advice, home cures, and exercise can all be used to treat low back pain. (^4)

Through increased flexibility and back muscle strength, exercise is a key factor in both preventing and treating low back pain. Stretching exercises were useful in reducing low back discomfort, according to reviews of the literature. The Acharya Technique is a series of five quick stretching exercises that last 30 seconds each and are used to bolster the lower back area muscle and lessen lower back discomfort. To strengthen the muscles in the lower back area and to relieve low back

related issues like pain, nurses can perform this workout for 3-5 minutes each day for 15 days (Acharya, SM. 2014). (^5)

MATERIALS AND METHODS-

Study design and the participants-

This hospital-based investigation was carried out at the KIMS Hospital in Bhubaneswar. The current study, which included nursing personnel works in the ICU and OT areas, it was a quasi-experimental approach. For the socio-demographic profile and clinical profile, questionnaires were created. The 60 staff nurses used the Acharya approach twice a day for 15 days.

Questionnaire design and data collection-

The information on the samples' socio-demographic and clinical profiles was gathered using a standardised questionnaire. Interviewing was used to gather the data, and Using the Numerical Pain Rating Scale and the Rolland Morris Impairment Index, the degree of pain and disability was evaluated. Pain was graded on a scale of 7–10 for extreme pain, 4-6 for moderate pain, and 1-3 for minor pain. To assess the disability caused by low back discomfort, the tool had 24 Yes/No questions. Each Yes answer in this has a score of "one," whereas each No answer has a score of "zero." Zero was the lowest score, signifying "No handicap," and 24 was the highest, signifying "Maximum impairment."

$$\text{Disability index} = \frac{\text{Obtained Score by individual nurse}}{\text{Total score}} \times 100$$

The degree of pain related issue and disability was evaluated both before and after the intervention.

Content validity and Questionnaire-

To ensure the validity of the content and the clarity of the language, five topic experts from the relevant departments of KIMS Hospital were given a questionnaire on socio-demographic and clinical profile. Following the receipt of the comments, the necessary update was made.

Inclusion criteria-

Nurses Both men and women who fall the age range of 21 to 45 years registered. Participants in the study had to report low back pain symptoms and had worked in an intensive care unit or occupational therapy for more than six months..

Exclusion criteria-

The experiment did not include nurses who had undergone surgery, had spinal or other orthopaedic problems, or had previously experienced or repeated low back pain episodes lasting longer than a year.

Sample size calculation –

80% of the sample size, or 56 people, were needed to obtain an effect size of 30% with a 0.05 error and power. About 60 people were taken into consideration for the investigation, taking time and practicality into account..

Sampling Techniques-

Purposeful sampling was a method utilised in this investigation. To find study participants who matched the inclusion and exclusion criteria, the researchers used purposeful sampling.

PRE PREPARATION

The unit was initially set up by setting up a separate area with mattresses for exercising. A formal request was made to the ward incharges to gather the staff nurses into manageable groups and ask them to relax by lying down on the bed and taking a deep breath.

STEP I

They were told to lie on the bed with their palms under their heads, eyes focused upward, and to yank their feet toward them while maintaining their heels securely on the mattress. The nurses were instructed to maintain that posture for only a moment, while shifting their feet to the side. Left foot in front of right and right in front of left. The nurses were instructed to straighten their legs while holding their feet together in a circle toward the centre, unwind for a moment in that position, and then repeat the exercise ten times.

STEP II

It was advised for the nurses to lie face down with their palms up. Keep the feet close together and jerk them in their direction. Lower both feet directly to the ground with a comparable jolt. Right foot to right side and left foot to left as you take a sideways step. The nurses were then told to straighten their legs, put their feet in a circle, and unwind for a bit.

STEP III

The samples were told to jerk both feet in their direction. You will be instructed to hold them tightly together for a little length of time, release them gradually, straighten your legs, and then return to the beginning position. 10–15 times, repeat this procedure.

STEP IV

Taught the nurses to separate and pull the feet in half (by 4-6 inches). Within a short period of time, gently strike the knees while abruptly pulling both feet upward. Separate your knees, then straighten them back to their starting positions to relieve the pressure.

STEP V

The nurses were advised to close their eyes and extend their bodies out until they were getting longer and longer, with their feet touching the wall, a wooden plank, or a rod of the cot. The plank or wall must be pushed against in order to move backward by about half an inch. The toes should be pointed downward and tucked in so that the body seems to be in a straight line. Instructed them to side-turn and, with your assistance, to rise to a sitting position.

POST PROCEDURE CARE

The researcher gave the nurses instructions on how to decrease low back pain by stretching twice daily for 15 days while also explaining the Acharya Technique's dos and don'ts.

Data management and statistical analysis-

This study used both descriptive and inferential statistics. To determine if the variables were associated, the T-test and the Chi-square test were used. The facts were examined by SPSS, version 16 (Statistical Package for Social Science).

Ethical committee approval-

The present study received approval from the research committee, and KIMS Hospital Odisha gave its consent. Participant consent was obtained after full disclosure. Data anonymity and confidentiality were upheld throughout the research process.

RESULTS -

Majority 14 (93.3%) of the OT nurses and 13 (86.7%) of the ICU nurses were between the ages of 21 and 31. Nine (60%) nurses worked in the intensive care unit, while 13 (86.7%) nurses worked in the occupational therapy department. In the experimental group, 11 (73.3%) OT nurses and 8 (53.3%) ICU nurses each had a GNM degree in nursing. Seven (46.7%) nurses in the OT and six (40.0%) nurses in the ICU had more than one year of experience each in the experimental group.

Eight (53.3%) nurses in the OT and seven (46.6%) nurses in the ICU reported moderate pain in the experimental group. Seven (46.7%) and nine (60.0%) nurses, respectively, have fewer than six months of OT and ICU experience. Six (40.9%) nurses work in the ICU while the other six (40.9%) work in the OT. Six (40.0%) Six (40.0%) nurses reported having back pain when working long hours in the OT in the experimental group of nurses. when sleeping in the ICU. ICU has fifteen nurses, while OT has fifteen nurses. ICU nurses' average When the pretest was administered, the experimental group's low back pain score was 6.27 with an SD of 1.16, and the score at the time of the posttest was 2.87 with a 0.64 SD. The typical score in OT prior to testing had a standard deviation of 0.62 while the mean score after testing had a standard deviation of 3.27.

The mean impairment due to low back discomfort score for ICU On the pretest, there were 13.93 nurses in the experimental group and 9.20 with a standard deviation of 1.42 and an SD of 1.79 on the posttest score. The mean score for OT was 13.80 on the pretest with a 1.74 SD, and it was 10.80 on the follow-up test with a 1.37 SD.

Table 1 Levels of low back related issue like pain experienced by nurses at work in the OT and ICU are distributed frequently and in a percentage..N=60 O1=30,O2=30

Group	Level of low back pain									
			No pain		Mild pain		Moderate pain		Severe pain	
	N	%	N	%	N	%	N	%	N	%
ICU	Experimental group	Pre test	0	0.0	0	0.0	8	53.3	7	46.7
		Post test	0	0.0	13	86.7	2	13.3	0	0.0
	Control group	Pre test	0	0.0	0	0.0	11	73.3	4	26.7
		Post test	0	0.0	0	0.0	10	66.7	5	33.3
OT	Experimental group	Pre test	0	0.0	0	0.0	9	60.0	6	40.0
		Post test	0	0.0	9	60.0	6	40.0	0	0.0
	Control group	Pre test	0	0.0	0	0.0	9	60.0	6	40.0
		Post test	0	0.0	0	0.0	10	66.7	5	33.3

O1 =Experimental group O2= Control group

According to Table 1, 8 (53.3%) of the ICU staff members in the test group claimed to experience mild low back pain. before to the test. In contrast, 13 (86.7%) nurses reported minor low back pain following the posttest. Most of the nurses in the control group experienced moderate low back discomfort both before and after the exam.

Nine (60.0%) of the experimental group of nurses with an OT preponderance reported having moderate low back discomfort prior to the exam.

However, nine (60.0%) nurses reported mild low back pain following the test. Most of the nurses in the control group experienced moderate levels both prior to and following the examination, of low back related issue like pain.

Table 2: Scores for low back pain among OT and ICU nurses, including the mean and the average deviation. N=60 O1=30 , O2=30

Group		Low back pain score				Mean difference	Paired 't' test
		Pre test		Post test			
		Mean	SD	Mean	SD		
Experimental group	ICU	6.27	1.16	2.87	0.64	3.40	t=12.47 p=0.001*** Significant
	OT	6.33	0.62	3.27	0.88	3.06	t=13.44 p=0.001*** Significant
Control Group	ICU	6.20	1.15	6.00	1.41	0.20	t=0.64 p=0.53 Not significant
	OT	6.27	0.88	6.07	1.28	0.20	t=0.82 p=0.42 Not significant

O1=Experimental group , O2= Control group (***- denotes significant at p<0.001)

On the pretest, the average score for low back-related issues like discomfort was 6.27 in the experimental group of ICU nurses, with a standard deviation of 1.16. and the score on the posttest was 2.87 with a standard deviation of 0.64, as shown in Table 2. In case of OT, the difference between the mean score before testing and the mean score after testing was measured in standard deviation, which was 0.62 before testing and 3.27 after testing.

ICU nurses in the control group had a mean score for low back pain on the pretest of 6.20 with a standard deviation of 1.15 and a score on the posttest of 6.00 with an SD of 1.41. In OT, the mean score before the test was 6.27 with a 0.88 standard deviation, As opposed to this, the test's mean score, which had a 1.28 standard deviation, was 6.07 points.

The difference was statistically significant. (p=0.001) in the low back pain scores between the pre- and post-tests for the nurses in the experimental group.

According to the aforementioned results, an experimental nursing staff who worked in the ICU and OT experienced less low back pain because to the Acharya Technique.

Table.3 Average and SD between OTs and ICU nurses for the low back pain disability index N=60 O1=30, O2=30

Group		Low back pain disability score				Mean difference	Paired 't' test
		Pre test		Post test			
		Mean	SD	Mean	SD		
Experimental group	ICU	13.93	1.79	9.20	1.42	4.73	t=9.07 p=0.001*** Significant
	OT	13.80	1.74	10.80	1.37	3.00	t=7.45 p=0.001*** Significant
Control Group	ICU	12.93	2.28	12.47	1.36	0.46	t=1.24 p=0.23 Not significant
	OT	13.80	1.91	12.93	1.94	0.33	t=0.86 p=0.40 Not significant

O1=Experimentation group , O2= Control criteria group(***- denotes significant at p<0.001)

Table 3 proves that the average ICU nurse disability score for low back related issues like pain in the experimentation group was 13.93 at the time of the pretest and had a standard deviation of 1.79 at the time of the posttest, and it was 9.20 at that time. The mean score in OT was 13.80 on the pretest with a 1.74 SD, and it was 10.80 on the posttest with a 1.37 SD.

ICU nurses in the control group's mean low back pain disability score ranged from 12.93 (SD: 2.28) Prior to the test to 12.47 (SD: 1.36) within the posttest. The mean score in occupational therapy was 13.80 with a 1.91 SD in the pretest and 12.93 with a 1.94 SD in the posttest.

For the variation in pre- and post-test ratings among nurses in the experimentation group or low back pain impairment was statistically noteworthy at the ($p=0.001$) level.

The data above show that the experimental group of nursing personnel, who worked in the ICU and OT saw reductions in low back pain impairment thanks to the Acharya Technique.

DISCUSSION

In total, 60 samples were chosen using the purposeful sampling method without regard to probability (30 in the OT = 15 experimentation groups, 15 control criteria groups, and 15 in the ICU = 15 experimentation groups, 15 control criteria groups). Data on demographics and clinical characteristics were gathered using a semi-structured questionnaire. Prior to and throughout the use of the Acharya method, low back pain severity and disability were assessed. The results of the tabulation and analysis of the The meaning of the collected data was then interpreted employing statistical inference and descriptive analysis. The study's stated goals serve as the foundation for the discussion.

In demographic variables –

In the experimentation group, 14 (93.3%) of the ICU nursing personnel and 13 (86.7%) of the OT nurses were between the ages of 21 and 31. In the control group, 13 (86.7%) of the OT nurses and 14 (93.3%) of the ICU nurses were between the ages of 21 and 31.

Nine (60%) nurses worked in the intensive care unit, while 13 (86.7%) nurses worked in the occupational therapy department. Ten (66.7%) ICU nurses and 11 (73.3%) OT nurses There were females for the control group.

In the experimentation group, 12 nurses in the ICU (80.0%) and 10 nurses in the OT (66.7%) made between Rs. 10,000 and Rs. 13,000 per month. Majority of the 11 (73.3%) ICU nurses and the 9 (60.0%) OT nurses in the control group made between Rs 10,000 and Rs 13,000 per month.

In the experimentation group, 8 (53.3%) of the ICU nurses and 11 (73.3%) of the OT nursing personnel held GNM nursing certifications. In the control group, 7 (46.7%) of the ICU nurses and 13 (86.7%) of the OT nursing personnel held GNM nursing certifications.

Seven (46.7%) nurses in the OT and six (40.0%) nurses in the ICU had more than one year of experience each in the experimental group. Ten (66.7%) ICU nurses and seven (46.7%) OT nurses in the control group each had one year of experience.

In clinical variables :

Eight (53.3%) nurses in the OT and seven (46.6%) nurses in the ICU reported moderate pain in the experimental group. Seven (46.7%) and nine (60.0%) nurses, respectively, have fewer than six months of OT and ICU experience. Six (40.9%) nurses work in the ICU while the other six (40.9) work in the OT.

Eight (53.3) nurses in the ICU and nine (60.0) in the OT were experiencing minor discomfort in the control group. In the ICU, seven (46.7) nurses have less than six months of experience, while in OT, seven (46.7) nurses have less than six months. In the ICU, 4 nurses (26.6%) experience inflammatory pain, and 5 nurses (33.3%) experience chronic pain in the OT.

In experimental group six (40.0) nurses experienced back pain in night in ICU and six (40.0) nurses experienced back pain while extended duty time in OT. fifteen nurses are from ICU and fifteen nurses are from OT

In control group six (40.0%) nurses experiences low back pain in night in ICU and seven (46.6%) nurses experiencing prolonged OT duty caused low back pain. fifteen nurses are from ICU and fifteen nurses are from OT.

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