



Journal of Advanced Nursing Practice

Journal homepage: www.mcmed.us/journal/janp



EFFECTIVENESS OF A POSTURE CORRECTION DEMONSTRATION PROGRAM ON BACK PAIN AMONG OPERATION THEATRE NURSES AT GURU NANAK DEV HOSPITAL, AMRITSAR, PUNJAB

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Article Information

Received 29/08/2026; Revised 23/09/2026;
Accepted 05/10/2026

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ABSTRACT

Back pain is one of the most common occupational health problems among operation theatre (OT) nurses because of prolonged standing, awkward postures, repetitive movements, patient handling and long working hours. Persistent back pain affects nurses' physical wellbeing, work efficiency and the quality of patient care. Posture correction programs that teach correct body mechanics and ergonomic practices may reduce its severity. This study aimed to assess the effectiveness of a posture correction demonstration program on back pain among nurses working in the operation theatres of Guru Nanak Dev Hospital, Amritsar, Punjab. A quantitative research approach with a pre-experimental one-group pre-test post-test design was adopted. Thirty nurses with back pain were selected by non-probability purposive sampling. Data were collected using socio-demographic variables and the Cornell Musculoskeletal Questionnaire to assess the level of pain. The pre-test was taken on 28 April 2026, and the posttest was taken one week after the demonstration program. The program covered correct body mechanics, ergonomic principles, standing and lifting techniques, stretching and strengthening exercises and posture maintenance strategies. Data were analysed using frequencies, percentages, means, standard deviations, the paired t-test and the chi-square test, and significance was defined as $p < 0.05$. In the pre-test, 16.7% of the nurses had mild, 63.3% had moderate and 20% had severe back pain; in the post-test, 63.3% had mild pain, 36.7% had moderate pain and none had severe pain. The mean pain score fell from 16.23 ± 6.66 to 9.40 ± 3.29 (mean difference 6.83; $t = 10.23$, $df = 29$, $p < 0.001$). Work experience was significantly associated with post-test pain level ($\chi^2 = 13.03$, $df = 3$, $p < 0.05$), whereas age, gender and diet were not. The posture correction demonstration program was effective in reducing back pain among OT nurses. Regular posture education and ergonomic training should be incorporated into hospital in-service education programs for nursing staff.

Key words: Back Pain, Posture Correction, Operation Theatre Nurses, Ergonomics.

INTRODUCTION

Musculoskeletal disorders are conditions that affect the muscles, bones, joints and soft tissues and lead to

disability and limitations in daily functioning. Nursing staff are among the occupational groups most affected, because



their work involves lifting and transferring patients, standing for long hours, bending and continuous walking, with little rest between duties.¹ Tired nurses often do not maintain proper posture and tend to ignore early signs and symptoms, so the problem reduces the time available for rest and recovery and affects their mental and emotional well-being as well as the quality of patient care.²

Proper body alignment means keeping the head, shoulders, spine and legs in positions that do not place excess pressure on muscles and joints. When the natural curves of the spine are disturbed, poor posture habits such as slouching, forward head posture and rounded shoulders can develop and later lead to back pain, neck pain and muscle stiffness.^{3,4} Simple checks such as the wall test, in which the back of the head, shoulders and hips touch the wall, can be used to judge standing posture without any equipment.⁵ Educating nurses about correct posture and body mechanics is therefore an important part of occupational safety.⁶

Back pain is a widespread musculoskeletal condition and a major contributor to disability across the world, affecting daily functioning, work performance and quality of life while increasing healthcare costs and absenteeism.⁷ Its occurrence is considerably higher among healthcare workers; nurses and operating room staff carry a particularly high burden because lifting and repositioning patients, prolonged standing, and frequent bending or twisting expose the spine to continuous mechanical strain.⁸ Age, higher body weight, longer duration of employment, shift work, stress and fatigue add to the risk, and the consequences include reduced job satisfaction, absenteeism, decreased productivity and, in some cases, early withdrawal from the profession.^{9,10} Nurses have been reported to have a six-fold higher prevalence of back injuries than other health professionals.¹¹ Operation theatre staff are exposed to prolonged static postures and sustained neck and trunk flexion during surgical procedures, and high rates of work-related musculoskeletal symptoms have been reported among operating room personnel and surgeons.^{12,13} Studies among office and industrial workers likewise link prolonged static posture and poor workstation ergonomics with musculoskeletal pain.¹⁴

A posture correction program is a planned set of exercises and habits that help maintain proper body alignment while sitting, standing and walking, and it is combined with ergonomic measures such as adjustable beds and stools, transfer boards, supportive footwear, avoiding lifting alone and regular micro-breaks.^{15,16} Randomised and quasi-experimental studies among office, industrial and healthcare workers have reported that ergonomic education, neck-specific and resistance exercise and posture correction training reduce musculoskeletal pain.¹⁷⁻²¹ Reviews and trials of posture-

correction approaches such as education, smartphone-assisted retraining, taping, neck weighting, dynamic seat cushions and strengthening exercises have reported improved posture and reduced pain,²²⁻²⁸ and technology-assisted methods such as wearable sensors and biofeedback devices have also shown promise.²⁹⁻³² Most of this evidence, however, concerns neck pain, and ergonomic knowledge among nursing professionals has been found to be moderate while its practical application remains poor.³³

Need of the Study

During clinical postings, it was observed that many OT staff frequently complain of back pain, neck pain and general body discomfort. These complaints arise mainly from long working hours, prolonged standing, improper posture and frequent patient handling. In high-risk areas such as the OT, staff often neglect proper body mechanics because of heavy workload and stress, and many ignore the early signs of pain, which may later develop into serious musculoskeletal disorders. Helpful posture correction techniques are not consistently taught or followed in many hospital settings.

This study was undertaken to create awareness among nursing staff of the importance of proper body mechanics and posture during daily procedures, and to find out whether a structured posture correction demonstration program, with strengthening and stretching exercises and posture correction advice, reduces back pain among OT nurses. The findings can contribute to a healthier, safer and more sustainable working environment and, in turn, to better patient care.

Problem Statement

A pre-experimental study to assess the effectiveness of a posture correction demonstration program on back pain among nurses working in the operation theatres of Guru Nanak Dev Hospital, Amritsar, Punjab.

AIM OF THE STUDY

To assess the effectiveness of a posture correction demonstration program on back pain among OT nurses at Guru Nanak Dev Hospital (GNDH), Amritsar.

Objectives

- To assess the pre-test level of back pain among nurses working in the operation theatres of GNDH, Amritsar.
- To assess the post-test level of back pain among nurses working in the operation theatres of GNDH, Amritsar.
- To assess the effectiveness of the posture correction demonstration program by comparing the pre-test and



post-test levels of back pain.

- To identify the association between the post-test level of back pain and selected sociodemographic variables.

Hypotheses

- **H₀** – There is no significant difference between the pre-test and post-test back pain scores of OT nurses after the posture correction demonstration program.
- **H₁** – There is a significant difference between the pre-test and post-test back pain scores of OT nurses after the posture correction demonstration program.

Operational Definitions

Posture:

The way a person holds or positions the body while sitting, standing or lying down.

Posture correction:

Improving the way a person sits, stands or moves so that the body stays in the right position and does not develop pain.

Posture correction demonstration program:

A planned set of activities, namely teaching, demonstration of exercises and practice, that helps nurses improve their posture and avoid body pain.

Operation theatre (OT): A specialised area of the hospital where a team of healthcare professionals performs surgical operations under a sterile environment.

Assumptions

- OT nursing staff experience some level of musculoskeletal discomfort or back pain because of the nature of their work.
- Improper posture is one of the main causes of back pain among healthcare workers.
- Participants will cooperate and actively participate in the posture correction program.
- The posture correction program will help in reducing back pain.
- The tools used for data collection are reliable and will accurately measure pain.

Delimitations

The study was limited to:

- OT nurses of Guru Nanak Dev Hospital, Amritsar, and does not include nurses of wards, ICU, emergency or other departments.
- A sample of 30 nurses, which may limit the generalisability of the findings.
- A short study period, with the post-test taken one week after the program.

- Posture correction alone; other treatment methods such as medication or physiotherapy were not included.

Conceptual Framework

For this study, Roy's Adaptation Model is selected to guide the investigation. The model, developed by Sister Callista Roy, views nursing as a science-based practice that promotes adaptation of the person in four modes, namely physiological, self-concept, role function and interdependence, in response to environmental stimuli.³⁴ The person is an adaptive system in constant interaction with a changing internal and external environment and is always trying to maintain balance; health is a state and process of being integrated and whole, achieved when the person adapts effectively; and the role of nursing is to help individuals adapt by improving their coping mechanisms.

In this study, the OT nurse is the adaptive system, and the workload, prolonged standing and patient-handling demands of the OT are the environmental stimuli that produce back pain, an ineffective response in the physiological mode. The posture correction demonstration program acts as a nursing intervention that helps the nurses adapt through correct posture, body mechanics and exercises. Reduction of back pain after the program is taken as evidence of adaptation.

METHODOLOGY

Methodology specifies the structured plan and systematic process of collecting, analysing and interpreting data to answer the research question or test the hypotheses. This chapter describes the research approach, design, setting, population, sample and sampling technique, criteria for sample selection, tool, scoring, pilot study, intervention, data collection procedure, ethical considerations and plan for data analysis.

Research Approach

A quantitative research approach was used in this study.

Research Design

A pre-experimental one-group pre-test post-test design was used. The same group of nurses was assessed before and after the posture correction demonstration program, and no control group was included.

Research Setting

The present study was conducted in the operation theatres of Guru Nanak Dev Hospital, Amritsar.

Target Population

Nurses with back pain working in the operation theatres of Guru Nanak Dev Hospital, Amritsar.



Accessible Population

Nurses with back pain working in the operation theatres of Guru Nanak Dev Hospital, Amritsar, who were willing to participate in the study.

Sample, Sample Size and Sampling Technique

The sample consisted of nurses with back pain working in the operation theatres of Guru Nanak Dev Hospital, Amritsar. The sample size was 30, and the non-probability purposive sampling technique was used to select the sample.

Criteria for Sample Selection

Inclusion criteria:

1. Nurses working in the operation theatres of Guru Nanak Dev Hospital, Amritsar, who had back pain.
2. Nurses who were willing to participate in the research.

Exclusion criteria:

1. Nurses working in the operation theatres who did not have back pain.
2. Nurses who were not willing to participate in the research.

Description of Tool

The tool consisted of three parts:

Part 1: Socio-demographic variables of the respondents, namely age, gender, work experience, diet and residence.

Part 2: The standardised Cornell Musculoskeletal Questionnaire, used with a body map to assess the areas and levels of pain among the nurses.

Part 3: The standardised Rapid Entire Body Assessment (REBA) scale, used to assess postural risk among the nurses.

Scoring and Interpretation

Cornell Musculoskeletal Questionnaire: Maximum score - 33. Scores were taken only for the neck, lower back and upper back.

- Score 0 to 11 - Mild pain
- Score 12 to 22 - Moderate pain
- Score 23 to 33 - Severe pain

REBA scale: 1 - negligible risk; 2–3 - low risk (change may be needed); 4–7 - medium risk (investigate further, change soon); 8–10 - high risk (investigate and implement change); 11 and above - very high risk (implement change).

Pilot Study

To test the feasibility, relevance and practicality of the tool, a pilot study was conducted among 3 nurses selected by randomisation. The pilot study showed that the study was feasible and relevant, and the data were analysed to find the suitability of the statistics.

Posture Correction Demonstration Program

The program was demonstrated to the nurses after the pre-test. It covered correct body mechanics and ergonomic principles, proper standing, sitting and lifting techniques, and posture maintenance strategies. The exercises demonstrated were back to the wall, wall angels, pulling the head back (chin tuck), doorway lunge, standing row with a resistance band, shoulder blade push, pelvic tilt and the seated neck stretch. Ergonomic advice included using adjustable stools and lifting aids, wearing low-heeled supportive footwear, avoiding lifting alone and taking short breaks at regular intervals during work.

Data Collection Procedure

Data collection began on 28 April 2026, and the pre-test was taken on the same day among the nurses with back pain working in the operation theatres of Guru Nanak Dev Hospital, Amritsar. After one week of demonstration and practice of the posture correction program, the post-test was taken from the same nurses.

Permission

Formal permission to conduct the study was obtained from the Medical Superintendent, Guru Nanak Dev Hospital, Amritsar, and the Principal, Government College of Nursing, Amritsar.

Ethical Considerations

Prior information and explanation were given to the participants. The purpose of the study was explained to the subjects, and they were assured that their responses would be kept confidential. A professional interpersonal relationship was maintained with the subjects.

Plan for Data Analysis

The data were analysed in accordance with the objectives of the study using descriptive statistics (frequency, percentage, mean and standard deviation) and inferential statistics (paired t-test and chi-square test) at the 0.05 level of significance, and were presented in tables.

Analysis and Interpretation

Kerlinger (1986) has defined analysis as the categorizing, ordering, manipulating and summarizing of data to reduce it to intangible and interpretable form so that the research problem can be studied and tested, including the relationship between variables.³⁵

This chapter deals with the analysis and interpretation of data obtained from a sample of 30 nurses working in the operation theatres of Guru Nanak Dev Hospital, Amritsar, Punjab. The data were organised, coded and tabulated. Frequency, percentage, mean and standard deviation were used to describe the demographic characteristics and the level of back pain. The effectiveness



of the program was assessed by comparing pre-test and post-test pain scores with the paired t-test, and the association between selected demographic variables and the post-test level of back pain was examined with the chi-square (χ^2) test. Calculated values were compared with table values at the 0.05 level of significance.

Objectives of the Study

- To assess the pre-test level of back pain among nurses working in the operation theatres of GNDH, Amritsar.
- To assess the post-test level of back pain among nurses working in the operation theatres of GNDH, Amritsar.
- To assess the effectiveness of the posture correction demonstration program by comparing the pre-test and post-test levels of back pain.
- To identify the association between the post-test level of back pain and selected sociodemographic variables.

The analysis is presented in four sections: Section 1 - socio-demographic characteristics of the sample; Section 2 - level of back pain in the pre-test and post-test; Section 3 - comparison of pretest and post-test pain scores using the paired t-test; Section 4 - association between selected demographic variables and the post-test level of back pain using the chi-square test.

Table 1 (A) reveals that 6.7% of the respondents are in the age group 24-28 years, 26.7% in 28-32 years, 20% in 32-36 years, 20% in 36-40 years and 26.7% are above 40 years.

Table 1 (B) reveals that the majority of the nurses are female (96.7%), while only 3.3% are male.

Table 1 (C) reveals that 16.7% of the nurses have 0-5 years of work experience, 23.3% have 5-10 years, 20% have 10-15 years and 40% have 15-20 years.

SECTION 1: SOCIO DEMOGRAPHIC VARIABLES

Table1: Frequency and percentage distribution of subjects as per their socio-demographic variables.

Demographic variable:	N	%
AGE (IN YEARS)		
24 - 28	02	6.7 %
28 - 32	08	26.7 %
32 - 36	06	20.0 %
36 - 40	06	20.0 %
Above 40	08	26.7 %
GENDER:		
Male	01	3.3 %
Female	29	96.7 %
WORK EXPERIENCE (IN YEARS):		
0 - 5	05	16.7 %

Table 1 (D) reveals that 56.7% of the nurses are vegetarian and 43.3% are non-vegetarian.

Table 1 (E) reveals that 56.7% of the nurses are from rural areas and 43.3% are from urban areas.

Table 2 depicts the level of back pain before and after the posture correction demonstration program. In the pre-test, 19 (63.3%) nurses had moderate back pain, 6 (20%) had severe pain and 5 (16.7%) had mild pain. In the post-test, 19 (63.3%) nurses had mild pain and 11 (36.7%) had moderate pain, and none had severe pain.

Hence, it was concluded that most nurses had moderate back pain before the program, and most had only mild pain after it.

Table 3 depicts the comparison between the pre-test and post-test pain scores. The mean pre-test pain score was 16.23 ± 6.66 , whereas the mean post-test score was 9.40 ± 3.29 , a mean difference of 6.83. The calculated paired t-value of 10.23 with 29 degrees of freedom was greater than the table value (2.045) at the 0.05 level of significance.

Hence, the null hypothesis was rejected, and it was concluded that the reduction in back pain after the posture correction demonstration program was statistically significant.

Table 5 depicts the association between the post-test level of back pain and the demographic variables. The calculated χ^2 values for age (1.65, df = 4), gender (0.60, df = 1) and diet (0.34, df = 1) were less than the table values at the 0.05 level, so no significant association was found with these variables. The χ^2 value for work experience (13.03, df = 3) was greater than the table value (7.815), so a significant association was found: 9 of the 12 nurses with 15-20 years of experience still had moderate pain after the program, compared with 2 of the 18 nurses with less than 15 years of experience.

Hence, it was concluded that work experience was significantly associated with the post-test level of back pain, whereas age, gender and diet were not.



5 - 10	07	23.3 %
Demographic variable:	N	%
10 - 15	06	20.0 %
15 - 20	12	40.0 %
DIET:		
Vegetarian	17	56.7 %
Non-vegetarian	13	43.3 %
RESIDENCE:		
Rural	17	56.7 %
Urban	13	43.3 %

SECTION 2: LEVEL OF BACK PAIN IN THE PRE-TEST AND POST-TEST

Table 2: Frequency and percentage distribution of nurses as per the level of back pain in the pre-test and post-test.

N = 30

Level of back pain (Cornell score)	Pre-test f	Pre-test %	Post-test f	Post-test %
Mild (0 - 11)	5	16.7 %	19	63.3 %
Moderate (12 - 22)	19	63.3 %	11	36.7 %
Severe (23 - 33)	6	20.0 %	0	0.0 %

Maximum score = 33

SECTION 3: COMPARISON OF PRE-TEST AND POST-TEST PAIN SCORES

Table 3: Comparison of pre-test and post-test back pain scores using the paired t-test.

N = 30

Test	Mean	SD	Mean difference	df	t-value	Table value
Pre-test	16.23	6.66	6.83	29	10.23	2.045
Post-test	9.40	3.29				

Significant at $p < 0.05$

SECTION 4: ASSOCIATION BETWEEN SELECTED DEMOGRAPHIC VARIABLES AND POST-TEST LEVEL OF BACK PAIN

Table 4: Distribution of post-test level of back pain according to selected demographic variables.

Demographic variable	Mild f (%)	Moderate f (%)	Severe f (%)	Total
AGE (IN YEARS)				
24 - 28	2 (6.7)	0 (0.0)	0 (0.0)	2
28 - 32	5 (16.7)	3 (10.0)	0 (0.0)	8
32 - 36	4 (13.3)	2 (6.7)	0 (0.0)	6
36 - 40	3 (10.0)	3 (10.0)	0 (0.0)	6
Above 40	5 (16.7)	3 (10.0)	0 (0.0)	8
GENDER				
Demographic variable	Mild f (%)	Moderate f (%)	Severe f (%)	Total
Male	1 (3.3)	0 (0.0)	0 (0.0)	1
Female	18 (60.0)	11 (36.7)	0 (0.0)	29
WORK EXPERIENCE (IN YEARS)				
0 - 5	5 (16.7)	0 (0.0)	0 (0.0)	5
5 - 10	6 (20.0)	1 (3.3)	0 (0.0)	7
10 - 15	5 (16.7)	1 (3.3)	0 (0.0)	6
15 - 20	3 (10.0)	9 (30.0)	0 (0.0)	12
DIET				
Vegetarian	10 (33.3)	7 (23.3)	0 (0.0)	17
Non-vegetarian	9 (30.0)	4 (13.3)	0 (0.0)	13



Percentages are calculated on N = 30.

Table 5: Association between selected demographic variables and post-test level of back pain using the chi-square test.

Demographic variable	χ^2 value	df	Table value	p value	Inference
Age	1.65	4	9.488	0.80	Not significant
Gender	0.60	1	3.841	0.44	Not significant
Work experience	13.03	3	7.815	0.005	Significant
Diet	0.34	1	3.841	0.56	Not significant

Significant at $p < 0.05$

DISCUSSION

The present study assessed the effectiveness of a posture correction demonstration program on back pain among nurses working in the operation theatres of Guru Nanak Dev Hospital, Amritsar. The findings are discussed objective-wise with reference to previous research.

- The first objective was to assess the pre-test level of back pain. Most nurses (63.3%) had moderate pain and 20% had severe pain before the program, which reflects the effect of prolonged standing, awkward posture, repetitive movement, patient handling and long working hours. This is consistent with the high prevalence of musculoskeletal symptoms reported among operating room personnel¹² and surgeons,¹³ and with the finding that more than 60% of workers had neck pain associated with prolonged static posture and poor ergonomics.¹⁴
- The second objective was to assess the post-test level of back pain. After the program, 63.3% of the nurses had mild pain, 36.7% had moderate pain and none had severe pain. A significant reduction in pain following exercise and posture interventions has likewise been reported in other studies.^{19,25,36} The reduction may be attributed to increased awareness of correct body mechanics, proper standing posture and ergonomic positioning.
- The third objective was to assess the effectiveness of the program by comparing pre-test and post-test pain. The mean pain score fell from 16.23 to 9.40, and the paired t-value (10.23) was significant, so the null hypothesis was rejected. This agrees with trials in which workplace ergonomic and exercise interventions and ergonomic training significantly reduced pain among workers,^{17,20} and with a study in which ergonomic education improved ergonomic knowledge and reduced discomfort among nurses.²¹ Most of these studies, however, measured neck pain, so the comparison with back pain should be made with caution.
- The fourth objective was to identify the association between post-test pain and selected demographic variables. Work experience was the only variable with a significant association; nurses with 15-20 years of

experience were more likely to have moderate pain after the program, possibly because of longer cumulative exposure to physical workload. This is in line with reports that occupational exposure and work characteristics influence the occurrence and severity of musculoskeletal pain,³⁷ and that demographic and occupational characteristics affect ergonomic practice among nurses.³³ Age, gender and diet were not significantly associated with pain, although the sample contained only one male nurse.

Overall, back pain was common among the OT nurses, and the posture correction demonstration program was associated with a significant reduction in pain. The program can be regarded as a feasible, non-invasive and low-cost intervention for reducing occupational back pain among OT nurses.

Summary, Conclusions and Recommendations

This chapter presents a brief account of the present study, including the conclusions drawn from the findings, as well as the implications, limitations and recommendations for future research.

Summary of the Study

The aim of the study was to assess the effectiveness of a posture correction demonstration program on back pain among OT nurses of Guru Nanak Dev Hospital, Amritsar, with a view to reducing back pain and correcting posture. A pre-experimental one-group pre-test post-test design was used with 30 nurses selected by purposive sampling.

Major Findings of the Study

1. **Level of back pain**
 - Pre-test: 16.7% of nurses had mild, 63.3% moderate and 20% severe back pain.
 - Post-test: 63.3% had mild and 36.7% moderate pain; none had severe pain.
2. **Effectiveness of the program**
 - The mean pain score fell from 16.23 ± 6.66 to 9.40 ± 3.29 (mean difference 6.83; $t = 10.23$, $df = 29$), which was significant at $p < 0.05$.
3. **Association with socio-demographic variables**
 - Work experience was significantly associated



with post-test pain level ($\chi^2 = 13.03$, $df = 3$, $p < 0.05$).

- Age, gender and diet showed no significant association ($p > 0.05$).

CONCLUSION

The study shows that the posture correction demonstration program was effective in reducing back pain among OT nurses of Guru Nanak Dev Hospital, and it highlights the importance of posture correction education for nursing staff.

Implications

Nursing practice

Correct posture and body mechanics during prolonged standing, bending, lifting and patient transfer reduce musculoskeletal strain, prevent occupational injury and allow nurses to work more efficiently and safely.

Nursing education

Posture correction, ergonomics and body mechanics should be included in the nursing curriculum with practical demonstrations, and workshops and in-service education should be organised to prevent occupational back pain.

Nursing research

The findings provide a base for further studies that compare ergonomic interventions, exercise programs or posture correction methods, and for replication among ward nurses, ICU staff and other healthcare professionals.

Patient care

Reduced back pain improves the concentration, mobility and working efficiency of nurses during OT procedures, and thus indirectly improves the quality of patient care and patient safety.

Occupational health

Hospitals should include regular screening, exercise guidance and ergonomic counselling for nursing staff, and identify posture-related problems early.

Nursing administration

Administrators should arrange regular posture correction and ergonomic training and provide adequate staffing, duty rotation, rest periods and ergonomic equipment such as adjustable stools, supportive footwear and lifting aids.

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Policy making

Hospital policies and guidelines on safe body mechanics, lifting techniques, regular health assessment and prevention of musculoskeletal disorders can help maintain the health and productivity of nursing staff.

Limitations

- The study was limited to OT nursing staff and did not include nurses from wards, ICU, emergency or other departments.
- The sample was small ($n = 30$), there was no control group, and several cells in the chisquare tables had expected frequencies below 5, so the findings should be interpreted with caution.
- Adherence to posture correction techniques outside the observation period could not be monitored continuously.
- The study depended on self-reported back pain scores, which may cause response bias.
- The study period was short, so long-term effectiveness of the program could not be assessed.

Recommendations

1. The study can be replicated on a larger sample for better generalisation of the findings.
2. The study can be replicated in other hospital settings and departments such as ICU, wards, emergency units and labour rooms.
3. Regular posture correction and ergonomics training programs should be organised for nursing staff in hospitals.
4. Future studies can compare different interventions such as yoga, ergonomics training and posture correction techniques for reducing back pain, preferably with a control group and a longer follow-up.

Acknowledgement

The authors thank Mr. Bhuvanesh Shukla, Principal, Government College of Nursing, Amritsar, for the opportunity to undertake this research project, and Mr. Rupinder Singh, Government College of Nursing, Amritsar, for his valuable guidance and supervision. The authors are also grateful to the nursing staff of the operation theatres of Guru Nanak Dev Hospital, Amritsar, whose participation made this study possible.



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