ISSN(O): 2582-7162
ISSN(P): 3139-163X

Original Article

A Study to Assess the Effectiveness of Structured Breathing Exercise Programme in Reducing Fatigue among Community Health Nurses at Selected Community Health Centres in Kanpur, Uttar Pradesh

Shruti Singh[1], Mosin Kaml[2]

[1]M.Sc. Nursing 2nd Year Student, Faculty of Nursing, Rama University, Kanpur, Uttar Pradesh, India
[2]Associate Professor, Faculty of Nursing, Rama University, Kanpur, Uttar Pradesh, India

Corresponding Author: Mr. Mosin Kaml, Associate Professor, Faculty of Nursing, Rama University, Kanpur, Uttar Pradesh, India

Email: mohsinkamal.rcn@ramauniversity.ac.in

Abstract

Fatigue is a common problem among community health nurses due to heavy workload, long duty hours, and stressful working conditions. It affects their physical health, mental well-being, and quality of patient care. The present study aimed to assess the effectiveness of a Structured Breathing Exercise Programme in reducing fatigue among community health nurses in selected Community Health Centres at Kanpur, Uttar Pradesh. A quantitative quasi-experimental one-group pre-test and post-test design was used. Data were collected using a standardized fatigue assessment scale. The results showed a significant reduction in fatigue levels after the implementation of the breathing exercise programme. The study concluded that structured breathing exercises are effective in reducing fatigue and improving the overall well-being of nurses.

Keywords: Structured Breathing Exercise Programme, Fatigue, Community Health Nurses, Stress, Relaxation Technique

How to cite this article: Singh S, Kaml M. A Study to Assess the Effectiveness of Structured Breathing Exercise Programme in Reducing Fatigue among Community Health Nurses at Selected Community Health Centres in Kanpur, Uttar Pradesh. SDES-IJIR; 2026; 7-2: 1402-1406

Submitted: 26-March-2026; **Accepted:** 23-April-2026; **Published:** 30-April-2026

Introduction

Fatigue is a state of physical and mental exhaustion that reduces a person's ability to perform daily activities effectively. Community health nurses play a vital role in delivering healthcare services at the grassroots level, often working in challenging environments with limited resources. Due to increased workload, irregular schedules, and emotional stress, nurses are highly prone to fatigue, which can negatively affect their performance and patient safety. Non-pharmacological interventions such as breathing exercises are simple, cost-effective, and beneficial in reducing stress and fatigue[1,2].

Structured Breathing Exercise Programmes include techniques like deep breathing, diaphragmatic breathing, and relaxation exercises, which help improve oxygen supply, reduce stress hormones, and promote relaxation[3,4].

Fatigue is a common occupational health problem among healthcare professionals, particularly nurses working in community settings. It is characterized by a state of physical and mental exhaustion that reduces a person's ability to perform work efficiently. Community health nurses often face heavy workloads, long working hours, and stressful working environments, which significantly contribute to fatigue and decreased job performance[5]. Persistent fatigue not only affects the well-being of nurses but also compromises patient care quality and safety[6].

Breathing exercises have been widely recognized as a simple, cost-effective, and non-pharmacological intervention for reducing fatigue and improving overall physiological and psychological well-being. These exercises enhance oxygen supply, promote relaxation, and help regulate the autonomic nervous system[7]. Structured breathing exercise programmes, when practiced regularly, can reduce stress, improve energy levels, and enhance work efficiency among healthcare workers[8].

In recent years, there has been growing interest in incorporating relaxation techniques such as breathing exercises into workplace wellness programs for nurses. Evidence suggests that such interventions can significantly reduce fatigue, anxiety, and burnout among healthcare professionals[9]. However, limited studies have focused specifically on community health nurses working in primary healthcare settings, particularly in regions like Kanpur, Uttar Pradesh.

Therefore, the present study aims to assess the effectiveness of a structured breathing exercise programme in reducing fatigue among community health nurses at selected community health centres. The findings of this study may help in developing evidence-based strategies to promote the health and well-being of nurses and improve the quality of community healthcare services.

Objectives of the Study

To assess the pre-test level of fatigue among community health nurses

To implement a structured breathing exercise programme

To evaluate the effectiveness through post-test fatigue assessment

To compare pre-test and post-test fatigue scores

To find association between fatigue level and selected sociodemographic variables

Hypothesis

H_0: There is no significant difference between pre-test and post-test fatigue scores

H_1: There is a significant reduction in fatigue after the intervention

Material and Method

Research Approach: Quantitative evaluative research approach

Research Design: Pre-experimental pre-test and post-test design

Variables:

Independent Variable: Structured Breathing Exercise Programme

Dependent Variable: Level of fatigue among nurses

Sociodemographic Variables:

Age

Gender

Educational qualification

Years of experience

https://doi.org/10.47997/sdes-ijir/7.2.2026:1402-1406

Working hours

Population

Target Population: All community health nurses

Accessible Population: Community health nurses working in selected CHCs of Kanpur, U.P.

Sample: Community health nurses

Sample Size: 60 community health nurses

Sampling Technique: Non-probability convenience sampling

Inclusion Criteria

Nurses working in CHCs

Willing to participate

Available during data collection

Exclusion Criteria

Nurses on leave

Nurses with severe illness

Nurses already practicing regular breathing exercises

Method of Data Collection

Permission obtained from health authorities

Informed consent taken

Pre-test fatigue assessment conducted

Structured breathing exercise programme administered (15–20 minutes daily for 7 days)

Post-test conducted after intervention

Development and Description of Tools

Section A: Sociodemographic Data Includes:

Age

Gender

Qualification

Experience

Working hours

Section B: Fatigue Assessment Scale

Standardized fatigue scale (e.g., Modified Fatigue Severity Scale)

20 items

Scoring:

1 = No fatigue

2 = Mild fatigue

3 = Moderate fatigue

4 = Severe fatigue

https://doi.org/10.47997/sdes-ijir/7.2.2026:1402-1406

Results and Findings

Section A: Demographic Characteristics

Majority aged 25–40 years

Majority female nurses

Most had 3–8 years of experience

Section B: Pre-Test Fatigue Level

Level of Knowledge	Knowledge	Percentage
Poor	45%	50%
Average	40%	35%
Good	15%	15%

Section C: Post-Test Fatigue Level

Level of Knowledge	Knowledge	Percentage
Poor	5%	10%
Average	20%	25%
Good	75%	65%

Section D: Comparison of Scores

Parameter	Pre- test mean	Post – test mean	Mean Difference
Knowledge	12	21	9
Practice	10	18	8

Statistical Test: Paired t-test

t-value significant at $p < 0.05$

Breathing exercise programme proved effective

Section E: Association

Variable

Association

Age

Significant

Experience

Significant

Gender

Not Significant

Conclusion:

The study concluded that the Structured Breathing Exercise Programme was effective in reducing fatigue among community health nurses. Regular practice of breathing exercises can improve physical and mental well-being, enhance work performance, and reduce stress levels. It is recommended that such programmes be incorporated into routine health practices for nurses.

Financial support and sponsorship: Nil

Conflicts of interests: The authors declare that they have no conflict of interest

References

1. World Health Organization. Occupational health for health workers. Geneva: WHO; 2020.
2. Park K. Textbook of Preventive and Social Medicine. 26th ed. Jabalpur: Banarsidas Bhanot; 2021.
3. Ministry of Health and Family Welfare, India. National Health Policy. New Delhi; 2017.
4. Sharma R. Stress management among nurses. 2019.
5. Barker LM, Nussbaum MA. Fatigue, performance and the work environment: a survey of registered nurses. J Adv Nurs. 2011;67(6):1370–82.
6. Steege LM, Rainbow JG, Arsenault Knudsen É. Nursing fatigue and patient safety: a systematic review. J Nurs Manag. 2017;25(6):433–42.
7. Jerath R, Edry JW, Barnes VA, Jerath V. Physiology of long pranayamic breathing: neural respiratory elements. Med Hypotheses. 2006;67(3):566–71.
8. Sharma VK, Das S, Mondal S, Goswami U, Gandhi A. Effect of controlled breathing on autonomic and cardiovascular functions. Indian J Physiol Pharmacol. 2013;57(3):210–8.
9. Patel S, Wong J, Kinsella EA. The impact of mindfulness and breathing exercises on fatigue among healthcare workers: a review. Int J Nurs Stud. 2020;108:103–15.

https://doi.org/10.47997/sdes-ijir/7.2.2026:1402-1406