

Clinical Trial Protocol

Iranian Registry of Clinical Trials

16 Sep 2026

The Effect of Multidimensional Interventions on the Improvement of Musculoskeletal Disorders of Nurses Working in Intensive Care Units

Protocol summary

Study aim

Determining the effect of multifaceted interventions on the improvement of musculoskeletal disorders of nurses working in the intensive care unit

Design

A clinical trial with a control group with a sample size of 72 people, of which 36 people are assigned to each group, using a simple random method. No blinding

Settings and conduct

In the special care department of Golestan and Imam Khomeini Hospital, Ahvaz, in the first three weeks, a 30-minute lecture session, and from week 3 to 6, weekly meetings to fix bugs and improve the environment

Participants/Inclusion and exclusion criteria

Inclusion criteria: nurses who directly care for patients and have musculoskeletal disorders caused by work
Exclusion criteria: unwillingness to continue cooperation and pregnancy

Intervention groups

Interventions in the form of feedback lecture sessions in the field of musculoskeletal disorders related to work, symptoms, epidemiology, risk factors and their consequences, health behavior education regarding the concept of ergonomics, the effect of ergonomic principles in preventing and reducing musculoskeletal disorders caused by Nursing work, training in the field of correct sitting position, seat height adjustment, physical exercises, walking, turning and workplace safety, safety barriers, teamwork and communication, improving the environment of the special care department through the use of cushions and front legs and positioning. It will be appropriate to distribute brochures and send messages to the mobile phones of the participants and hold troubleshooting meetings, no action will be taken in the control group.

Main outcome variables

Improvement of musculoskeletal disorders in intensive care nurses

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20231030059907N1**

Registration date: **2023-11-20, 1402/08/29**

Registration timing: **prospective**

Last update: **2023-11-20, 1402/08/29**

Update count: **0**

Registration date

2023-11-20, 1402/08/29

Registrant information

Name

Mahdiye Marzban

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 61 3320 0105

Email address

mahdiyemarzban@gmail.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2023-12-06, 1402/09/15

Expected recruitment end date

2024-03-04, 1402/12/14

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The Effect of Multidimensional Interventions on the Improvement of Musculoskeletal Disorders of Nurses Working in Intensive Care Units		
Public title	The Effect of Multidimensional Interventions on the Improvement of Musculoskeletal Disorders of Nurses Working in Intensive Care Units	
Purpose	Supportive	
Inclusion/Exclusion criteria	Inclusion criteria: At least one year of Experience in Intensive Care Unit Having at least a Bachelor's Degree in Nursing Absence of Congenital Skeletal Disorders No History of Surgery on the Spine Absence of Pregnancy Confirmation of Musculoskeletal Disorder Based on the Nordic questionnaire Exclusion criteria: Nurses with less than a Bachelor's Degree Nurses who are not Directly Involved in Patient Care Nurses who Use Painkillers Unwillingness to Participate in the Study	
Age	No age limit	
Gender	Both	
Phase	N/A	
Groups that have been masked	No information	
Sample size	Target sample size: 72	
Randomization (investigator's opinion)	Randomized	
Randomization description	In this research, based on the results of previous studies and according to the opinion of the respected consultant of statistics and methodology, the number of samples will be 72 people. In a simple random way, one of Golestan and Imam Khomeini hospitals in Ahvaz will be assigned to the intervention group and the other to the control group. From each hospital, 2 ICU departments are randomly determined and the samples are selected based on the entry criteria. According to the calculations and the possible drop of 20%, the sample size in each group will be 36 people.	
Blinding (investigator's opinion)	Not blinded	
Blinding description		
Placebo	Not used	
Assignment	Factorial	
Other design features		
Secondary Ids	empty	
Ethics committees		<u>1</u> Ethics committee Name of ethics committee Ethics Committee of Jundishapur Ahvaz University of Medical Sciences Street address Jundishapur Ahvaz University of Medical Sciences, Esfand St, University City, Golestan Boulevard, Ahvaz City Ahvaz Province Khouzestan Postal code 61357 -15794 Approval date 2023-10-23, 1402/08/01 Ethics committee reference number IR.AJUMS.REC.1402.380
		Health conditions studied <u>1</u> Description of health condition studied Musculoskeletal Disorders ICD-10 code M95.8 ICD-10 code description Other specified acquired deformities of musculoskeletal system
		Primary outcomes <u>1</u> Description Work-related musculoskeletal disorders Timepoint At the beginning of the study and at the end of the sixth and twelfth weeks after the intervention Method of measurement Nordic Musculoskeletal Questionnaire
		Secondary outcomes <u>1</u> Description Perception of Risk Timepoint At the beginning of the study and at the end of the sixth and twelfth weeks after the intervention Method of measurement Risk perception of musculoskeletal injury
		<u>2</u> Description Physical Behavior Timepoint At the beginning of the study and at the end of the sixth

and twelfth weeks after the intervention

Method of measurement
Questionnaire for assessing the status of nursing physical behaviors

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Description

Workplace safety

Timepoint

At the beginning of the study and at the end of the sixth and twelfth weeks after the intervention

Method of measurement

Nurses' safety Climate Questionnaire

Intervention groups

1

Description

Intervention group: The intervention group is trained as follows: In general, the interventions will be carried out during 6 weeks, the first, second and third weeks are dedicated to weekly feedback sessions. 1- The first session: a 30-minute feedback lecture in the first week in the field of work-related musculoskeletal disorders, symptoms, epidemiology, risk factors and consequences, which will be conducted by the researcher. 2- The second session: a 30-minute feedback lecture in the second week in the field of health behavior education regarding the concept of ergonomics, the effect of ergonomic principles in preventing and reducing musculoskeletal disorders caused by nursing work, training in the field of correct sitting position, Adjusting the height of the chair, physical exercises, walking, turning, how to move patients and lift equipment will be done by an ergonomic specialist. 3- The third session: In the field of safe work environment, a 30-minute feedback lecture will be given in the third week about the safety of the work environment, safety barriers, teamwork and communication by an ergonomic expert and a researcher. From the 4th to the 6th week, the following steps will be taken: 1- Distributing brochures and sending messages through mobile phones regarding work-related musculoskeletal disorders, factors affecting these disorders, protective exercises and ergonomic principles to prevent these disorders from occurring or worsening on a weekly basis. 2- Holding weekly meetings in the form of practical exercises to strengthen the health behaviors taught, including correct sitting position, walking, turning, moving patients correctly, adjusting the height of the chair and fixing problems. 3- Improving the ICU environment by making changes such as replacing height-adjustable chairs instead of fixed-height chairs, 2 front legs and 2 back legs for chairs (cushions), using stools to access the equipment in are high and the correct placement of devices in the environment, taking into account the access limit and how to use them, as well as the purpose of using these devices, will be explained to the nurses in the form of a lecture. All the trainings will be done under the supervision of an ergonomics expert, and in order to comply with ethical

issues, after studying the training material, it will be given to the control group in the form of pamphlets and brochures.

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

Golestan Hospital

Full name of responsible person

Dr. Simin Jahani

Street address

Golestan Educational and Medical Center, Farvardin St, Golestan, Ahvaz

City

Ahvaz

Province

Khouzestan

Postal code

6441945781

Phone

+98 61 3320 4501

Fax

+98 61 3337 4058

Email

golestanjpspital@yahoo.com

Web page address

<https://hgolestan.ajums.ac.ir>

2

Recruitment center

Name of recruitment center

Imam Khomeini Hospital

Full name of responsible person

Dr. Simin Jahani

Street address

Imam Khomeini Hospital, Azadegan St

City

Ahvaz

Province

Khouzestan

Postal code

6193673111

Phone

+98 61 3222 2114

Fax

Email

himam@ajums.ac.ir

Web page address

<http://himam.ajums.ac.ir>

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Ahvaz University of Medical Sciences

Full name of responsible person

Dr.Mehrnoosh Zakerkish

Street address

Esfand St, University City, Golestan Boulevard, Ahvaz

City

Ahvaz

Province

Khouzestan

Postal code

61357-15794

Phone

+98 61 3311 0000

Fax

+98 21 8882 4675

Email

mahdiyemarzban@gmail.com

Grant name

Grant code / Reference number

Is the source of funding the same sponsor organization/entity?

Yes

Title of funding source

Ahvaz University of Medical Sciences

Proportion provided by this source

100

Public or private sector

Public

Domestic or foreign origin

Domestic

Category of foreign source of funding

empty

Country of origin

Type of organization providing the funding

Academic

Person responsible for general inquiries

Contact

Name of organization / entity

Ahvaz University of Medical Sciences

Full name of responsible person

Dr. Simin Jahani

Position

Associate Professor

Latest degree

Ph.D.

Other areas of specialty/work

Nursery

Street address

Faculty of Nursing and Midwifery, Jundishapur
University of Medical Sciences, Golestan, Ahvaz

City

Ahvaz

Province

Khouzestan

Postal code

613571579

Phone

+98 61 3373 8333

Fax

+98 61 3336 1544

Email

Jahanisimin50@yahoo.com

Person responsible for scientific inquiries

Contact

Name of organization / entity

Ahvaz University of Medical Sciences

Full name of responsible person

Dr. Simin Jahani

Position

Associate Professor

Latest degree

Ph.D.

Other areas of specialty/work

Nursery

Street address

Faculty of Nursing and Midwifery, Jundishapur
University of Medical Sciences, Golestan, Ahvaz

City

Ahvaz

Province

Khouzestan

Postal code

61357-15794

Phone

+98 61 3373 8333

Fax

+98 61 3336 1544

Email

Jahanisimin50@yahoo.com

Person responsible for updating data

Contact

Name of organization / entity

Ahvaz University of Medical Sciences

Full name of responsible person

Mahdiye Marzban

Position

Student

Latest degree

Bachelor

Other areas of specialty/work

Nursery

Street address

Unit 5, No. 226, Ordibehesht Street, Golestan, Ahvaz

City

Ahvaz

Province

Khouzestan

Postal code

6136834771

Phone

+98 61 3320 0105

Email

mahdiyemarzban@gmail.com

Sharing plan

Deidentified Individual Participant Data Set (IPD)

Undecided - It is not yet known if there will be a plan to make this available

Study Protocol

Undecided - It is not yet known if there will be a plan to make this available

Statistical Analysis Plan

Undecided - It is not yet known if there will be a plan to make this available

Informed Consent Form

Undecided - It is not yet known if there will be a plan to

make this available

Clinical Study Report

Undecided - It is not yet known if there will be a plan to make this available

Analytic Code

Undecided - It is not yet known if there will be a plan to make this available

Data Dictionary

Undecided - It is not yet known if there will be a plan to make this available