Clinical Trial Protocol
Iranian Registry of Clinical Trials

07 Nov 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

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Iran (Islamic Republic of)

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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

1

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

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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

1

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

1

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

1

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

2

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

3

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

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2

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Sponsors / Funding sources

1

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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

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Position
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Latest degree
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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