

Clinical Trial Protocol

Iranian Registry of Clinical Trials

10 Jun 2026

A comparative study on the effect of flipped learning and multimedia training on physical activity and postoperative respiratory status in patients undergoing open heart surgery

Protocol summary

Study aim

to determine the effect of flipped learning and multimedia training on physical activity and postoperative respiratory status of the patients after open heart surgery

Design

This randomized clinical trial will be conducted on 60 patients undergoing open heart surgery hospitalized at open heart surgery ward of Imam Reza (AS) hospital in Mashhad, Iran, in 2019

Settings and conduct

This randomized clinical trial will be done on 60 patients that undergo open heart surgery whom hospitalized in open heart surgery ward of Imam Reza (AS) Hospital in Mashhad, Iran, in 2019. The patients will be randomly classified in two intervention groups of multimedia and flipped learning, each of them consists of 30 subjects. The multimedia training will be done by a 15-20 minute session of showing educational video. In this learning method, the educational video will be given to patients before session and then it will be discussed 15-20 minutes in session. These sessions will be repeated three times in both groups. The respiratory function and physical activity will be assessed in both groups before and after intervention.

Participants/Inclusion and exclusion criteria

aged between 18 and 75 years, patient with off pump and on pump bypass surgery on 2- or 3-vessel, ejection fraction above 30%, no history of training about this topic, be alert, having the minimum level of literacy, ability to communicate and speaking, no history of vision problems, no history of pulmonary disease, no desire to continue cooperation, prolonged hospitalization in ICU

Intervention groups

two groups intervention: flipped learning group and multimedia group

Main outcome variables

physical activity and respiratory status

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20190707044131N1**

Registration date: **2020-01-01, 1398/10/11**

Registration timing: **retrospective**

Last update: **2020-01-01, 1398/10/11**

Update count: **0**

Registration date

2020-01-01, 1398/10/11

Registrant information

Name

Gholamreza Sadeghi

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 58 3721 8710

Email address

sadeghigh961@mums.ac.ir

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2019-07-27, 1398/05/05

Expected recruitment end date

2019-09-27, 1398/07/05

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

A comparative study on the effect of flipped learning and multimedia training on physical activity and postoperative respiratory status in patients undergoing open heart surgery

Public title

effect of flipped learning and multimedia training on physical activity and postoperative respiratory status

Purpose

Prevention

Inclusion/Exclusion criteria**Inclusion criteria:**

Being Iranian aged between 18 and 75 years to have a smartphone with ability to show a multimedia (flipped learning group) patient with off pump and on pump bypass surgery on 2- or 3-vessel injectable anesthetics protocol protocol of intravenous pain management be alert having the minimum level of literacy ability to communicate and speaking

Exclusion criteria:

ejection fraction below 30% body mass index above 35 history of training about this topic history of vision problems history of motor disability history of pulmonary disease history of mental disorders occurrence of stressful event Over the last 6 months

Age

From **18 years** old to **75 years** old

Gender

Both

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **60**

Randomization (investigator's opinion)

Randomized

Randomization description

The randomization method is a random block of time. Hospitalized patients will be randomly divided in two groups (flipped learning and multimedia) by SPSS software random sequence generator before sampling. In according to this method the data file contain a variable numbers such as 1-12 and fifty percent of the numbers will be selected by Random-select method. Based on the previous draw, the selected numbers will be omitted A and the deleted numbers will be omitted B, which represent the two intervention groups ,respectively.The 12 blocks per week will be randomly assigned to the two intervention groups.This generated sequence will be kept in a closed envelope and based on this envelope the qualified patients for that week will be determined (from the beginning of sampling at the beginning of each week).

Blinding (investigator's opinion)

Not blinded

Blinding description**Placebo**

Not used

Assignment

Parallel

Other design features**Secondary Ids**

empty

Ethics committees**1****Ethics committee****Name of ethics committee**

Research Ethics Committee -school of Nursing and Midwifery - Mashhad University of Medical Sciences

Street address

Daneshgah Street, Mashhad, Razavi Khorasan

City

Mashhad

Province

Razavi Khorasan

Postal code

13944-91388

Approval date

2019-07-21, 1398/04/30

Ethics committee reference number

IR.MUMS.NURSE.REC.1398.036

Health conditions studied**1****Description of health condition studied**

Ischaemic heart diseases

ICD-10 code

I20-I25

ICD-10 code description

Ischaemic heart diseases

Primary outcomes**1****Description**

Respiratory status

Timepoint

The day before surgery, the first and second days after surgery

Method of measurement

Nursing Outcomes Classification (NOC) tool

Secondary outcomes**1****Description**

Physical activity

Timepoint

The day before surgery, the first and second days after

surgery

Method of measurement

AM-PAC "6 Clicks" tool

Intervention groups

1

Description

In the flipped learning group, rehabilitation training will be done through a flipped learning approach. First, educational content will be delivered to patients by an educational video which can be played on a smartphone. Then this video will be discussed by patients and researchers in a 15-20 minute session. The educational sessions will be done three times in a hospitalized day for surgery, the day after surgery and two days after surgery in the group.

Category

Rehabilitation

2

Description

In the multimedia group, the same educational content is presented for patients by showing educational videos in a 15-20 minute session. The educational sessions will be done three times in a hospitalized day for surgery, the day after surgery and two days after surgery in the group.

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

Imam Reza Hospital in Mashhad

Full name of responsible person

Dr. Abdullah Bahrami

Street address

Imam Reza Hospital, Daneshgah Street

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Razavi Khorasan

Postal code

9137913316

Phone

+98 51 3854 3031

Email

Emamreza@mums.ac.ir

Web page address

<http://Emamreza.mums.ac.ir/>

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Mashhad University of Medical Sciences

Full name of responsible person

Dr. Mohsen Tafaghodi

Street address

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Email

Tafaghodim@mums.ac.ir

Grant name

Grant code / Reference number

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

Yes

Title of funding source

Mashhad 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

Mashhad University of Medical Sciences

Full name of responsible person

Seyed Reza Mazloom

Position

Instructor

Latest degree

Master

Other areas of specialty/work

Nursery

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Email

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Person responsible for scientific

inquiries

Contact

Name of organization / entity

Mashhad University of Medical Sciences

Full name of responsible person

Seyed Reza Mazloom

Position

Instructor

Latest degree

Master

Other areas of specialty/work

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Person responsible for updating data

Contact

Name of organization / entity

Mashhad University of Medical Sciences

Full name of responsible person

Gholamreza Sadeghi

Position

Student

Latest degree

Bachelor

Other areas of specialty/work

Nursery

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Email

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Sharing plan

Deidentified Individual Participant Data Set (IPD)

Yes - There is a plan to make this available

Study Protocol

Yes - There is a plan to make this available

Statistical Analysis Plan

Yes - There is a plan to make this available

Informed Consent Form

Yes - There is a plan to make this available

Clinical Study Report

Yes - There is a plan to make this available

Analytic Code

Yes - There is a plan to make this available

Data Dictionary

Not applicable

Title and more details about the data/document

The data will be shared after being unidentifiable

When the data will become available and for how long

Six months after registering the results

To whom data/document is available

All researchers

Under which criteria data/document could be used

All patients undergo open heart surgery

From where data/document is obtainable

Email sadeghigh961@mums.ac.ir or The library of Mashhad Nursing Faculty is located at the daneshgah street.

What processes are involved for a request to access data/document

First, an email is requested and if non-response for up to a week, you can go to the Nursing Faculty Library of Mashhad .

Comments