

# 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 down through 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 down three times in a hospitalized day for surgery, the day after surgery and two days after surgery in group.

##### **Category**

Rehabilitation

#### **2**

##### **Description**

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

###### **City**

Mashhad

###### **Province**

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**

Daneshgah Street

##### **City**

Mashhad

##### **Province**

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##### **Postal code**

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##### **Phone**

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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

###### **Street address**

Daneshgah Street

###### **City**

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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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**Province**

Razavi Khorasan

**Postal code**

13944-91388

**Phone**

38412081 051

**Email**

sadeghigh961@mums.ac.ir

## **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**