

Clinical Trial Protocol

Iranian Registry of Clinical Trials

19 Jun 2026

Effect of Exercise Training on glycemic control and Lipid Profile among type 2 Diabetic Patients: A randomized controlled trial

Protocol summary

Study aim

this study aimed to assess the effect of regular exercise on achieving optimal HbA1c levels and its impact on cardiovascular risk factors, as measured by parameters such as the lipid profile

Design

This study utilized a randomized controlled design to assess the effects of exercise training on HbA1c levels and lipid profiles in patients with type 2 diabetes. The study was conducted among 80 patients who were allocated into two groups: 40 diabetic patients who were already diagnosed with diabetes for at least one year and 40 non-diabetic patients who had no history of elevated blood sugar levels.

Settings and conduct

This study included patients with type 2 diabetes from outpatient and inpatient clinics in Khartoum, Sudan. The study was carried out in four healthcare facilities in Khartoum, Sudan: the Jaber Abuelez Diabetic Center and Sameer Primary Healthcare Center for diabetic patients, and the Tooty Primary Healthcare Center and Shambat Primary Healthcare Center for non-diabetic patients.

Participants/Inclusion and exclusion criteria

Type 2 diabetic patients who agree to participate in the study.

Intervention groups

The intervention group underwent an exercise training program, which was performed three times per week for one year. It included a 10-15-minute warm-up, relaxation movements for cooldown, and exercise training using weight machines. The program consisted of 10 exercises, with 2 sets of each exercise repeated 10 times.

Main outcome variables

HbA1c levels Lipid profile

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20230827059278N1**

Registration date: **2023-08-30, 1402/06/08**

Registration timing: **retrospective**

Last update: **2023-08-30, 1402/06/08**

Update count: **0**

Registration date

2023-08-30, 1402/06/08

Registrant information

Name

Nahid Elfaki

Name of organization / entity

Najran University

Country

Sudan

Phone

+249 12 298 9400

Email address

weliameen1980@yahoo.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2022-01-04, 1400/10/14

Expected recruitment end date

2023-04-28, 1402/02/08

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Effect of Exercise Training on glycemic control and Lipid Profile among type 2 Diabetic Patients: A randomized controlled trial

Public title

Effect of Exercise Training on glycemic control and Lipid Profile among type 2 Diabetic Patients: A randomized controlled trial

Purpose

Education/Guidance

Inclusion/Exclusion criteria

Inclusion criteria:

Diabetes type 2 Agreement 35-50 years old

Exclusion criteria:

Type 1 diabetes co morbidities

Age

From **35 years** old to **50 years** old

Gender

Both

Phase

2

Groups that have been masked

No information

Sample size

Target sample size: **80**

Randomization (investigator's opinion)

Not randomized

Randomization description

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

International University of Africa, Sudan

Street address

Africa Street

City

Khartoum

Postal code

00249

Approval date

2022-01-04, 1400/10/14

Ethics committee reference number

IUA/FM/04/01/22-04

Health conditions studied

1

Description of health condition studied

The study was conducted among 80 patients who were

allocated into two groups: 40 diabetic patients who were already diagnosed with diabetes for at least one year and 40 non-diabetic patients who had no history of elevated blood sugar levels.

ICD-10 code

E08

ICD-10 code description

Diabetes mellitus due to underlying condition

Primary outcomes

1

Description

Glycemic Control

Timepoint

one year

Method of measurement

HbA1C

2

Description

Lipid profile

Timepoint

one year

Method of measurement

Lipid profile test

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group: It includes a 10-15-minute warm-up, relaxation movements for cooldown, and exercise training using weight machines. The program consisted of 10 exercises, with 2 sets of each exercise repeated 10 times.

Category

Lifestyle

2

Description

Control group: no change in their lifestyle and exercise

Category

N/A

Recruitment centers

1

Recruitment center

Name of recruitment center

Jaber Abuelez Diabetic Center

Full name of responsible person

Maha Ali

Street address

Khartoum North

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Web page address**2****Recruitment center****Name of recruitment center**

Sameer Primary Healthcare Center

Full name of responsible person

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Sponsors / Funding sources**1****Sponsor****Name of organization / entity**

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Grant name**Grant code / Reference number****Is the source of funding the same sponsor organization/entity?**

No

Title of funding source

self

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**

King Khalid University

Full name of responsible person

Maha Ali

Position

Associate Professor

Latest degree

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Other areas of specialty/work

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Person responsible for updating data**Contact**

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Sharing plan**Deidentified Individual Participant Data Set (IPD)**

Yes - There is a plan to make this available

Study Protocol

No - There is not 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

Not applicable

Data Dictionary

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

Title and more details about the data/document

NA

When the data will become available and for how long

NA

To whom data/document is available

NA

Under which criteria data/document could be used

NA

From where data/document is obtainable

NA

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

NA

Comments

NA