

Clinical Trial Protocol

Iranian Registry of Clinical Trials

19 Sep 2026

Comparison of video-assisted instruction and conventional teaching method's effects on students' performance in root canal obturation

Protocol summary

Study aim

Comparison of the effectiveness of video training on the performance of dental students in filling the root canal

Design

Intervention with parallel groups, one-sided, randomized to 33 students

Settings and conduct

This study was performed in Birjand Dental School of South Khorasan Province in 1400. 33 students will be randomly divided into 3 intervention groups: the first group will receive a regular demonstration, the second group will receive a video tutorial, and the third group will receive a regular video demonstration. Students with entry and exit conditions into three groups enter one of the three intervention groups by simple random sampling and block construction (triple blocks). After the intervention, the students' performance is evaluated based on a checklist by 2 endodontics specialists.

Participants/Inclusion and exclusion criteria

Participants in the study who passed the prerequisite course of Endodontics 1 practical principles unit, had informed consent to participate in the study, as well as complete physical health were included in the study. Exclusion criteria will include a party or transfer from the origin to another medical university.

Intervention groups

Students of Birjand University of Medical Sciences with inclusion and exclusion criteria are randomly selected in one of the usual demonstration groups, the second group is trained using educational videos and the third group is trained through regular demonstration with video.

Main outcome variables

Student performance

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20190618043934N10**

Registration date: **2021-06-16, 1400/03/26**

Registration timing: **registered_while_recruiting**

Last update: **2021-06-16, 1400/03/26**

Update count: **0**

Registration date

2021-06-16, 1400/03/26

Registrant information

Name

Zabihullah Mohaghegh

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 56 3232 3232

Email address

oabstudent@gmail.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2021-06-05, 1400/03/15

Expected recruitment end date

2021-06-20, 1400/03/30

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparison of video-assisted instruction and conventional teaching method's effects on students' performance in root canal obturation

Public title

Comparison of different types of training methods in filling the root canal of the tooth.

Purpose

Education/Guidance

Inclusion/Exclusion criteria

Inclusion criteria:

Having informed consent to participate in the study
having complete physical health
Passing the prerequisite course of the unit of practical principles of endodontics 1

Exclusion criteria:

Moving from or to other medical universities

Age

No age limit

Gender

Both

Phase

N/A

Groups that have been masked

- Outcome assessor
- Data analyser

Sample size

Target sample size: 33

Randomization (investigator's opinion)

Randomized

Randomization description

Participants in the study were randomly divided into three groups of intervention by simple blocking method: the first group (A) receiving routine demonstration, the second group (B) receiving video training and the third group (C) through routine demonstration with video. They will be. Students with entry and exit conditions into three groups are randomly selected by block method (triple blocks). In this way, various triple blocks are created first (ACB, CAB, CBA, BAC, BCA and ABC). One of these blocks will be randomly selected and patients will be divided into one of three groups A or B or C. Then randomization is performed for other students in the same way.

Blinding (investigator's opinion)

Single blinded

Blinding description

Teachers and the person analyzing the results perform the necessary evaluation and analysis without knowing the type of student intervention.

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics Committee of Birjand University of Medical

Street address

Vice Chancellor for Research and Technology, Birjand University of Medical Sciences, Ghaffari Blvd, Birjand Town

City

Birjand

Province

South Khorasan

Postal code

9717811674

Approval date

2020-07-07, 1399/04/17

Ethics committee reference number

IR.BUMS.REC.1399.161

Health conditions studied

1

Description of health condition studied

Root canal infection

ICD-10 code

K02.7

ICD-10 code description

Dental root caries

Primary outcomes

1

Description

Function

Timepoint

48 hours after teaching students

Method of measurement

Using a checklist that evaluates the following 3 items by endodontics experts. 1. Presence / absence of bubbles 0 to 8 points 2. Filling density 0 to 6 points 3. Filling length 0 to 6 points

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group 1: The students of the first group (11 Students) came to the phantom on a certain date according to the schedule for direct training or the usual demonstration. Demonstration of dental canal filling by one of the endodontists of Birjand Dental School was done according to Torabi Nejad 2019 reference on a two-channel premolar whose canals were prepared in advance. In this method, 10 students were trained through direct observation of the teacher for 20 minutes and the necessary points were provided to them.

Category

Treatment - Other

2

Description

Intervention group 2: To teach the second group (11 students), we selected the video "Teaching Lateral Technique" from the educational site of Dr. Yazdan Shantaei, a member of the faculty of Shahid Beheshti Dental School. They taught and all students could easily observe each step closely. The video was played on a projector in a phantom environment for the students of this group at the scheduled time. The duration of this video was 20 minutes. After watching the video, the students were provided with a link to this video so that they could watch the video as many times as they wanted.

Category

Treatment - Other

3

Description

Intervention group 3: The students of the third group (11 students) were first instructed in the same way as the root canal specialist and then the video presented to the second group was broadcast in the educational environment (phantom). The video link was also provided to this group to watch.

Category

Treatment - Other

Recruitment centers

1

Recruitment center

Name of recruitment center

Birjand Dental School

Full name of responsible person

Mahla Ahmadi

Street address

Birjand Dental School, Pasdaran Blvd, Birjand Town

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Birjand University of Medical Sciences

Full name of responsible person

Dr. Tooba Kazemi

Street address

Vice Chancellor for Research and Technology, Birjand University of Medical Sciences, Ghaffari Blvd, Birjand Town

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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

Birjand 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

Birjand University of Medical Sciences

Full name of responsible person

Zabihullah Mohaghegh

Position

Student

Latest degree

Medical doctor

Other areas of specialty/work

General Practitioner

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No. 56, Jorjani Ave, Ghaffari Blvd, Birjand Town

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Person responsible for scientific inquiries

Contact

Name of organization / entity

Birjand University of Medical Sciences

Full name of responsible person

Dr Soheila Darmiani

Position

Member of the Faculty

Latest degree

Specialist

Other areas of specialty/work

Dentistry

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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

Person responsible for updating data**Contact****Name of organization / entity**

Birjand University of Medical Sciences

Full name of responsible person

Zabihullah Mohaghegh

Position

Student

Latest degree

Medical doctor

Other areas of specialty/work

General Practitioner