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
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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

**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

**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
2. Filling density
3. Filling length

**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.

**Ethics committees**

1. **Ethics committee**
   - **Name of ethics committee**
     - Ethics Committee of 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

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

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**Province**
South Khorasan

**Postal code**
9717811674

**Approval date**
2020-07-07, 1399/04/17

**Ethics committee reference number**
IR.BUMS.REC.1399.161
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
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Sponsors / Funding sources

1

Sponsor
Name of organization / entity
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Full name of responsible person
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Street address

Contact
Name of organization / entity
Birjand University of Medical Sciences
Full name of responsible person
Zabihullah Mohaghegh
Position
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Latest degree
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Other areas of specialty/work
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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