Clinical Trial Protocol
Iranian Registry of Clinical Trials

18 Nov 2026

Investigating the effect of the augmented reality game of oral health education on the level of oral health knowledge of orthodontic patients 8 to 12 years old : A pilot study

Protocol summary

Study aim

Determining the effect of augmented reality oral health education game on oral health knowledge of 8-12 year old orthodontic patients

Design

The present study is a field trial. Using a simple randomization, 17 children will be in the intervention group (dentist augmented reality game) and 17 children will be in the control group (oral and dental health education in the form of educational pamphlets). The rand function of Excel software was used for randomization.

Settings and conduct

The present study will be conducted in a private orthodontic practice in Zanjan city, and patients who are eligible to participate in the study will be used. Blinding of the evaluators and the people who will perform the statistical analysis will be done. And after one week and one month, the level of awareness of children about oral and dental health will be checked using a questionnaire.

Participants/Inclusion and exclusion criteria

Children 8 to 12 years old Ability to read and write Having a smart phone An orthodontic patient who has been treated with a orthodontic appliance.

Intervention groups

In the intervention group, an educational game designed for children's oral health education is presented, and in the control group, only one oral health educational pamphlet is presented. The augmented reality game is designed based on the snake and ladder game design with practice houses. And the houses are in question. In the intervention group, the link to install the software is provided to the patient, and after installing the software on the mobile phone, the game is launched by placing the mobile phone camera on the game logo.

Main outcome variables

new technologies such as augmented reality games can be used to improve children's knowledge in the field of oral and dental health.

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20210911052431N2**
Registration date: **2023-12-03, 1402/09/12**
Registration timing: **registered_while_recruiting**

Last update: **2023-12-03, 1402/09/12**
Update count: **0**

Registration date

2023-12-03, 1402/09/12

Registrant information

Name

Azin Nourian

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 24 3314 8100

Email address

azin.nourian@gmail.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2023-12-01, 1402/09/10

Expected recruitment end date

2024-01-30, 1402/11/10

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Investigating the effect of the augmented reality game of oral health education on the level of oral health knowledge of orthodontic patients 8 to 12 years old : A pilot study

Public title

Investigating the effect of the augmented reality game of oral health education on the level of oral health knowledge of orthodontic patients 8 to 12 years old

Purpose

Prevention

Inclusion/Exclusion criteria

Inclusion criteria:

Children 8 to 12 years old Ability to read and write Having a smart phone An orthodontic patient who has been treated with orthodontic appliance

Exclusion criteria:

Non-cooperation of the child or parents and failure to complete the parental informed consent form Children with mental problems and blindness People who have not received orthodontic treatment

Age

From **8 years** old to **12 years** old

Gender

Both

Phase

N/A

Groups that have been masked

- Investigator
- Data analyser

Sample size

Target sample size: **34**

Randomization (investigator's opinion)

Randomized

Randomization description

simple randomization

Blinding (investigator's opinion)

Single blinded

Blinding description

The study is blinded, and the evaluators and the person who performs the data analysis are blinded to the sample allocation. In this study, it is not possible to keep the patient blind because the intervention is in the form of providing an educational game to the patient.

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics Committee of Zanjan University of Medical Sciences

Street address

Mahdavi Blvd, Zanjan university of medical sciences, Zanjan, Iran

City

Zanjan

Province

Zanjan

Postal code

4513956184

Approval date

2023-10-31, 1402/08/09

Ethics committee reference number

IR.ZUMS.REC.1402.177

Health conditions studied

1

Description of health condition studied

Evaluation of the level of awareness of oral health

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

Evaluation of the level of awareness of oral health

Timepoint

Time zero, one week and one month after the start of the intervention

Method of measurement

Oral health questionnaire will be knowledge, attitude and behavior

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group:

Category

Other

2

Description

Intervention group: The intervention group will be presented with how to implement the oral and dental

augmented reality educational game by sending a link and installing the software on the mobile phone. After installing the software on the mobile phone, the game is launched by placing the mobile phone camera on the game logo. This game is as common as Marpleh game, and the dice move in virtual space by throwing dice. Children are asked to play this game every day for a week while their parents watch. In the educational game.In the educational game, there are lessons based on the educational concepts of oral health in children with topics such as: correct brushing methods, flossing, familiarization with healthy food sources, factors leading to oral and dental diseases, recommendations for dental visits, etc. is. The post-test will be taken once after a week and again after a month from the children of both groups. The standard questionnaire of knowledge, attitude and behavior of oral and dental health will be presented to the participants and if they do not receive an answer, they will be contacted. It will be taken to ask them questions and answers verbally, and if the participant does not want to complete the questionnaire, they will be excluded from the study.

Category
Behavior

Recruitment centers

1

Recruitment center

Name of recruitment center
Private dental office

Full name of responsible person
Azin Nourian

Street address
Middle Saadi , in front of Pasargad Bank, corner of Bagheri Street, No. 3, first floor

City
Zanajn

Province
Zanjan

Postal code
4513915315

Phone
+98 24 3333 2655

Email
azin.nourian@gmail.com

Sponsors / Funding sources

1

Sponsor

Name of organization / entity
Zanjan University of Medical Sciences

Full name of responsible person
Azin Nourian

Street address
Mahdavi Blvd, Zanjan univeristy of medical sciences, Zanjan, Iran

City
Zanjan

Province
Zanjan

Postal code
4513956184

Phone
+98 24 3314 8100

Email
info@zums.ac.ir

Grant name

Grant code / Reference number

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

Title of funding source
Zanjan 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
Zanjan University of Medical Sciences

Full name of responsible person
Azin Nourian

Position
Assistant Professor

Latest degree
Specialist

Other areas of specialty/work
Dentistry

Street address
Mahdavi Blvd, Zanjan dental school, Zanjan ,Zanjan University of Medical Sciences

City
Zanjan

Province
Zanjan

Postal code
4513956184

Phone
+98 24 3314 8100

Email
azin.nourian@gmail.com

Person responsible for scientific inquiries

Contact

Name of organization / entity
Zanjan University of Medical Sciences

Full name of responsible person
Azin Nourian

Position
Assistant Professor
Latest degree
Specialist
Other areas of specialty/work
Dentistry
Street address
Mahdavi Blvd, Zanjan dental school, Zanjan Unversity of medical sciences, Iran
City
Zanjan
Province
Zanjan
Postal code
4513956184
Phone
+98 24 3314 8100
Email
azin.nourian@gmail.com

Person responsible for updating data

Contact
Name of organization / entity
Zanjan University of Medical Sciences
Full name of responsible person
Azin Nourian
Position
Assistant Professor
Latest degree
Specialist
Other areas of specialty/work
Dentistry
Street address
Mahdavi Blvd, Zanjan dental school, Zanjan University of Medical Sciences, Iran
City
Zanjan
Province
Zanjan
Postal code
4513956184
Phone
009833148100
Email
azin.nourian@gmail.com

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
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
Undecided - It is not yet known if there will be a plan to make this available
Data Dictionary
Not applicable
Title and more details about the data/document
It has not been decided on the presentation of personal information of the participants, and if it is presented, it will be anonymous and non-identifiable. Data analysis and informed consent form can be shared.
When the data will become available and for how long
The access period will start 6 months after the results are published.
To whom data/document is available
It will be available for researchers working in academic and scientific institutions
Under which criteria data/document could be used
The relevant request has been sent to the project manager, and if approved, the requested documents will be sent.
From where data/document is obtainable
Email Address: a.nourian@zums.ac.ir
What processes are involved for a request to access data/document
After studying the researcher's request, an answer will be provided within one to two weeks.
Comments