Clinical Trial Protocol
Iranian Registry of Clinical Trials

18 Sep 2026

Investigating the effect of landscape and planting design in improving children’s neuropsychological health in hospital environments

Protocol summary

Study aim

The aim of this study was to investigate the effect of landscape and planting design in improving children’s neuropsychological health in hospital environments.

Design

This study is a randomized non-blind clinical trial in which 60 persons including doctors, nurses and hospital workforce, and 120 persons, including the children and their parents, will randomly be selected; and 60 children hospitalized are randomly divided into two groups of intervention and control.

Settings and conduct

The site of the study is Akbar Children's Super Specialty Hospital. The research method is a questionnaire survey and interventional (semi-experimental) research.

Participants/Inclusion and exclusion criteria

Phase 1 and 3: All children aged in a range of 6 to 15 years old with their parents; and also, parents of the participant children must have at least completed their first year of primary school. Phase 2: Only all physicians, nurses and personnel who work as staff members in the hospital are eligible to attend in this survey.

Intervention groups

Sick children who come to the Akbar Children's Super Specialty Hospital after sampling and checking the criteria for entering and leaving, register the patient's physical factors at the time of entering the hospital, then fill out a questionnaire, then, when the patient is discharged from the hospital and attending the rooms, the patient's physical factors will be recorded again and the questionnaire will be filled in. The children of the experimental group are placed in pre-designed rooms with herbs for 3 days, and the control group children do not receive any interventions.

Main outcome variables

The neuropsychological health

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20180428039451N1**
Registration date: **2018-06-20, 1397/03/30**
Registration timing: **registered_while_recruiting**

Last update: **2018-06-20, 1397/03/30**
Update count: **0**

Registration date

2018-06-20, 1397/03/30

Registrant information

Name
Maryam Allahyar
Name of organization / entity
The Ferdowsi University of Mashhad
Country
Iran (Islamic Republic of)
Phone
+98 51 3880 5000
Email address
fatemeh.kazemi@um.ac.ir

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2018-05-29, 1397/03/08

Expected recruitment end date

2019-02-20, 1397/12/01

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title
Investigating the effect of landscape and planting design in improving children’s neuropsychological health in hospital environments

Public title
Investigating the effect of landscape and planting design in improving children’s neuropsychological health in hospital environments

Purpose
Supportive

Inclusion/Exclusion criteria

Inclusion criteria:
Major conditions for entering into the first phase of the study based on Questionnaire No. 1: All sick children should have an age ranged from 6 to 15 years old in Akbar Children's Super Specialty Hospital. They must not be categorized in exceptional groups of children such as those with Intelligence Development Disabilities (IDD), and the Autism spectrum Children's Group and the group of children with anxiety and attention deficit disorders. The parents of these children, must have the following characteristics: 1. Only the parents of the children with an age ranged from 6 to 15 years old will participate in the first questionnaire survey. 2. These parents must have completed at least grade 1 of the primary educational levels. Major conditions for entering into the second phase of the study based on Questionnaire No. 2: Only doctors, nurses and personnels who work in the workforce of Akbar Children's Super Specialty Hospital are included. Major conditions for entering into the third phase of the study based on Questionnaire No. 3: All parents of the children hospitalized in Akbar Children's Super Specialty Hospital are permitted to participate in this survey providing that: 1. Their child is in age range of 6 to 15 year. 2. They have completed at least grade 1 of the primary educational levels.

Exclusion criteria:
Major non-entry conditions include parents with an income less than $ 2 million tomans. Those who are dependent to psychiatric and narcotic medicines.

Age
From **6 years** old to **15 years** old

Gender
Both

Phase
N/A

Groups that have been masked
No information

Sample size
Target sample size: **240**

Randomization (investigator's opinion)
Randomized

Randomization description
This research is a simple random method in which by inserting numbers on the paper, the rooms and beds belonging to the control group and the test group are randomly identified by the head nursing team. In the second step, the patient's children who come to the hospital take the paper containing their bed number and room number from inside a dish in which their bed and room number is inserted. The paper also states that the patient's bed and room are in the control group or the intervention group.

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
Ethics committee of Mashhad University of Medical Sciences

Street address
Iran, Khorasan Razavi, Mashhad, University Street, Quraishi Building, Head of Department of Khorasan Razavi University of Medical Sciences and Health Services

City
Mashhad

Province
Razavi Khorasan

Postal code
۹۱۷۷۹۴۸۹۷۴

Approval date
2018-03-03, 1396/12/12

Ethics committee reference number
IR.MUMS.REC.1396.398

Health conditions studied

1

Description of health condition studied
The neuropsychological health

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description
The neuropsychological health

Timepoint
For the third questionnaire, the measurements will be done first at the time of entering into the hospital, then at the time of discharge from the hospital and in fact after being hospitalized in the expected rooms. (It's worth noting that investigations in questionnaires 1 and 2 do not have limited measure periods).

Method of measurement

Questionnaire

Secondary outcomes

empty

Intervention groups

1

Description

The first intervention group: includes the children admitted and hospitalized in Akbar Children's Super Specialty Hospital. In the first step, the opinions, needs and preferences of the user group (sick children) are evaluated using a questionnaire survey. Designing the questionnaire and the method of survey is adapted from Todorova et al.(2004). The method will be such that photomontages will first be provided as flash cards to the patient's child and the patients will be guided by the surveyor to complete his or her questionnaire based on the photos. In this research, photographs will be printed and provided to the respondent group (sick children).

Category

Rehabilitation

2

Description

The second intervention group: In the second step, in order to assess the preferences about the landscape of the hospital space and its impact on sick children based on the experts' idea, a questionnaire will be adapted from Petros and Georgi (2011). This questionnaire will be available to the experts and will be carefully filled in by them.

Category

Rehabilitation

3

Description

The third intervention group: In the third step, the visual effect of green spaces on physical and neuropsychological improvement of two groups of sick children (group A:(experimental group) sick children in a room with natural plants and scenes that are not harmful to the patients; and group B: (control group) patient children in a room without natural plants will be assessed and compared in Akbar Children's Super Specialty Hospital. The method of the work will be to fill physical and neuropsychological state of the child by recording their physical factors which are approved by a specialist team, and then a questionnaire that has been approved by several specialists, will be filled at the admission time to the hospital. The same questionnaire will be filled by the patient children once the patient has been discharged from the hospital. The patient's physical factors will also be re-recorded when the patient is discharged from the hospital.

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

Akbar Children's Super Specialty Hospital

Full name of responsible person

Maryam Allahyar

Street address

In front of Shahid Kaveh 14, Shahid Kale boulevard, Akbar Children's Super Specialty Hospital

City

Mashhad

Province

Razavi Khorasan

Postal code

۹۱۷۷۹۴۸۹۷۴

Phone

+98 51 3880 5000

Fax

Email

allahyar.maryam9@gmail.com

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Mashhad Ferdowsi University

Full name of responsible person

Dr. Ahmad Reza Bahrami

Street address

Faculty of Agriculture, Ferdowsi University of Mashhad, University of Pardis, Azadi Square, Mashhad, Khorasan Razavi, Iran

City

Mashhad

Province

Razavi Khorasan

Postal code

۹۱۷۷۹۴۸۹۷۴

Phone

+98 51 3880 5000

Email

allahyar.maryam9@gmail.com

Grant name

Grant code / Reference number

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

Yes

Title of funding source

Mashhad Ferdowsi University

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

Ferdowsi University of Mashhad

Full name of responsible person

Maryam Allahyar

Position

Student Master of Science in Horticulture and Greening Engineering

Latest degree

Bachelor

Other areas of specialty/work

Green space engineering

Street address

Faculty of Agriculture, Ferdowsi University of Mashhad, University of Pardis, Azadi Square, Mashhad, Khorasan Razavi, Iran

City

Mashhad

Province

Razavi Khorasan

Postal code

۹۱۷۷۹۴۸۹۷۴

Phone

+98 51 3880 5000

Email

allahyar.maryam9@gmail.com

Person responsible for scientific inquiries

Contact

Name of organization / entity

Mashhad Ferdowsi University

Full name of responsible person

Fatemeh Kazemi

Position

Associate professor

Latest degree

Ph.D.

Other areas of specialty/work

Green space engineering

Street address

Faculty of Agriculture, Ferdowsi University of Mashhad, University of Pardis, Azadi Square, Mashhad, Khorasan Razavi, Iran

City

Mashhad

Province

Razavi Khorasan

Postal code

۹۱۷۷۹۴۸۹۷۴

Phone

+98 51 3880 5000

Email

fatemeh.kazemi@um.ac.ir

Person responsible for updating data

Contact

Name of organization / entity

Mashhad Ferdowsi University

Full name of responsible person

Maryam Allahyar

Position

Student Master of Science in Horticulture and Greening Engineering

Latest degree

Bachelor

Other areas of specialty/work

Green space engineering

Street address

Faculty of Agriculture, Ferdowsi University of Mashhad, University of Pardis, Azadi Square, Mashhad, Khorasan Razavi, Iran

City

Mashhad

Province

Razavi Khorasan

Postal code

۹۱۷۷۹۴۸۹۷۴

Phone

+98 51 3880 5000

Email

allahyar.maryam9@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

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

Not applicable

Data Dictionary

Not applicable