Clinical Trial Protocol
Iranian Registry of Clinical Trials

03 Jul 2026

the effect of treatment based on movement system impairment classification theory in people with knee pain (a randomized control trial)

Protocol summary

Study aim
the investigation of the treatment effect based on movement system impairment classification theory in people with knee pain

Design
a randomized controlled trial with equivalent intervention and control groups, single blinded on 60 patients, consecutive simple individual randomization (in order of referral)

Settings and conduct
place: Shahid Beheshti physiotherapy clinic. After examination and diagnosis of movement impairment, the expert colleague classify them into intervention and control groups randomly. During 10 sessions in 6 weeks, researcher accomplishes the predetermined physiotherapy treatments for each group. data collection, outcome measure assessment , data analysis is done by the colleague,using questionnaires for investigating function and disability, visual analogue scale and video camera to recording knee projection angle

Participants/Inclusion and exclusion criteria
inclusion criteria: patients with knee rotational syndrome or patellar lateral glide syndrome. Pain at least 3 on the visual analog scale. knee Pain during running or jumping. exclusion criteria: pregnancy

Intervention groups
intervention1:patients with knee rotation syndrome with valgus control 1: patients with knee rotation syndrome with valgus intervention 2:patients with knee rotation syndrome with varus control 2: patients with knee rotational syndrome with varus intervention 3:patients with patellar lateral glide syndrome control 3: patients with patellar lateral glide syndrome similar treatments for control groups:10 sessions in 6 weeks: , electrotherapy,Ultrasound, exercices. intervention groups : the above treatment plus education and modification of functional activities, improve performance of hip lateral rotators and abductors and extensibility of iliotibial band

Main outcome variables
pain intensity, disability Level, Function level, Knee frontal plane projection angle.

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20190222042801N1**
Registration date: **2020-12-17, 1399/09/27**
Registration timing: **retrospective**

Last update: **2020-12-17, 1399/09/27**
Update count: **0**

Registration date
2020-12-17, 1399/09/27

Registrant information

Name
Parisa Zamani

Name of organization / entity

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Iran (Islamic Republic of)

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Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2019-04-21, 1398/02/01

Expected recruitment end date
2019-08-23, 1398/06/01

Actual recruitment start date
2019-08-22, 1398/05/31

Actual recruitment end date
2019-08-22, 1398/05/31
Trial completion date
2019-08-22, 1398/05/31

Scientific title
the effect of treatment based on movement system impairment classification theory in people with knee pain (a randomized control trial)

Public title
the effect of physiotherapy on knee pain
Purpose
Treatment
Inclusion/Exclusion criteria
Inclusion criteria:
patients with knee rotation syndrome or pateller lateral glide syndrome knee pain during running or jumping knee pain at least 3 on visual analog scale
Exclusion criteria:
Pregnancy
Age
From **18 years** old to **50 years** old
Gender
Both

Phase
N/A
Groups that have been masked

- Outcome assessor
- Data analyser

Sample size
Target sample size: **60**
Actual sample size reached: **60**
Randomization (investigator's opinion)
Randomized
Randomization description
the sampling method in the present study is consecutive. It means that the expert colleague gets present at the patients' referral site (Shahid Beheshti rehabilitation clinic) from the beginning of the study, and patients who are eligible to participate in the study are identified and then, invited to participate in the study. Therefore, randomization is occurred consecutively. It should be noted that only one rehabilitation center is sampled in this study. In this study, simple randomization method is used and randomization unit is individual. In this way,the eligible participant with diagnosis of having one of the three identified movement impairment syndrome is classified to a primary group with the other ones with the same impairment first. then in each group with the same movement impairment people are numbered by order of their referral. individuals who the odd number assigned to them are included in intervention group and participants with the even numbers are included in control groups.for example, if the primary diagnosis is rotational syndrome with varus,number one is assigned to the first participant with this movement impairment and number two assigned to the second one with the same diagnosis. so the first odd number is included in intervention group for rotational syndrome with varus and the second person with this syndrome with even number two is included to control group of the same subcategory and the way is continued until the assigned number of each group are entered in to the study for this diagnosis group. randomization for other subcategories are done the same way based on their primary diagnosis and by order of their referral.
Blinding (investigator's opinion)
Single blinded
Blinding description
In the present study، the expert experienced colleague who has passed more than 100 hours instructions in clinical diagnosis of movement system impairment is responsible to do: 1-Systematic examinations and diagnosis the movement system impairments of the clients 2- Randomization of participants into intervention or control groups. All of these procedures are done based on the study inclusion criterion and clinical recognition conceptions of the movement system impairment theory, furthermore; the researcher is blind to them. But all treatment sessions are done completely by the researcher. All intervention groups are treated specifically based on the movement system impairment classification theory for knee pain and all control groups treatments are based on routine treatment protocols for knee pain suggested by physiotherapy reference texts. Data collection in predetermined times is done by another co worker who is blind same as the researcher. Outcome measure assessment and data analysis are done by statistics consultant of the project but the researcher is also blind to all of these.
Placebo
Not used
Assignment
Parallel
Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
Ethics Committee of Ahwaz University of Medical Sciences
Street address
Jondishapour University of Medical Sciences., Golestan St., Golestan Hwy
City
Ahwaz
Province
Khouzestan
Postal code
61357-15794
Approval date
2019-01-15, 1397/10/25
Ethics committee reference number
IR.AJUMS.REC.1397.744

Health conditions studied

1

Description of health condition studied
knee pain
ICD-10 code
M25.56
ICD-10 code description
knee Pain

Primary outcomes

1

Description
pain intensity
Timepoint
Before treatment beginning, at the end of the third week in the middle of treatment period, at the end of the sixth week after treatment finishing and at the twelfth week the end of follow up period.
Method of measurement
with visual analog scale

2

Description
disability level
Timepoint
Before treatment beginning, at the end of the third week in the middle of treatment period, at the end of the sixth week after treatment finishing and at the twelfth week the end of follow up period.
Method of measurement
with knee injury and osteoarthritis outcome score questionnaire

3

Description
function level
Timepoint
Before treatment beginning, at the end of the third week in the middle of treatment period, at the end of the sixth week after treatment finishing and at the twelfth week, the end of follow up period.
Method of measurement
with lower extremity functional scale questionnaire

4

Description
knee joint frontal plane projection angle
Timepoint
Before treatment beginning, at the end of the sixth week after treatment finishing and the end of the twelfth week, after follow up period.
Method of measurement
with video camera and Kinovea software

Secondary outcomes

empty

Intervention groups

1

Description
Intervention group 1: Patients with knee rotation syndrome with valgus who are given specific treatment based on movement system impairment classification theory within 10 sessions in 6 weeks. Each session takes one hour and a half including specific treatments plus routine ones. Specific treatments including: 1- Improve muscle performance of hip lateral rotators and abductors 2- Improve extensibility of iliotibial (I.T.B) band 3- Posterior x taping of knee 4- Education and modification of functional activities that contribute to impaired motion of knee 5- address pronation foot; Routine physiotherapy treatments including: 1- Hot pack 2- Electrical stimulation (inferential current around knee and functional electrical stimulation on knee muscles) 3- Ultrasound wave with 3 MHz frequency with continuous mode on lateral and posterior aspect of knee In the earlier four weeks, every week we should accomplish two treatment sessions and during two weeks after, each week one treatment session is done .
Category
Rehabilitation

2

Description
Intervention group 2: Patients with knee rotation syndrome with varus who are given specific treatment based on movement system impairment classification theory within 10 sessions in 6 weeks. Each session takes one hour and a half including specific treatments plus routine ones. Specific treatments including: 1- Improve muscle performance of hip lateral rotators and abductor 2- Improve extensibility of iliotibial (I.T.B) band 3- Posterior x taping of knee 4- Education and modification of functional activities that contribute to impaired motion of knee 5- Improve shock absorb- heel to toe pattern; Routine physiotherapy treatments including: 1- Hot pack 2- Electrical stimulation (inferential current around knee and functional electrical stimulation on knee muscles) 3- Ultrasound wave with 3 MHz frequency with continuous mode on lateral and posterior aspect of knee In the earlier four weeks, every week we should accomplish two treatment sessions and during two weeks after, each week one treatment session is done .
Category
Rehabilitation

3

Description
Intervention group 3: patients with patellar lateral glide syndrome who are given specific treatment based on movement system impairment classification theory within 10 sessions in 6 weeks. Each session takes one

hour and a half including specific treatments plus routine ones. Specific treatments including: 1-Limit prolonged knee flexion 2-Improve muscle performance of quadriceps 3- Improve extensibility of iliotibial band 4- Mobilization- patellar medial glide 5- Medial taping of patella; Routine physiotherapy treatments including: 1- Hot pack 2- Electrical stimulation (inferential current around knee and functional electrical stimulation on knee muscles) 3- Ultrasound wave with 3 MHz frequency with continuous mode on lateral and posterior aspect of knee In the earlier four weeks, every week we should accomplish two treatment sessions and during two weeks after, each week one treatment session is done .

Category

Rehabilitation

4

Description

Control group 1: patients with knee rotation syndrome with valgus who are given the same routine physiotherapy treatment regardless of their movement impairment. Each session takes one hour and a half including: 1-Hot pack 2-Electrical stimulation (inferential current around knee and functional electrical stimulation on knee muscles) 3- Ultrasound wave with 3 MHz frequency with continuous mode on lateral and posterior aspect of knee 4- Quadriceps strengthening exercise and stretching posterior muscles of the knee In the earlier four weeks, every week we should accomplish two treatment sessions and during two weeks after, each week one treatment session is done .

Category

Rehabilitation

5

Description

Control group 2: patients with knee rotation syndrome with varus who are given the same routine physiotherapy treatment regardless of their movement impairment. Each session takes one hour and a half including: 1-Hot pack 2-Electrical stimulation (inferential current around knee and functional electrical stimulation on knee muscles) 3- Ultrasound wave with 3 MHz frequency with continuous mode on lateral and posterior aspect of knee 4- Quadriceps strengthening exercise and stretching posterior muscles of the knee In the earlier four weeks, every week we should accomplish two treatment sessions and during two weeks after, each week one treatment session is done .

Category

Rehabilitation

6

Description

Control group 3: patients with patellar lateral glide syndrome who who are given the same routine physiotherapy treatment regardless of their movement impairment. Each session takes one hour and a half including: 1-Hot pack 2-Electrical stimulation (inferential current around knee and functional electrical stimulation on knee muscles) 3- Ultrasound wave with 3 MHz frequency with continuous mode on lateral and posterior aspect of knee 4- Quadriceps strengthening exercise and stretching posterior muscles of the knee In the earlier four weeks, every week we should accomplish two treatment sessions and during two weeks after, each week one treatment session is done .

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

Physiotherapy clinic of Rehabilitation Faculty , Shahid Beheshti University of Medical Sciences

Full name of responsible person

Dr. Mohammad Jafar Shaterzadeh Yazdi

Street address

Shahid Beheshti Physiotherapy Clinic., Physiotherapy group., Rehabilitation Faculty., Shahid Beheshti University of Medical Science., Damavand street (in front of Buali Hospital)

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Ahvaz University of Medical Sciences

Full name of responsible person

Dr. Mehdi Ahmadimoghadam

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research and technology department., university department., Jondishapour University of Medical Science., Golestan St., Golestan Hwy

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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

Ahvaz 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

Ahvaz University of Medical Sciences

Full name of responsible person

Dr. Mohammad Jafar Shaterzadeh

Position

Associate Professor

Latest degree

Ph.D.

Other areas of specialty/work

Physiotherapy

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Person responsible for scientific inquiries

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Name of organization / entity

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Full name of responsible person

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Position

Professor

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Person responsible for updating data

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Full name of responsible person

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Latest degree

Ph.D.

Other areas of specialty/work

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Sharing plan

Deidentified Individual Participant Data Set (IPD)

No - There is not a plan to make this available

Justification/reason for indecision/not sharing IPD

No more information

Study Protocol

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

Statistical Analysis Plan

Not applicable

Informed Consent Form

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

make this available

Clinical Study Report

Not applicable

Analytic Code

Not applicable

Data Dictionary

Not applicable