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Dry needling, neuromuscular taping, therapeutic exercise, or all three in sequence, for older women with chronic lower-limb pain: effects on quality of life

Submission date
02/11/2026

Recruitment status
No longer recruiting

Registration date
03/11/2026

Overall study status
Completed

Last Edited
02/11/2026

Condition category
Signs and Symptoms

[ ] Prospectively registered
[ ] Protocol
[ ] Statistical analysis plan
[ ] Results
[ ] Individual participant data
[X] Record updated in last year

Plain English summary of protocol
Background and study aims
Chronic pain in the hip, knee or ankle can limit daily activity and quality of life in older women. The study aimed to compare four physiotherapy programmes: dry needling, neuromuscular taping, a kinesitherapy programme, and the three given in that order. There was no untreated group. The main question was quality of life after 4 weeks. Pain, physical fitness, daily function and body measurements were also recorded.

Who can participate?
Women aged 60 years or older, retired and living in the community, who were members of the Centre for Healthy Ageing of the Municipality of Novo Sarajevo and had lower-limb pain for more than 3 months that affected daily activity.

What does the study involve?
Each woman was allocated to one of the four programmes. Each programme comprised six sessions over 4 weeks. Quality of life was assessed before the first session and after the last session. Pain, a senior fitness test, daily function, vital signs and body composition were measured at the same two times.

What are the possible benefits and risks of participating?
No benefit was promised. Needling can cause short-lived soreness, tape can irritate the skin, and exercise requires physical effort. Participation was voluntary, with written consent.

Where is the study run from?
The Centre for Healthy Ageing (Bosnia and Herzegovina)

When is the study starting and how long is it expected to run for?
January 2022 to February 2022

Who is funding the study?
Investigator initiated and funded

Who is the main contact?
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Contact information

Type(s)
Public, Scientific, Principal investigator

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Study information

Scientific Title
Effects of dry needling, neuromuscular taping, a kinesitherapy programme, and their sequential combination on quality of life in community-dwelling older women with chronic lower-limb pain: a four-arm randomised comparison

Study objectives
To compare dry needling, neuromuscular taping, a kinesitherapy programme, and their sequential combination on quality of life in older women with chronic lower-limb pain. There was no untreated or sham group.

Ethics approval required
Ethics approval required

Ethics approval(s)
Approved 31/12/2021, Ethics Committee of the Centre for Healthy Ageing, Municipality of Novo Sarajevo (Azize Šaćirbegović 96, Sarajevo, 71000, Bosnia and Herzegovina; +387 (0)61349554; edina@zdravostarenje.ba), ref: 43-P/21

Primary study design
Interventional

Allocation
Randomized controlled trial

Masking
Open (masking not used)

Control
Active

Assignment
Parallel

Purpose
Treatment

Study type(s)

Health condition(s) or problem(s) studied
Chronic lower-limb pain in community-dwelling older women

Interventions
After written consent, 44 women were assigned to four groups of 11 by simple randomisation. A computer random-number generator produced the allocation sequence. Women were assigned one by one until each group contained 11 participants. There was no blocking or stratification. Allocation was not concealed. Participants, therapists and assessors were not blinded.

1. Dry needling: needles 30 × 0.3 mm or 40 × 0.3 mm into palpated active trigger points of the anterior and posterior hip and thigh. Needling of a muscle stopped after two local twitch responses. Only muscles with active trigger points were needled.
2. Neuromuscular taping: both lower limbs, 0% tension on pre-stretched skin. Hip: fan of four to six tails, 5–8 mm wide, base proximal. Quadriceps, hamstrings and calf: Y-tapes 2 cm wide. About 30 seconds of light manual activation.
3. Kinesitherapy: about 60 minutes, with warm-up, Senior Fitness Test-based strength, endurance, flexibility and agility activity, then cool-down. The protocol both lists practice of the 2-minute step test and a high-knee progression from 30 seconds × 2 sets to 60 seconds × 3 sets. Delivered content was not independently verified.
4. Sequential combination: the same three components, each scheduled six times. Planned order in a session was dry needling, then taping, then kinesitherapy.

Six sessions over 4 weeks, about every 5 days, delivered by certified therapists. No untreated or sham group. Attendance and fidelity were not independently verified.

Intervention Type
Other

Primary outcome(s)
1. Quality of life measured using 18-item modified WHOQOL-BREF at baseline and 4 weeks

Key secondary outcome(s)
1. Pain intensity measured using numerical rating scale at the hip, knee and ankle at baseline and 4 weeks

2. Senior Fitness Test measured using chair stands, arm curls, 2-minute stepping in place scored as right-then-left pairs, flexibility and agility time at baseline and 4 weeks

3. Functional independence measured using the Modified Barthel Index, nine domains, at baseline and 4 weeks

4. Vital signs measured using peripheral oxygen saturation (SpO_2), systolic and diastolic blood pressure, and resting pulse at baseline and 4 weeks

5. Body composition measured using bioelectrical impedance analysis (Tanita) of fat mass, fat-free mass, muscle mass, bone mass and body mass index at baseline and 4 weeks

Completion date
07/02/2022

Eligibility

Key inclusion criteria
1. Women aged 60 years or older
2. Retired and community-dwelling
3. Members of the Centre for Healthy Ageing of the Municipality of Novo Sarajevo
4. Lower-limb pain for more than 3 months that affected daily activity
5. Written informed consent

Healthy volunteers allowed
No

Age group
Mixed

Lower age limit
60 Years

Upper age limit
120 Years

Sex
Female

Total final enrolment
44

Key exclusion criteria
Self-reported physician diagnosis of osteoarthritis of a lower-extremity joint

Date of first enrolment
07/01/2022

Date of final enrolment
07/01/2022

Locations

Countries of recruitment
Bosnia and Herzegovina

Study participating centre
Centre for Healthy Ageing, Municipality of Novo Sarajevo
Azize Šaćirbegović 96
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Sponsor information

Organisation
Faculty of Health Studies, University of Mostar

ROR
https://ror.org/00v89p354

Funder(s)

Funder type

Funder Name
Investigator initiated and funded

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary
Not expected to be made available