

Two interventions to enhance functional athletic performance: design of a randomized controlled trial

Submission date 08/07/2016	Recruitment status No longer recruiting	☒ Prospectively registered ☒ Protocol
Registration date 11/07/2016	Overall study status Completed	☐ Statistical analysis plan ☒ Results
Last Edited 10/08/2020	Condition category Other	☐ Individual participant data

Plain English summary of protocol

Background and study aims

Struggling to deliver performance in competitions is one of the main reasons why athletes seek the advice of sport psychologists. Psychologists apply a variety of techniques, many of which are not evidence-based. Evidence-based techniques could help athletes to increase and maintain functional athletic behaviour in competitions/games (i.e., being focused on task-relevant cues and executing movements and actions in high quality). However, well-designed studies investigating the effectiveness of sport psychological interventions for performance enhancement are scarce. The aim of this study is to examine the effectiveness of two interventions with elite and sub-elite athletes: psychological skills training (PST) and a mindfulness-based intervention (MI).

Who can participate?

Elite and sub-elite athletes aged 18 or over

What does the study involve?

Participants are randomly allocated to receive either the PST or MI intervention or to be put on a waiting list. Both interventions last 5 weeks, consist of four 2-hour sessions and are administered by a trained sport psychologist. All sessions take place in the same athletic performance centre. The participants' functional athletic behavior is assessed during a competition/game. Competition anxiety, cognitive interference and negative outcome expectations are also assessed. Assessments are carried out before and after the intervention as well as at 2 months follow up.

What are the possible benefits and risks of participating?

Both PST and MI are expected to help improve functional behavior in athletes, and we will not only be able to answer the question of whether the interventions work, but also how, under what conditions, and for whom. There are no possible risks in participating in this study.

Where is the study run from?

Swiss Federal Institute of Sport Magglingen SFISM (Switzerland)

When is the study starting and how long is it expected to run for?
October 2016 to March 2018

Who is funding the study?
The Swiss National Science Foundation (Switzerland)

Who is the main contact?
Philipp Röthlin

Contact information

Type(s)
Scientific

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Protocol serial number
100019_156627

Study information

Scientific Title
Psychological skills training and a mindfulness-based intervention to enhance functional athletic performance: design of a randomized controlled trial using ambulatory assessment

Study objectives
The primary objective of this study is to assess the effects of a psychological skills training (PST) and mindfulness-based intervention (MI) in promoting functional athletic behavior (FAB) in elite athletes. We hypothesize that both active interventions are more effective than a waiting-list control condition in promoting FAB. We do not expect PST to be superior over MI or vice versa; rather, they are expected to increase FAB through different routes.

Ethics approval required
Old ethics approval format

Ethics approval(s)
The ethics committee of the Swiss Federal Institute of Sport Magglingen SFISM, 15/03/2014

Primary study design

Interventional

Study design

Interventional parallel-group randomised controlled trial

Study type(s)

Other

Health condition(s) or problem(s) studied

Functional behavior in athletes

Interventions

After a first contact and checking for inclusion and exclusion criteria (time 0), athletes will be stratified for gender, sport, and performance level, then randomly assigned to one of following three groups, and will be informed about their experimental condition:

1. Psychological skills training (PST): imagery, self-talk, goal-setting, arousal regulation
2. Mindfulness-based intervention (MI): mindful meditation, body scan, yoga
3. Waiting-list control group (WC)

The study is single-centre (all sessions will be conducted at the center for elite sports of the Swiss Federal Institute of Sport). The interventions will be realized in groups of six athletes each, leading to six sub-groups in each condition ($6 \times 6 = 36$ athletes, see power analysis). A manual will accompany the instructions for the interventions. All components of both interventions must be administered according to the manual's specifications by a trained sport psychologist. Two independent raters will evaluate the adherence to each intervention on the basis of video recordings. In addition to psycho-education and practice at home guided by audio files that can be played on computers or portable devices such as smart phones. All participants will also be provided with a calendar of their exercises to tick off as they are completed, and daily text messages will remind them to practice their PST or mindfulness exercises. Each intervention consists of four 2-hour sessions over the course of 5 weeks. Participants will be advised to practice daily and record their amount of practice.

Intervention Type

Behavioural

Primary outcome(s)

Functional athletic behavior (FAB) assessed using ambulatory assessment (during games and competitions) before and after the intervention (pre-post) as well as at two months follow up (three timepoints in total).

Key secondary outcome(s)

1. Cognitive interference, competition anxiety, and negative outcome expectations measured by the according subscales of the Thought Occurrence Questionnaire (TOQS) and the Competition Anxiety Inventory State (CAI-S)
2. Objective measures of performance will be win/lose, points scored, unforced errors etc, subjective measures will be assessed using a single item (how well did you perform?)

Secondary outcome will be measured directly before and after the intervention (pre-post), as well as at two months follow up (three timepoints in total)

Completion date

30/03/2018

Eligibility

Key inclusion criteria

Elite, sub-elite, and recreational athletes from four sports (curling, volleyball, i.e., indoor and beach, tennis, and hockey, i.e., floorball and ice hockey), who are members of the respective Swiss national sport associations

Participant type(s)

Healthy volunteer

Healthy volunteers allowed

No

Age group

Adult

Sex

All

Total final enrolment

95

Key exclusion criteria

1. Likely mental disorder
2. Significant previous experience with PST or MI
3. Less than 4 hours of athletic training per week
4. Being younger than 18

Date of first enrolment

01/10/2016

Date of final enrolment

30/09/2017

Locations

Countries of recruitment

Switzerland

Study participating centre

Swiss Federal Institute of Sport Magglingen SFISM

Alpenstrasse 18

Magglingen

Switzerland

2532

Sponsor information

Organisation

Swiss Federal Institute of Sport Magglingen SFISM (Switzerland)

ROR

<https://ror.org/00c9w1q32>

Funder(s)

Funder type

Research organisation

Funder Name

Schweizerischer Nationalfonds zur Förderung der Wissenschaftlichen Forschung

Alternative Name(s)

Schweizerischer Nationalfonds, Swiss National Science Foundation, Fonds National Suisse de la Recherche Scientifique, Fondo Nazionale Svizzero per la Ricerca Scientifica, Fonds National Suisse, Fondo Nazionale Svizzero, Schweizerische Nationalfonds, The Swiss National Science Foundation (SNSF), SNF, SNSF, FNS

Funding Body Type

Private sector organisation

Funding Body Subtype

Trusts, charities, foundations (both public and private)

Location

Switzerland

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary

Data sharing statement to be made available at a later date

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
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Results article	results	06/08/2020	07/08/2020	Yes	No
Protocol article	protocol	26/07/2016		Yes	No