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Outdoor swimming as a nature-based intervention for depression

Submission date	Recruitment status	[X] Prospectively registered
30/04/2022	No longer recruiting	[X] Protocol
Registration date	**Overall study status**	[_] Statistical analysis plan
19/05/2022	Completed	[X] Results
Last Edited	**Condition category**	[_] Individual participant data
18/12/2025	Mental and Behavioural Disorders	

Plain English summary of protocol

Background and study aims
Many people say outdoor swimming improves their mental health. There has been some research showing outdoor swimming helps people with depression, but not enough to say for certain. Social prescribing link workers work with GPs to support individuals to take greater control of their own health. They link patients with community-based activities and non-medical support such as gardening, volunteering opportunities or exercise and sports groups. In this study, social prescribing link workers offer an outdoor swimming course to adults with depression to see if it can help them. This study is a small study called a feasibility study. It will help to decide if it is possible to run a larger clinical trial and, if so, how best to design it. The larger clinical trial would show whether outdoor swimming helps improve depression. It will also give information about who and how it might help.

Who can participate?
Adults aged 18 years and over experiencing depression (e.g. feeling down or low in mood) and professionals who work with them

What does the study involve?
People interested in the study can seek information from social prescribing link workers at the study locations. Individuals who decide to take part will either have eight 1-hour sessions of outdoor swimming with a small group, as well as their usual care, or have their usual care only. Usual care may include talking therapies and/or antidepressant medications and community activities. The usual care-only group will be offered the swimming course after the study finishes. The outdoor swimming courses will be run by experienced coaches and will build confidence and water safety skills. During the study, participants will fill out questionnaires that ask about their depression, mental health, wellbeing, and use of health care services. Participants will complete them before the study starts, immediately after the swimming course (or usual care) and 8 weeks later. The researchers will also get feedback from participants, swimming coaches, social prescribing link workers as well as people who declined or dropped out of the study. Their feedback will help to design the full trial. Staff members who participate will be asked to complete questionnaires about their time commitment to the study and asked to provide feedback in a focus group setting.

What are the benefits and risks of participating?
Possible advantages may include being outside, an improvement in mental health and wellbeing, an improvement in physical health, and some may also find being around people beneficial. The water is cold, some people find this unpleasant whilst many report increased feelings of wellbeing. People with underlying physical health conditions should speak to their GP before participating in outdoor swimming. Participants are welcome to wear a wetsuit if they have one or can borrow one. Participants will be encouraged to get out of the water before they become cold. Participants will be given information about what to bring with them, how to warm up after swimming and encouraged to bring a hot drink in a flask to have at the end. The mental health questionnaires used in this study include sensitive questions around suicide, which may be upsetting. The research team will support participants, the team will also direct participants to further support as necessary. The team includes mental health professionals and researchers trained in mental health first aid.

Where is the study run from?
Sussex Partnership NHS Foundation Trust (UK)

When is the study starting and how long is it expected to run for?
April 2022 to April 2023

Who is funding the study?
National Institute for Health and Care Research (NIHR) (UK)

Who is the main contact?
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Contact information

Type(s)
Principal investigator

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Additional identifiers

Integrated Research Application System (IRAS)
309748

Central Portfolio Management System (CPMS)
52526

Study information

Scientific Title
Outdoor swimming as a nature-based intervention for depression: a feasibility randomised control trial

Acronym
OUTSIDE

Study objectives
1. To assess the feasibility of undertaking a definitive fully-powered randomised control trial (RCT), comparing an introductory outdoor swimming course, offered in addition to usual care, compared to a group receiving usual care only, in people who have mild to moderate depression.
2. Determine recruitment and retention rates, acceptability of randomisation and measures used to inform the sample size calculation for a definitive fully-powered RCT.
3. Understand the experience of study participants by using focus group discussions, questionnaires and interviews.

Ethics approval required
Old ethics approval format

Ethics approval(s)

Approval pending, London - Surrey Research Ethics Committee (London - Surrey Nottingham Centre, The Old Chapel, Health Research Authority (HRA), NG1 6FS, UK; +44 (0)207 1048 088; surrey.rec@hra.nhs.uk), ref: 22/LO/0268

Primary study design
Interventional

Study design
Single-centre feasibility randomized control trial

Study type(s)
Treatment

Health condition(s) or problem(s) studied
Depression

Interventions
The randomisation procedure will be set up and tested by the trial statistician using https://www.sealedenvelope.com™ with 1:1 allocation to either the intervention or control group with stratification by location and random permuted blocks.

This is a feasibility RCT with 1:1 allocation to a swim course and usual care intervention or usual care group. The study includes a qualitative evaluation of participants' experiences of the outdoor swimming intervention with a focus on better understanding barriers and facilitators to engaging in outdoor swimming. Eighty-eight people meeting eligibility criteria for mild to moderate depression are randomly allocated to receive either their usual care along with eight 1-hour sessions of an introductory outdoor swimming course or their usual care. Participants are asked to complete survey measures at baseline, post-intervention or at the same point for the usual care control group and again in follow-up, 8 weeks later. In addition, participants are invited to focus groups to discuss their experiences of the study.

Intervention Type
Mixed

Primary outcome(s)
1 Recruitment is measured by the number of eligible people consenting to participate in the study by October 2022
2. Retention of participants is measured by the number remaining engaged in the study activities for the duration of the study

Key secondary outcome(s)
1. Feasibility measures:
1.1. Swimming course attendance (intervention arm only) will be measured by totaling the number of sessions each person attends at the end of the study
1.2. Completion of questionnaires (in both arms) will be measured by totaling the number of questionnaires completed at baseline, post-intervention or at the equivalent timepoint for the usual care control group and in follow-up
1.3. Serious Adverse Events (SAEs) and adverse events will be recorded as they arise during the study
1.4. Completeness of data collected in both arms, at each timepoint. This will be measured by

the number of questions completed by participants at baseline, or at the equivalent timepoint for the usual care control group and in follow-up.

2. Participant-reported outcomes:
Each measure will be recorded at baseline, post-intervention or at the same timepoint in the usual care control and at follow up:
2.1. Depression symptom severity is measured by the Patient Health Questionnaire-9 (PHQ-9)
2.2. Anxiety symptom severity is measured by the General Anxiety Disorder-7 (GAD-7)
2.3. Wellbeing is measured using the Short form of the Warwick-Edinburgh Mental Wellbeing Scale (SWEMWBS)
2.4. Connectedness to nature is measured using the connectedness to nature scale
2.5. Loneliness is measured using the loneliness scale
2.6. Self-compassion is measured using the Sussex-Oxford Compassion for Self-Scale (SOCS-S)
2.7. Mindfulness is measured using the Five-Facet Mindfulness Questionnaire (FFMQ-15)

3. Health economic outcomes measures to assess health-related quality of life and medical resource use; each measure will be recorded at baseline, post-intervention or at the same timepoint in the usual care control and at follow up:
3.1. Health-related quality of life is measured using the EQ-5D-5L
3.2. Recovering quality of life is measured by using the ReQoL-10
3.3. The type and intensity of usual care, use of other health and social care services, such as GP visits, inpatient/outpatient care, A&E, medication use, travel time and cost to travel to and from all different treatments/appointments attendances, estimated using the Clinical Service Receipt Inventory
3.4. Health-related productivity losses measured using the IMTA Productivity Cost Questionnaire

Completion date
15/04/2023

Eligibility

Key inclusion criteria
1. Participants give fully informed consent to participate
2. Mild and moderate severity depression, as determined by the PHQ-9 (scores 5 -19)
3. Self-reported ability to swim a minimum distance:
3.1. For sea (50 m, 2 lengths of a normal swimming pool)
3.2. Lake (25 m, 1 length of a normal swimming pool) locations
3.3. No swimming experience required for outdoor unheated swimming pool (lido)
4. Adults aged 18 years or older

Participant type(s)
Patient

Healthy volunteers allowed
No

Age group
Mixed

Lower age limit
18 Years

Upper age limit
99 Years

Sex
All

Total final enrolment
0

Key exclusion criteria
1. People wishing to participate in a sea location who are not able to swim 50 m (2 lengths) in an indoor or fully heated outdoor pool
2. People wishing to participate in a lake location who are not able to swim 25 m (1 length) in an indoor or fully heated outdoor pool
3. Currently under the care of a secondary mental health NHS service
4. Risk of suicide or recent suicidal intent or attempts or self-harm requiring medical treatment
5. Other mental health problems to a severe degree
6. History of cardiac abnormalities (e.g., ischaemic heart disease/angina and congestive heart failure)
7. Immediate (first degree) relative history of cardiac events (GP consultation will be required for inclusion)
8. Respiratory conditions triggered by cold
9. Coldwater urticaria (a skin reaction to cold that appears within minutes after cold exposure)
10. Non-freezing cold injuries/Raynaud's
11. Not able to speak English to a level that would enable them to understand safety instructions

Date of first enrolment
20/05/2022

Date of final enrolment
04/09/2022

Locations

Countries of recruitment
United Kingdom

England

Study participating centre
ONSIDE advocacy
Williamson House
14 Charles Street
Worcester
England
WR1 2AQ

Study participating centre
Parliament Hill Surgery
113-117 Highgate Road
London
England
NW5 1TR

Study participating centre
Caversham Group Practice
4 Peckwater Street
Kentish Town
London
England
NW5 2UP

Study participating centre
Prince of Wales Group Surgery
52 Prince of Wales Road
London
England
NW5 3LN

Study participating centre
Litchdon Medical Centre
Landkey Road
Barnstaple
England
EX32 9LL

Study participating centre
Caen Medical Centre Site
Caen Medical Centre
Braunton
England
EX33 1LR

Sponsor information

Organisation

Sussex Partnership NHS Foundation Trust

ROR
https://ror.org/05fmrjg27

Funder(s)

Funder type
Government

Funder Name
National Institute for Health Research

Alternative Name(s)
National Institute for Health Research, NIHR Research, NIHRresearch, NIHR - National Institute for Health Research, NIHR (The National Institute for Health and Care Research), NIHR

Funding Body Type
Government organisation

Funding Body Subtype
National government

Location
United Kingdom

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?
Results article		21/10/2025	18/12/2025	Yes	No
Protocol article		13/07/2023	17/07/2023	Yes	No
HRA research summary			28/06/2023	No	No
Participant information sheet	Participant information sheet	11/11/2025	11/11/2025	No	Yes
Study website	Study website	11/11/2025	11/11/2025	No	Yes