

Blood pressure and blood glucose telemonitoring in seniors

Submission date 20/09/2021	Recruitment status No longer recruiting	<input type="checkbox"/> Prospectively registered <input checked="" type="checkbox"/> Protocol
Registration date 05/10/2021	Overall study status Completed	<input checked="" type="checkbox"/> Statistical analysis plan <input checked="" type="checkbox"/> Results
Last Edited 24/10/2024	Condition category Circulatory System	<input checked="" type="checkbox"/> Individual participant data

Plain English summary of protocol

Background and study aims

Arterial hypertension (high blood pressure) and diabetes are a significant burden on the general health of the population. This study will examine whether the addition of smart technology in the form of telemonitoring (i.e. disease control at a distance) improves the management of these chronic conditions. The main aim is to find out whether blood pressure (BP) and blood glucose (BG) telemonitoring is better than standard care in the BP and BG reduction. The secondary aim is to evaluate whether BP and BG telemonitoring is a feasible method for patients and healthcare workers.

Who can participate?

Patients aged 65 years or over with arterial hypertension and type 2 diabetes

What does the study involve?

Participants will be randomly allocated to the telemedicine group or the control group. Participants in the telemedicine group will receive a telemedicine package which will include a smartphone, blood pressure and blood glucose monitor. They will take their blood pressure two times weekly and blood glucose once monthly. Data will be transmitted via smartphone to the telemonitoring platform. The telemedicine centre coordinator (physician) will examine transmitted values and indicate appropriate interventions (e.g., change in treatment, referral to GP, phone consultation). The control group will receive standard care only. The researchers will also sample blood for laboratory tests in both groups at the start of the study and after 12 months.

What are the possible benefits and risks of participating?

Patients in the telemedicine group will receive a telemedicine package. Measurement of blood pressure is a non-invasive and safe procedure. Blood glucose measurement may cause minimal pain in the fingers, dizziness, or inflammation at the measurement site. No significant side effects are expected.

Where is the study run from?

The Primary Healthcare Centre Ljubljana (Slovenia)

When is the study starting and how long is it expected to run for?
January 2021 to September 2023

Who is funding the study?
EU H2020 - Health programme (H2020-SC1)

Who is the main contact?
Prof. Antonija Poplas Susič
antonija.poplas-susic@zd-lj.si

Contact information

Type(s)
Scientific

Contact name
Dr Matic Mihevc

ORCID ID
<https://orcid.org/0000-0003-4041-8682>

Contact details
Metelkova ulica 9
Ljubljana
Slovenia
1000
+386 (0)40 520 247
mihevc.matic@zd-tr.si

Type(s)
Scientific

Contact name
Prof Antonija Poplas Susič

ORCID ID
<https://orcid.org/0000-0002-4328-3333>

Contact details
Metelkova ulica 9
Ljubljana
Slovenia
1000
+386 (0)1 300 39 41
antonija.poplas-susic@zd-lj.si

Additional identifiers

Clinical Trials Information System (CTIS)
Nil known

ClinicalTrials.gov (NCT)

Nil known

Protocol serial number

ScubyTel-825432

Study information

Scientific Title

Telemonitoring of patients with comorbid hypertension and type 2 diabetes mellitus: a multicentre randomised controlled pilot study

Acronym

ScubyTel

Study objectives

The goals of the study are:

1. To evaluate the effect of blood pressure (BP) and blood glucose (BG) telemonitoring (TM) on BP and BG reduction in a group of patients with comorbid arterial hypertension (AH) and type 2 diabetes mellitus (T2DM)
2. To evaluate BP and BG TM's effect on mental health (depressive and anxiety symptoms) and other behavioural risk factors (daily activity, nutrition, alcohol consumption, smoking)
3. To evaluate the effect of BP and BG TM on quality of life
4. To evaluate the acceptability of BP and BG TM for patients and healthcare workers
5. To evaluate costs associated with the intervention and perform a cost-effectiveness analysis

Ethics approval required

Old ethics approval format

Ethics approval(s)

Approved 24/05/2019, Slovenian National Medical Ethics Committee (Komisija Republike Slovenije za medicinsko etiko, Štefanova ulica 5, SI-1000 Ljubljana, Slovenia; +386 (0)1 478 69 06; kme.mz@gov.si), ref: 0120-219/2019/4

Study design

Multicentre randomized controlled study

Primary study design

Interventional

Study type(s)

Prevention

Health condition(s) or problem(s) studied

Prevention of cardiovascular disease in patients with diabetes and arterial hypertension

Interventions

The SCUBY telemedicine pilot study is a randomised controlled study comparing telemonitoring of blood pressure and blood glucose (intervention group) with a standard care (control group). This multicentre pilot study will run in three primary healthcare centres in Slovenia and will last

for 12 months. It will include patients with hypertension and diabetes mellitus type 2 over 65 years of age who will be randomised in a 1:1 ratio to the experimental or control group. After consented to participate, patients will be randomised to either the intervention or control group. We will use a simple 1:1 randomisation. The first patient on the list will be randomised to the telemedicine group (intervention group). The second patient will be randomised to the standard care group (control group). If candidates drop out within the first week of the study, new patients will be sought. These will be randomised according to the previous randomisation list of patients. If the last patient on the list was randomised to the telemedicine group, the next patient will be randomised to the control group and vice versa.

Patients in the intervention group will receive a telemedicine package (blood glucose monitor, blood pressure monitor, smartphone) and take blood pressure twice weekly and blood glucose once monthly according to the protocol. Data will be transmitted via smartphone to the telemonitoring platform, where the telemedicine centre coordinator (physician) will examine transmitted values and indicate appropriate interventions (e.g., change in protocol regimen, referral to GP, phone consultation). The control group will receive standard care only.

Intervention Type

Device

Phase

Not Applicable

Drug/device/biological/vaccine name(s)

Not provided at time of registration

Primary outcome(s)

1. Systolic blood pressure measured with standardised BP monitors at baseline, 6 months, and 12 months
2. Glycated haemoglobin assessed with laboratory testing at baseline and 12 months.

Key secondary outcome(s)

1. Diastolic blood pressure measured with standardised BP monitors at baseline, 6 months, and 12 months
2. Lipid profile assessed with laboratory testing at baseline and 12 months
3. Glomerular filtration rate assessed with laboratory testing at baseline and 12 months
4. Body mass index assessed with standardised scales at baseline and 12 months
5. Appraisal of diabetes measured with the Appraisal of Diabetes scale at baseline and 12 months
6. Depressive symptoms measured with the Patient Health Questionnaire-9 at baseline and 12 months
7. Anxiety symptoms measured with the General Anxiety Disorder-7 questionnaire at baseline and 12 months

Completion date

01/09/2023

Eligibility

Key inclusion criteria

1. ≥ 65 years of age
2. AH and T2DM

3. Diagnosis of AH and T2DM for at least 1 year
4. Capability of smartphone use

Participant type(s)

Patient

Healthy volunteers allowed

No

Age group

Senior

Lower age limit

65 years

Sex

All

Total final enrolment

128

Key exclusion criteria

1. <65 years of age
2. T2DM on insulin treatment
3. Type 1 diabetes or gestational diabetes
4. Cognitive impairment

Date of first enrolment

15/03/2021

Date of final enrolment

01/06/2022

Locations

Countries of recruitment

Slovenia

Study participating centre

Zdravstveni dom Ljubljana

Metelkova ulica 9

Ljubljana

Slovenia

1000

Study participating centre

Zdravstveni dom Trebnje

Goliev trg 9
Trebnje
Slovenia
8210

Study participating centre**Zdravstveni dom Slovenj Gradec**

Partizanska pot 16
Slovenj Gradec
Slovenia
2380

Sponsor information

Organisation

Community Health Centre Ljubljana

ROR

<https://ror.org/04fx4vz25>

Funder(s)

Funder type

Government

Funder Name

H2020 Health - Health programme (H2020-SC1) contract number 825432 - SCUBY

Alternative Name(s)

H2020 Societal Challenges - Health, Demographic Change and Well-being, HEALTH, SOCIETAL CHALLENGES - Health, demographic change and well-being, H2020 SFIDE PER LA SOCIETÀ - Salute, evoluzione demografica e benessere, SFIDE PER LA SOCIETÀ - Salute, evoluzione demografica e benessere, H2020 RETOS DE LA SOCIEDAD - Salud, cambio demográfico y bienestar, RETOS DE LA SOCIEDAD - Salud, cambio demográfico y bienestar, DÉFIS DE SOCIÉTÉ - Santé, évolution démographique et bien-être, H2020 DÉFIS DE SOCIÉTÉ - Santé, évolution démographique et bien-être, H2020 GESELLSCHAFTLICHE HERAUSFORDERUNGEN - Gesundheit, demografischer Wandel und Wohlergehen, GESELLSCHAFTLICHE HERAUSFORDERUNGEN - Gesundheit, demografischer Wandel und Wohlergehen

Funding Body Type

Government organisation

Funding Body Subtype
National government

Location

Results and Publications

Individual participant data (IPD) sharing plan

The datasets generated during and/or analysed during the current study are/will be available upon request from the principal investigator Prof. Antonija Poplas Susič (antonija.poplas-susic@zd-lj.si) (e.g., for meta-analyses).

IPD sharing plan summary

Available on request

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article		15/05/2024	24/10/2024	Yes	No
Results article		01/03/2024	24/10/2024	Yes	No
Protocol article		28/09/2022	07/03/2023	Yes	No
Dataset			24/10/2024	No	No
Participant information sheet			22/09/2021	No	Yes
Participant information sheet	Participant information sheet	11/11/2025	11/11/2025	No	Yes
Statistical Analysis Plan	see section 2.13	28/09/2022	07/03/2023	No	No