

# WELLBASED: Improving health, wellbeing and equality by evidenced-based urban policies for tackling energy poverty

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<b>Registration date</b> 21/02/2022	<b>Overall study status</b> Completed	<input type="checkbox"/> Statistical analysis plan <input type="checkbox"/> Results
<b>Last Edited</b> 25/04/2024	<b>Condition category</b> Other	<input type="checkbox"/> Individual participant data <input type="checkbox"/> Record updated in last year

## Plain English summary of protocol

### Background and aim

Nearly 11% of the European population lives in energy poverty. They struggle to afford their basic energy needs. They often live in poorly maintained building stocks and cannot adequately keep their home warm in winter and cool in summer. Energy poverty is a multidimensional problem caused by rising energy prices, low incomes, and poor energy efficiency of housing. People living in energy poverty maintain poorer health and wellbeing than non-energy poor citizens. In the WELLBASED project, six pilot sites (Valencia (Spain), Heerlen (Netherlands), Leeds (UK), Edirne (Turkey), Obuda (Hungary), and Jelgava (Latvia)) will implement and evaluate the WELLBASED urban program. The program is based on the socio-ecological model and adopted to each pilot site, the aim is to support people living in energy poverty and improve health and well-being. The study aims to recruit 1750 participants across the different pilot cities. The study's findings should help to propose EU-wide solutions to policy-makers and city practitioners with regard to energy poverty and its impact on health.

### Who can participate?

Vulnerable adults aged 18 or older who live in energy poverty conditions at one of the pilot sites.

### What does the study involve?

Participants are invited to participate in the study at a communal center, a public space or when visited at home. Participants are allocated to one of two groups. The intervention group participates in the WELLBASED Urban Program. The other group is the control group. The WELLBASED Urban Program is a comprehensive urban programme based on the four layers of the social-ecological model. It includes actions related to the individual citizen (e.g. energy-audits, energy-behavior), the social and community networks (e.g. training of professionals), the living and working conditions (e.g. building improvements) and the socio-economic, cultural and environmental dimension (e.g. policy recommendations) to improve citizens' health and well-being. Actions are implemented for a period of 12 months. At baseline, 6 months, 12 months and 18 months participants in both groups complete self-report questionnaires assessing socio-demographic characteristics, energy poverty and health and well-being outcomes. In the intervention group, peak flow, blood pressure, SpO2, and heart rate are monitored monthly, and

sleep quality every three months. Sensors installed inside homes of the participants measure CO<sub>2</sub>, humidity, and temperature. In addition, in the intervention group twenty participants of each site are asked to participate in two interviews, at the beginning and towards the end of the study. During the interviews, people's experiences of challenges associated with energy poverty and health and with the WELLBASED program are discussed.

What are the possible benefits and risks of participating?

Participants in the intervention group will receive the benefits of the WELLBASED urban program and contribute to better health and wellbeing for people living in energy poverty. As this is a non-invasive study, no significant risks for participants are foreseen.

Where is the study run from?

Erasmus University Medical Center (the Netherlands).

The WELLBASED project coordinator is Las Naves (Spain).

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

November 2021 to September 2024

Who is funding the study?

European Union's Horizon 2020 research and innovation programme under grant agreement No 945097.

Who is the main contact?

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## Contact information

### Type(s)

Scientific

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**Additional identifiers****Clinical Trials Information System (CTIS)**

Nil known

**ClinicalTrials.gov (NCT)**

Nil known

**Protocol serial number**

945097

**Study information****Scientific Title**

A comprehensive urban programme to reduce energy poverty and its effects on health and wellbeing of citizens in six European cities unable to afford their basic energy needs

**Acronym**

WELLBASED

**Study objectives**

The hypothesis of this study is that vulnerable people living in energy poverty who participate in the WELLBASED programme have more favourable results with regard to indicators of health, wellbeing and quality of life in comparison to the participants in the control condition.

**Ethics approval required**

Old ethics approval format

**Ethics approval(s)**

1. Approved 03/11/2021, Ethics committee for research with medicines of the university clinical hospital of Valencia (Avenida Blasco Ibáñez 17, 46010 Valencia, Spain; +34 96 197 39 76; ceic\_hcv@gva.es), ref: 2021/316
2. Approved 04/07/2022, Ethics committee University of Leeds - AREA (Faculties of Business, Environment and Social Sciences, Leeds, UK; no telephone provided; ResearchEthics@leeds.ac.uk), ref: AREA 21-070
3. Approved 19/04/2022, Central Medical Ethics committee (Brīvības iela 72 k-1, LV 1011, Rīga, Latvia; +371 67876000; vm@vm.gov.lv), ref: Nr. 01-29.1.2/2267
4. Approved 21/03/2022, Medical Ethical Committee of Erasmus Medical Center (P.O. Box 2040, 3000 CA Rotterdam, Room Ae-337, the Netherlands), ref: MEC-2022-0150
5. Approved 06/04/2022, Trakya University Edirne Clinical Studies Ethical Committee (Turkey; no telephone provided; no email address provided), ref: 07/01

6. Approved 11/07/2022, Committee Name Egészségügyi Tudományos Tanács Tudományos és Kutatásetikai Bizottsága, ETT TUKEB (Scientific and Research Ethics Committee of the Medical Research Council, Ministry of Health, Medical Research Council Arany János u. 6-8 Budapest, H-1051 Hungary; +36 13119651; szolanka.jozsefne@eum.hu), ref. 332/2022

## **Study design**

Multisite pre-post controlled study design

## **Primary study design**

Interventional

## **Study type(s)**

Quality of life

## **Health condition(s) or problem(s) studied**

Energy poverty

## **Interventions**

In the intervention group the WELLBASED Urban Programme is implemented. In the control group no intervention activities are implemented.

The WELLBASED Urban Program is a comprehensive urban programme based on the four layers of the social ecological model. It includes actions related to the individual citizen (e.g. energy-audits, energy-behavior), the social and community networks (e.g. training of professionals), the living and working conditions (e.g. building improvements) and the socio-economic, cultural and environmental dimension (e.g. policy recommendations) to improve citizens' health and well-being. Actions are implemented for a period of 12 months.

Data using self-report questionnaires will be collected at baseline (start of the implementation of the intervention in the intervention group), 6 months, 12 months and 18 months in both intervention and control group. Additional data is collected in the intervention group using mixed methods research.

## **Intervention Type**

Behavioural

## **Primary outcome(s)**

Current primary outcome measure as of 28/03/2023:

Health-related quality of life (HR-QoL) score measured using the EQ5D-5L scores at baseline, 6, 12, and 18 months

Previous primary outcome measure:

Health-related quality of life (HR-QoL) score measured using the Short-Form Health Survey 12 (SF-12) scores at baseline, 6, 12, and 18 months

## **Key secondary outcome(s)**

Current secondary outcome measures as of 28/03/2023:

Measured at baseline, 6, 12 and 18 months:

1. Mental health measured using the Depression Anxiety Stress Scales 18 (DASS-18)
2. Self-perceived health measured using the EQ5D-5L
3. Frailty measured in older adults using the Brief Self-Administered Multidimensional

Prognostic Index Short Form (Brief SELFY-MPI-SF)

4. Subjective comfort in households measured using the European Statistics on Income and Living conditions survey (EU-SILC)
5. Comorbidities measured using the ICHOM Overall Adult Health set
6. Lifestyle behaviour: BMI, and smoking status measured using the ICHOM Overall Adult Health set
7. Lifestyle behaviour: Physical activity measured using One item of the Internal Physical Activity Questionnaire (IPAQ)
8. Health care use measured using the Modified SMRC Health Care Utilization questionnaire
9. Energy poverty indicators measured using the European Statistics on Income and Living conditions survey (EU-SILC)
10. Attitudes measured using a self-reported scale
11. Energy consumption adopted from smart energy meters or self-report in the questionnaire
12. Household income spent on energy reported by the participant

In the intervention group, additional outcomes are collected:

13. Health monitoring: Peak flow, SpO<sub>2</sub>, heart rate and blood pressure will be measured every month
14. Sleep quality index measured using the Pittsburgh Sleep Quality Index every 3 months
15. Household conditions temperature, humidity and CO<sub>2</sub> measured in real-time using home sensors
16. Impressions, comments, experience and subjective perceptions captured in a focus group and individual interviews

Previous secondary outcome measures:

Measured at baseline, 6, 12 and 18 months

1. Satisfaction with life measured using the Satisfaction with Life (SWL) scale (
2. Mental health measured using the Depression Anxiety Stress Scales 18 (DASS-18)
3. Self-perceived health measured using the Short Form Health Survey 12 (SF-12)
4. Frailty measured in older adults using the Self-Administered Multidimensional Prognostic Index Short Form (SELFY-MPI-SF)
5. Subjective comfort in households measured using the European Statistics on Income and Living conditions survey (EU-SILC)
6. Comorbidities measured using the ICHOM Overall Adult Health set
7. Lifestyle behaviour: BMI, alcohol consumption, smoking status measured using the ICHOM Overall Adult Health set
8. Lifestyle behaviour: Physical activity measured using One item of the Internal Physical Activity Questionnaire (IPAQ)
9. Loneliness measured using the UCLA 3-item Loneliness Scale
10. Control over life and social support measured using the Adult Social Care Outcomes Toolkit
11. Health care use measured using the Modified SMRC Health Care Utilization questionnaire
12. Energy poverty indicators measured using the European Statistics on Income and Living conditions survey (EU-SILC)
13. Attitudes measured using a self-reported scale.
14. Energy consumption adopted from energy providers or smart energy meters.
15. Household income spent on energy reported by the participant.

In the intervention group, additional outcomes are collected:

16. Health-monitoring: Peak flow, SpO<sub>2</sub>, and blood pressure will be measured every month.
17. Sleep quality index measured using the Pittsburgh Sleep Quality Index every 3 months.
18. Household conditions temperature, humidity and air quality measured real-time using home sensors.

19. Impressions, comments, experience and subjective perceptions captured in focus group and individual interviews.

**Completion date**

01/09/2024

## Eligibility

**Key inclusion criteria**

1. Aged  $\geq 18$  years old
2. In a vulnerable situation (unemployed, low income, single parents, parents with dependent children, seniors (65+) with dependency conditions, seniors (65+) living alone, people with disabilities attended by social services, belonging to a minority, migrant situation, etc.),
3. Living in energy poverty conditions
4. Belonging to the recruitment sites identified by the pilot partners for the study

**Participant type(s)**

Healthy volunteer

**Healthy volunteers allowed**

No

**Age group**

Adult

**Lower age limit**

18 years

**Sex**

All

**Total final enrolment**

1340

**Key exclusion criteria**

1. Cannot adequately participate in the intervention actions proposed in the pilot (e.g. intellectual disabilities, severe language limitations) or
2. Illegally connected to the electricity grid.

**Date of first enrolment**

01/09/2022

**Date of final enrolment**

30/06/2023

## Locations

**Countries of recruitment**

United Kingdom

England

Hungary

Latvia

Netherlands

Spain

Türkiye

**Study participating centre**

**Municipality of Heerlen**

Geleenstraat 25

Heerlen

Netherlands

6400 AA

**Study participating centre**

**Municipality of Edirne**

Babademirtaş Mh., Mimar Sinan Cd. No:1, 22000 Edirne Merkez/Edirne, Turkey

Edirne

Türkiye

22000

**Study participating centre**

**València Clima i Energia**

Carrer de Joan Verdeguer, 16

València

Spain

46024

**Study participating centre**

**INCLIVA**

C. de Menéndez y Pelayo, 4, 46010 Valencia, Spain

Valencia

Spain

46010

**Study participating centre**

**Leeds City Council**

Civic Hall  
Calverley Street  
Leeds  
United Kingdom  
LS1 1UR

**Study participating centre****Óbuda-Békásmegyer Municipality**

Óbuda-Békásmegyer  
Budapest  
Hungary  
-

**Study participating centre****Jelgava Municipality Operative Information Center**

11 Liela Str., Jelgava, LV-3001  
Jelgava  
Latvia  
LV-3001

## **Sponsor information**

**Organisation**

European Commission

**ROR**

<https://ror.org/00k4n6c32>

## **Funder(s)**

**Funder type**

Government

**Funder Name**

European Union's Horizon 2020 research and innovation programme under grant agreement No 945097.



# Results and Publications

## Individual participant data (IPD) sharing plan

The data-sharing plans for the current study are unknown and will be made available at a later date

## 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?
<a href="#">Protocol article</a>		19/08/2022	22/08/2022	Yes	No
<a href="#">Participant information sheet</a>	Participant information sheet	11/11/2025	11/11/2025	No	Yes
<a href="#">Study website</a>	Study website	11/11/2025	11/11/2025	No	Yes