ISRCTN97703902 https://doi.org/10.1186/ISRCTN97703902

The role of social relationships for health-protective behaviors

Submission date 05/02/2025	**Recruitment status** Recruiting	[X] Prospectively registered [_] Protocol [_] Statistical analysis plan [_] Results [_] Individual participant data [X] Record updated in last year
Registration date 06/02/2025	**Overall study status** Ongoing	
Last Edited 05/03/2025	**Condition category** Other	

Plain English summary of protocol

Background and study aims
These studies will examine how people's social connections influence their decisions and behaviors in challenging situations, using a computer game called "The field calls!" that was developed for this study. In this game, participants interacted with virtual social groups and responded to a fictional health crisis.

Who can participate?
Members of the general public who are fluent in German, aged 18 years old and over and have access to the internet and a PC

What does the study involve?
Study 3a: Exploring Social Identity and Health Behaviors
In the first study, participants' social identity was manipulated with a virtual social group. Participants were divided into three experimental groups: (1) a family (2) a friend group with a manipulated high social identity, and (3) a neutral group with no social identity manipulation. "The field calls!" is a farming game, in which participants have to farm together with their group against another group. They have to plant and take care of crops, harvest on their farm and in the forest, and make money from their harvest. Each participant plays "The field calls!" for three 30-minute sessions over three consecutive days. Before starting, they fill out a questionnaire and after each gaming session, they answer a short follow-up questionnaire. After the last session, participants are introduced to a fictional health crisis in the game: a volcano erupted near the game's city, releasing poisonous ash that could cause a dangerous disease. The disease spread through the eyes and skin, but it could be prevented by (1) wearing goggles to protect the eyes (though this makes the game screen blurry) and (2) taking daily baths in a protective liquid (which temporarily makes the characters feel sick). Participants are told whether most of their in-group members (family, friends, or neutral group) followed these health precautions or not. For comparison, out-group members (other characters) were described as evenly split, with half following the recommendations and half not. After reading about the crisis, participants answer questions to measure:
• How they perceive their group's and others' behavior
• How effective they thought the protective measures are
• Whether they intended to follow the health precautions in future game sessions

• Their trust in the government, their group, and the out-group
• How they feel about being asked to follow the rules (reactance)

Study 3b: Observing Group Behavior in Action
In the second study, participants again play “The field calls!”, but this time the experiment also focuses on how group norms (what their group actually does) influences their behavior. The six experimental groups are similar but added another layer: whether participants’ group mostly follows the health precautions or not. This study lasts longer—participants play for six 30-minute sessions over six consecutive days. After the final session, the health crisis scenario is shown in the game, but this time participants could directly see how their group and the other group act. The researchers track participants’ in-game behavior to see if they chose to wear the goggles and take the bath.

Citizen Scientists: A Collaborative Effort
The studies and the game were co-created with a large group of volunteers interested in science, known as Citizen Scientists. 59 Citizen Scientists worked on the technical aspects of the game, while 5 others contributed to its design, art, and sound. Around 650 Citizen Scientists participated in discussions and decision-making through the project’s Discord server. Three Citizen Scientists in Zurich helped set up the database and ensured the game could be accessed through a web browser. To understand the experiences of these Citizen Scientists, we conducted a survey. The survey asked about:
• Basic background information, like age, gender, and occupation
• Their contributions to the project, including time spent and reasons for participating
• What they gained from the experience, such as new skills or inspiration for their own research
The survey results will be shared descriptively in a study report, without specific predictions.

What are the possible benefits and risks of participating?
Possible benefits of participating include having fun while playing the computer game. There are no expected risks associated with participation.

Where is the study run from?
Department of Psychology, University of Zurich, Switzerland

When is the study starting and how long is it expected to run for?
April 2023 to April 2033

Who is funding the study?
Swiss National Science Foundation

Who is the main contact?
Mrs Sophe Louise Kittelberger, s.kittelberger@psychologie.uzh.ch

Study website
https://www.psychologie.uzh.ch/de/bereiche/dev/lifespan/forschung/Projekt-Miteinander-reden/hauptseite.html

Contact information

Type(s)
Public, Scientific

Contact name
Mrs Sophie Louise Kittelberger

Contact details
Department of Psychology, University of Zurich, Binzmuehlestrasse 14
Zurich
Switzerland
8050
+41 44 635 71 94
s.kittelberger@psychologie.uzh.ch

Type(s)
Public, Scientific, Principal Investigator

Contact name
Prof Urte Scholz

Contact details
Department of Psychology, University of Zurich, Binzmuehlestrasse 14
Zurich
Switzerland
8050
+41 44 635 72 50
urte.scholz@psychologie.uzh.ch

Type(s)
Public, Scientific, Principal Investigator

Contact name
Prof Alexandra M. Freund

Contact details
Department of Psychology, University of Zurich, Binzmuehlestrasse 14
Zurich
Switzerland
8050
+41 44 635 7200
freund@psychologie.uzh.ch

Additional identifiers

EudraCT/CTIS number
Nil known

IRAS number

ClinicalTrials.gov number
Nil known

Secondary identifying numbers

SNSF project number: 210138

Study information

Scientific Title
How social groups influence adherence to health-protective behaviors: A computer game experiment

Study objectives
The main hypotheses of this study are

1. Social identity with family group and friends group vs. control group
Compared to the low identity control condition, the level of social identity is higher in (a) the family condition and (b) in the friends condition.

2. The influence of social norms on (a) adherence and (b) intention to adhere to protective health behaviors
- The stronger the perceived descriptive norm of a group regarding a health-protective behavior, the stronger the alignment between the norm and a person's (a) behavior and (b) behavioral intention.
o This association is moderated by the type of group: For friend groups, we expect stronger alignment between the norm and a person's (a) behavior and (b) behavioral intention than for family groups.
o This association is moderated by social identity: The stronger the social identity, the stronger the influence of the norm on a person's (a) behavior and (b) behavioral intention.
3. The influence of response efficacy on (a) adherence and (b) intention to adhere to protective health behaviors
- The higher the response efficacy concerning a health-protective behavior, the higher the (a) adherence and (b) intention to adhere to the health-protective behavior.
o Explorative analysis: We will test if there is an association between the perceived descriptive norm of a group regarding a health-protective behavior and a person's response efficacy.
o Explorative analysis: Social identity moderates the association between the perceived descriptive norm of a group regarding a health-protective behavior and a person's response efficacy.
4. The influence of social identity on (a) adherence and (b) intention to adhere to protective health behaviors
- The stronger the social identity with a group in the conditions to act in alignment with government recommendations (family, friend, control), the higher the (a) adherence and (b) intention to adhere to health-protective behaviors.
- The stronger the social identity with a group in the conditions to act unaligned with government recommendations (family, friend, control), the lower the (a) adherence and (b) intention to adhere to health-protective behaviors.
- The stronger the social identity as an inhabitant of the game world, the higher the adherence to the recommendations of the government in the game.
5. Leaving the ingroup
- The probability of leaving one's group is higher in friend groups compared to family groups.
- The higher the response efficacy concerning a health-protective behavior, the lower the probability of leaving one's group if the group acts in line with recommendations of the government regarding the health-protective behavior.
6. Trust and reactance
- The lower the trust in the government the higher the reactance towards the health-protective

behaviors.
- The lower the trust in the government the lower the (a) adherence and (b) intention to adhere to health-protective behaviors.
- The lower the trust in the ingroup, the weaker the effect of social norms on (a) adherence and (b) intention to adhere to health-protective behaviors.
- The lower the trust in the ingroup, the weaker the effect of social identity on (a) adherence and (b) intention to adhere to health-protective behaviors.
- The higher the reactance, the lower the (a) adherence and (b) intention to adhere to health-protective behaviors.

Ethics approval required
Ethics approval required

Ethics approval(s)
Approved 19/12/2022, Ethics Committee, Faculty of Philosophy, University of Zurich (Ethikkommission, Philosophische Fakultät, Universität Zürich) (Andreasstrasse 15, Zurich, 8050, Switzerland; -; chair.ethics.committee@phil.uzh.ch), ref: 22.12.12

Study design
Randomized controlled trial

Primary study design
Interventional

Secondary study design
Randomised controlled trial

Study setting(s)
Internet/virtual

Study type(s)
Other

Participant information sheet
See study outputs table

Health condition(s) or problem(s) studied
Adherence to health-protective behaviors

Interventions
Study 3a
Study 3a will experimentally manipulate social identity using a virtual social group in a between-subjects design. Participants are randomly assigned to three groups: (1) high social identity with a family group, (2) high social identity with a friend group, and (3) a control group. This manipulation is achieved through the computer game “The field calls!”, that was developed for this purpose in a citizen science participatory approach. “The field calls!” is a farming game, in which participants have to farm together with their in-group against an outgroup. They have to plant and take care of crops, harvest on their farm and in the forest, and make money from their harvest. Participants play the game for three 30-minute sessions over three consecutive days. Before the first gaming session, participants complete a baseline questionnaire, and after each session, a brief follow-up questionnaire is administered.

After the third gaming session, participants are introduced to a health crisis scenario through a vignette. The vignette describes a fictional crisis: a volcano near the game's city has erupted, releasing poisonous ash that causes a severe disease spread through the eyes and skin. The disease is also transmissible between characters in the game. To control the spread, the in-game government imposes two protective measures: wearing special goggles to protect the eyes and daily bathing in a protective liquid for the skin. Adhering to these measures significantly reduces the risk of disease transmission, but there are drawbacks – wearing the goggles makes the view blurry during gameplay, and the bath briefly makes the character feel sick.

Participants are informed about their in-group's level of adherence to these measures, resulting in six experimental groups for the vignette study: (3 [social identity: family, friends, control] × 2 [most in-group members adhere to measures, most in-group members do not adhere to measures]). The out-group is described as evenly split, with one-half of the members adhering to the measures and the other half of the members not adhering to the measures. After reading the vignette, participants complete a questionnaire assessing:
• Perceived social norms of the in-group and out-group (manipulation check)
• Perceived effectiveness of the protective measures (manipulation check)
• Intentions to engage in protective health behaviors in the next gaming session
• Trust in the government, the in-group, and the out-group
• Reactance

Study 3b
Study 3b builds on the social identity manipulation and introduces an injunctive norm (government measure) regarding a health-protective behavior and manipulates the descriptive norm of the participants' social group regarding the health-protective behavior. This results in six experimental groups: (3 [social identity: family, friends, control group] × 2 [most in-group members adhere to measures, most in-group members do not adhere to measures]).

In the first part of study 3b and as in study 3a, participants play the "The field calls!" game over three 30-minute sessions conducted on three consecutive days. A baseline questionnaire is completed before the first session, and a brief questionnaire follows each session. The goal of these three gaming sessions is to foster a social identity with the respective virtual social group. In the second part of study 3b and after the third gaming session, the same health crisis scenario as introduced in the vignette in Study 3a is visually depicted in the game. Participants can directly observe the (non-) adherence to government-mandated health-protective behaviors. Participants will play the game with the crisis scenario for another three gaming sessions of 30 minutes each, on three consecutive days and with brief questionnaires after each session. Data will be collected on participants' in-game behaviors, specifically whether they wear goggles and take the bath.

Citizen Scientist co-creation approach
The design and materials for these studies, including the computer game "The field calls!", were developed in collaboration with Citizen Scientists. A total of 59 Citizen Scientists contributed to coding, while 5 others worked on design, art, and sound. Approximately 650 Citizen Scientists are active members of the project's Discord server, where they participate in discussions, polls, and other decisions about the game. Additionally, three Citizen Scientists based in Zurich supported backend tasks, including setting up a database and distributing the game via a web browser.
To gain further insights, we conducted a survey among Citizen Scientists who contributed to the development of the game and study materials. One Citizen Scientist from Zurich also helped develop response options for some survey items. The survey was shared with contributors

through the GitHub repository, the graphic and sound artist teams, and twice via the Discord server. The survey included questions on:
• Socio-demographic details (e.g., age, gender, occupation, country of residence)
• Contribution details (e.g., time and frequency of contribution, reasons for participation)
• Experience of contributing (e.g., overall assessment, learning outcomes, whether contribution inspired further research)
We do not have specific hypotheses about these survey data; instead, they will be reported descriptively in a study protocol paper.

Intervention Type
Behavioural

Primary outcome measure
1. Social identity with the virtual group is measured (1) behaviorally with a resource allocation task once every 15 minutes, (2) self-reported with four items from Doosje et al., 1998, once after each game session (i.e., after 30 minutes).
2. Adherence to wearing the goggles will be measured by (1) self-reported adherence intentions once after reading a vignette, (2) behavioral measures throughout the game.
3. Adherence to taking the bath will be measured by (1) self-reported adherence intentions once after reading a vignette, (2) behavioral measures throughout the game.

Secondary outcome measures
There are no secondary outcome measures

Overall study start date
01/04/2023

Completion date
01/04/2033

Eligibility

Key inclusion criteria
1. Fluent in German
2. 18 years or older
3. Access to the internet and a PC

Participant type(s)
Population

Age group
Mixed

Lower age limit
18 Years

Upper age limit
100 Years

Sex

Both

Target number of participants
1200

Key exclusion criteria
Not meeting the participant inclusion criteria

Date of first enrolment
14/03/2025

Date of final enrolment
01/06/2026

Locations

Countries of recruitment
Austria

Germany

Switzerland

Study participating centre
Department of Psychology, University of Zurich
Binzmuehlestrasse 14
Zurich
Switzerland
8050

Sponsor information

Organisation
University of Zurich

Sponsor details
Department of Psychology, Binzmuehlestrasse 14
Zurich
Switzerland
8050
+41 44 635 71 51
info@psychologie.uzh.ch

Sponsor type
University/education

Website
https://www.psychology.uzh.ch/en.html

ROR
https://ror.org/02crff812

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, SNF, SNSF, FNS

Funding Body Type
Private sector organisation

Funding Body Subtype
Trusts, charities, foundations (both public and private)

Location
Switzerland

Results and Publications

Publication and dissemination plan
1. Study protocol
2. Methods Paper: Manipulating social identity in a computer game
3. Several research papers testing the registered hypotheses

Intention to publish date
31/12/2025

Individual participant data (IPD) sharing plan
The datasets generated during and/or analysed during the current study will be stored in a publicly available repository.

The type of data stored will be behavioral data (e.g., in-game behavior, resource allocation task), survey data (e.g., self-reported social identity measures), and metadata from the computer game (e.g., time played, level of engagement in the game). Sharing consent from participants was required and obtained.

IPD sharing plan summary

Stored in publicly available repository

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Participant information sheet	Informed consent		06/02/2025	No	Yes