MOVADECT

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MAIN GOAL: We will integrate population-level registry (CBS) data and data from a survey on beliefs, values, and behavior to build a model to predict SARS-CoV-2 vaccination uptake on a population and local level. This model will take into account...

Ethical review	Not available
Status	Recruiting will start
Health condition type	Other condition
Study type	Observational non invasive

Summary

ID

NL-OMON57479

Source
Onderzoeksportaal

Brief title
MOVADECT

Condition

- Other condition

Synonym
Vaccination decision profiles, social networks, data science, targeted interventions, optimizing vaccination participation

Research involving
Human

Sponsors and support

Primary sponsor: Amsterdam UMC
Source(s) of monetary or material Support: ZonMW

Intervention

- Other intervention

Explanation

N.a.

Outcome measures

Primary outcome

The study's primary outcome measures are respondents' decision profiles based on their underlying beliefs about vaccination and health (e.g., disease severity, vaccine efficacy), moral values (e.g., autonomy, prosociality, freedom), and social values (e.g., trust, social norms). The following concepts to create the decision profiles are measured: Naturalness preferences (4 items), religion (4 items), decision styles (10 items), health literacy (9 items), prosociality (4 items), social norms (4 items), complacency (3 items), autonomy and freedom (4 items), knowledge and social support (11 items), barriers to vaccination (4 items), beliefs covid-19 and vaccine (7 items)

Secondary outcome

The study's secondary outcomes are how the vaccination decision profiles are distributed throughout the Netherlands and how they are connected with each other via the social networks of these individuals. From the LISS-panel, we use the following variables that are already measured in 2020: beliefs SARS-CoV-2 disease (severity and susceptibility), beliefs SARS-CoV-2 vaccine (effectiveness vaccine), vaccination intentions (January 2021 and July 2021). We use the following variables that are already measured in 2021: demographic information (age, gender, educational attainment, migrant status, socio-economic status, Dutch identification), BIG-V personality traits (Openness to experience, Conscientiousness, Extraversion, Agreeableness, and Neuroticism), religious attainment, spiritualty, trust in authorities (scientists, healthcare, and the government), general trust, and the Rokeach Values (e.g., self-direction, benevolence). All these variables are publicly available for members that have access to the LISS-panel data archive (<a href=";).   From the CBS-data archive, we use the following variables that are already measured in 2021: SARS-CoV-2 vaccination status (doses), type of vaccine administered, demographic information (age, gender, education, migrant status, and socio-economic status), ties with other individuals

Study description

Background summary

Vaccination has been a huge success for individual and population health, but has also become the subject of heated public debates. The World Health Organization (WHO) has identified vaccine hesitancy as one of the 10 major threats to public health. Vaccine

hesitancy is defined as the refusal and delayal of vaccination. Vaccine hesitancy is vaccine-specific (e.g., SARS-CoV-2 vaccine) or generic (i.e., all vaccines), and geographically concentrated (e.g. in specific urban areas). Our project contributes to the effectiveness of the current Public Health Services (GGD) vaccination policy based on WHO's Tailored Immunization Program (TIP) approach, by gaining a better understanding of how prevailing beliefs and values about vaccination in communities affect individual decisions. Previous work defined individual decision making as the core concept of vaccine hesitancy. The heterogeneity in vaccination decision profiles (i.e. differences in decision making among individuals) and the unequal distribution in the general Dutch population (i.e., some decision profiles will be more prevalent than others) hampers implementation of more effective vaccination strategies. We address this problem by designing and evaluating a new data driven, person-centered framework, to better predict vaccination uptake and tailor interventions at a local level —especially for vulnerable groups (e.g., people with a migrant background).

Study objective

MAIN GOAL: We will integrate population-level registry (CBS) data and data from a survey on beliefs, values, and behavior to build a model to predict SARS-CoV-2 vaccination uptake on a population and local level. This model will take into account both how beliefs and values impact vaccination decisions, and how they spread in the population. This will lead to a better understanding of how to target communication and support decisions to optimize public support and vaccination uptake.

GOAL 1: Identifying and characterizing vaccination decision profiles.

Most studies assume homogeneity in how the predictors of vaccination attitudes (e.g., beliefs, values) relate to individuals' vaccination behavior, while it is clear that these factors (e.g., risk perceptions, prosocial values, autonomy) do not have the same impact for every individual (e.g., some people value autonomy more in their decision and others might value prosociality more). Therefore, we will rely on profiles of factors that influence behavior and assume heterogeneity. Thus it is first important to find out which decision profiles there are.

RQ1: Which type of vaccination decision profiles are present in the Netherlands?

GOAL 2: Modeling the distribution of vaccination decision profiles at the local level for the entire Dutch population.

After determining which vaccination decision profiles exist, and which profile corresponds to each individual in the LISS panel, we will then link the LISS panel to CBS microdata, which is possible through a common identifier. We will then model vaccination decision profiles using the vast information in CBS microdata, including household composition, geographical location, family and household networks, and demographic information. By combining the CBS microdata with the profiles, we can see whether certain vaccination decisions profiles are concentrated geographically and which profiles can be found where in the Netherlands.

RQ2: How are these vaccination decision profiles distributed at the local level for the entire population?

GOAL 3: Modeling vaccination preparedness based on the social networks of the different vaccination decision profiles.
The distribution of vaccination decision profiles can help us understand which vaccination strategies are required to increase the likelihood of vaccination while respecting individual's values and beliefs (e.g., interventions that focus on communicating the social benefit of vaccination, might be less effective in regions where the dominant factor of vaccination decision profiles is autonomy) and maintaining public support. We will study the effect of networks in the spread of vaccination decisions in two steps. First, we will explore the role of different social contexts (e.g., family, neighbors, colleagues) at the individual level. Then, we will explore how vaccination uptake at the regional level depends on the connectivity between vaccination decision profiles. In the second step, we will formalize this approach by modeling the share of SARS-CoV-2 vaccine uptake (primary doses) in 2021 at the regional level (4-digit postal code, neighborhood, and municipality) based on the share of the population of each vaccination profile and the number of connections between and within the decision profiles in the region.
RQ3: To what extent do the distribution of vaccination decision profiles and social networks between people determine SARS-CoV-2 vaccine uptake at the local level?

Study design

Goal 1: Survey LISS-panel (N = 5000) that measures data on individual decision making factors (e.g., beliefs, values, attitude) to create the vaccination decision profiles. (i.e., Survey Research)

Goal 2: The data that is collected and used for Goal 1 and CBS register data of 2021 to see how the vaccination decision profiles are distributed at the local level for the same population. (i.e., social network analysis)

Goal 3: The same as Goal 2. To model the SARS-CoV-2 vaccine uptake based on the share of the population of each vaccination profile and the number of connections between and with the decision profiles in the region. (i.e., social network analysis).

Intervention

We will not use an intervention or test a product in this study. We will use a questionnaire to asses people's beliefs and values in relation to vaccination and connect this to existing data.

Study burden and risks

Participants will fill in the survey (maximum 10 minutes) from an electronic device. The survey organization (LISS-panel) ensures that everyone that is in the panel has an electronical device to participate in studies. The risks of participating in this survey are minimal. Participation in the survey is very unlikely to affect them emotionally or otherwise. Participants will receive financial compensation by the survey company (CENTerData). This is approximately € 0,25 cent per minute.

Contacts

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Trial sites

Listed location countries

Netherlands

Eligibility criteria

Age
Elderly (65 years and older)
Adolescents (16-17 years)
Adults (18-64 years)

Inclusion criteria

Participants should be part of the LISS panel of CenterData since December 2020

Exclusion criteria

Participants who do not meet the inclusion criteria at 6.2.

Study design

Design

Study phase:	N/A
Study type:	Observational non invasive
Intervention model:	Single
Allocation:	Non controlled trial
Masking:	Open (masking not used)
Control:	Uncontrolled
Primary purpose:	Other

Recruitment

NL

Recruitment status:	Recruiting will start
Start date (anticipated):	01-04-2025
Enrollment:	5000
Duration:	1 months (per patient)
Type:	Anticipated

Medical products/devices used

Product type:	N.a.

IPD sharing statement

Plan to share IPD: Yes

Plan description
The results of this study will be published in a peer-reviewed paper, via an interactive website, and symposium for professionals. All data, materials, and code will be shared via the Open Science Framework following FAIR principles and be accesible to everyone. All data collected by the survey panel, will also be available to everyone via their Data Archive.

Ethics review

Not available

Date:	27-02-2025

Application type:	First submission
Review commission:	CCMO

Study registrations

Followed up by the following (possibly more current) registration

No registrations found.

Other (possibly less up-to-date) registrations in this register

No registrations found.

In other registers

Register	ID
Research portal	NL-009440