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**Pandemic Preparedness Behaviour
Survey and User Guide**

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Acknowledgements

Introduction

This document provides guidance to researchers who wish to conduct pandemic preparedness survey studies to inform policymakers on the current status of citizens' behaviours and factors that influence behaviour and health outcomes, that are relevant for a possible next pandemic. It is developed and intended to be used by researchers with a background in behavioural science.

Specifically, this user guide supports the administration of the Pandemic Preparedness Behaviour (PPb) survey. The individual-level international survey instrument aims to measure determinants and behaviours related to infection prevention and control. It also includes baseline health indicators and generic determinants of health behaviours. Assessment of these factors in a cold phase – i.e., when no specific pandemic threat is present - can help to identify opportunities for actors at different socio-ecological levels to support pandemic preparedness.

As pandemics are not bound by borders, we expect that comparable data on an international scale will be beneficial to cross-learning, national and supra-national preparedness and acute phase policy development. For that reason, we provide open access to this instrument.
The initial version of this instrument - as presented in this guide - focuses on prevention and control of airborne infections. Following versions will include survey blocks assessing behaviours relevant to other pathogen transmission routes. Moreover, the survey may be expanded to serve studies on other types of disasters or crisis management in a more general sense.

The goals of the survey

The survey instrument is developed to serve the following aims:

1. Identifying opportunities for individual level behaviour change that help prevent or mitigate a possible future pandemic (e.g., supporting hand washing habits).
2. Identifying how and where communities, organisations and governments can support determinants of individual level behaviour change in different population subgroups (e.g., supporting equal behavioural opportunities by promoting health literacy)
3. Obtaining baseline measurements of relevant behaviours, their determinants, and important health outcomes in different subgroups ahead of a possible future pandemic
4. Collecting comparable data across countries to facilitate cross-learning and to inform national and supra-national preparedness and acute phase policy development.

Theoretical background

As underscored by the COVID-19 pandemic, human behaviour is key to the control of infections. More specifically, human behaviour plays a critical role in both preventing as well as mitigating (the impact of) outbreaks. Hence, pandemic management strategies are likely to heavily rely on non-pharmacological social and behavioural interventions (e.g., Perra, 2021). An understanding of factors that affect the performance of behaviours relevant to preventing or mitigating infections during a pandemic is therefore essential in light of 'pandemic preparedness'. Moreover, studies show that performance of preventive behaviours during the COVID-19 pandemic was associated with psychosocial factors such as health literacy or trust in the government (e.g., Sailer et al., 2022), which cannot be changed overnight in the wake of a new pandemic. Hence, to help reduce the spread of infections during a next pandemic, it is important to prepare societies already in a cold phase. In a cold phase, conditions can be created that support citizens[1] to act effectively in warming up, acute, and recovery phases of a pandemic.

As of yet, behavioural scientific literature does not provide a theoretical model that is applicable to the complexity of pandemic preparedness. It does, however, provide building blocks of essential elements. We used the COM-B framework (Michie, Van Stralen, & West, 2011) as a starting point for developing a conceptual model that forms the basis of the PPb survey (Figure 1). The COM-B framework highlights three classes of factors that are associated with the performance of behaviour: capability, opportunity, and motivation (for a summary, see The COM-B Model for Behavior Change - The Decision Lab). The framework is widely used to understand behaviour and inform interventions for behaviour change in academic and policy contexts.

Some additions were made to the COM-B framework to enhance its applicability to the context of pandemic preparedness (Kroese et al, manuscript in preparation): 1) a specification of outcomes of importance to the policy context, with a focus on health outcomes beyond physical health, including mental and social health, 2) attention to specific i) demographic, ii) environmental exposure and iii) health status and lifestyle factors that may result in vulnerability to adverse mental, physical and social health outcomes; 3) a distinction between acute phase behaviours (within a specific pandemic context) and cold phase (general preventive or preparatory) behaviours, and 4) a distinction between generic determinants of those behaviours (e.g., trust in institutions) and behaviour specific determinants (e.g., self-efficacy of social distancing within a specific pandemic context).

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[1] The same applies to actors on the level of communities, organisations, and governments who also need to consolidate their capabilities, motivations, and opportunities to be able to act in an acute phase. Results of the current survey will give directions to what actors at these levels could do to support citizens. However, it is also important to consider what should be done to support actors at communities, organisations and governments themselves.
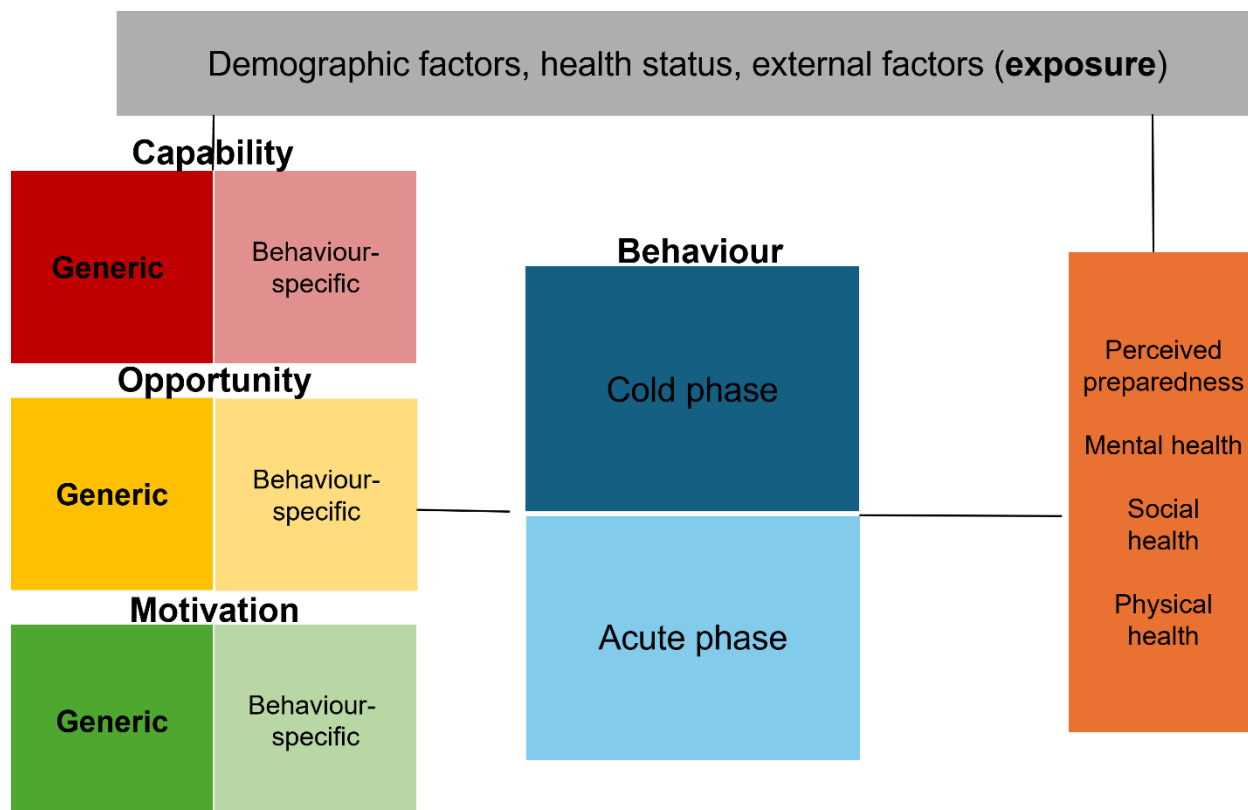
Demographic factors, health status, external factors (**exposure**)

Capability
Generic | Behaviour-specific

Opportunity
Generic | Behaviour-specific

Motivation
Generic | Behaviour-specific

Behaviour
Cold phase

Acute phase

Perceived preparedness

Mental health

Social health

Physical health

Figure 1: A conceptual model for individual level pandemic preparedness from a behavioural perspective based on COM-B (Michie et al., 2011)

The starting point for selecting which behaviours, determinants, outcomes, and individual (demographic and exposure) characteristics to include in the survey, are acute pandemic scenarios. One obvious challenge of pandemic preparedness programs is the uncertainty of what a next pandemic - and the societal context at that time - will be like. With different possible pathogen transmission routes, it is uncertain which behaviours will be important during the next pandemic and are thus relevant to study. Referring to the aims of the survey, we selected constructs that meet either criteria i-iv or criterion v:

  i. They are also relevant to preventive health in a cold phase (i.e., generic preventive behaviours such as hand hygiene and their specific determinants; or generic determinants that are also associated with other health behaviours beyond pandemic behaviour, e.g., health literacy)
  ii. They are changeable (i.e., hold intervention opportunities; no traits or factors at ceiling level).
  iii. They cannot be changed immediately in an acute phase. These constructs hence need to be measured and supported in a cold phase.
  iv. They have no negative (but may have positive) spillover effects. That is, we do not intend to select constructs that – while helpful in an acute phase – may have

disadvantages for people in a cold phase (e.g., when a focus on risk perception would lead to extensive worry)

v. They help distinguish identifiable subgroups in a population which can aid in the facilitation of behaviour change.

We recognize that assessing a much larger set of factors than included in the survey is required to fulfil these criteria. The current selection forms the basis of the survey. We aim to prepare additional survey blocks that can be added to assess behaviours and behaviour-specific determinants related to different transmission routes (e.g., zoonotic or sexual transmission). Also, a survey that can be used for assessment in an acute phase will be developed and made available.

Sample research questions

Referring to the aims of the survey and the theoretical background, results of this survey can be used to answer a wide range of questions. Some sample research questions are:

- To what extent do people experience having the capability, motivation, and opportunity to take precautions to prevent the spread of airborne infections during a cold phase?
- To what level do peoples' reported health behaviours conform to preventing the spread of airborne infections during a cold phase?
- Are there subgroup and country differences in (determinants) of health behaviours related to preventing transmission of airborne infections and perceived pandemic preparedness?
- Do people that adhere to behaviours preventing transmission of airborne infections report higher perceived preparedness and better health outcomes?
- How do determinants of health behaviours, health behaviours, and health outcomes change from a cold phase to a hot phase?
- Which determinants / health behaviours mitigate adverse health outcomes when transitioning from a cold to a hot phase?

Measures

Structure of the questionnaire

The survey comprises four foundational blocks:

  i.   **Demographics** (e.g., age, gender, education level)
  ii. **General preventive behaviours** (e.g., handwashing, working from home, preparedness behaviours)
  iii. **General determinants of health and health behaviours** (e.g., trust, health literacy)
  iv. **Health outcomes** (e.g., general health, mental health, perceived preparedness)

The survey also has three flexible blocks:

  i.   **Specific preventive behaviours** (e.g., behaviours relevant to other possible virus transmission routes)
  ii. **Behaviour-specific determinants** (e.g., self-efficacy of a specific behaviour in a specific context)
  iii. **Environmental exposure factors** (e.g., contact with animals, mobility)

The content of the flexible blocks will vary depending on specific research interests. The initial survey includes items to assess behaviours (and their determinants) that are relevant for controlling airborne infections (such as COVID-19). Over time we plan to develop and validate additional versions of these blocks to incorporate behaviours that are relevant for other pathogen transmission routes. Furthermore, it is possible to expand these blocks to incorporate other disaster preparedness behaviours and determinants.

Demographic factors, health status	Determinants: Capability	Determinants: Opportunity	Determinants: Motivation	Behaviour	Outcomes
• Gender • Age • Education • Country of origin • Urbanisation • Household members • Financial health • Primary occupation • Working from home • Healthcare worker • Informal caregiver • Medical risk group • Influenza vaccination	• Health literacy • Resilience • Knowledge*	• Unmet healthcare needs • Social support • Social norm*	• Vaccine confidence • Trust in institutions • Risk perception future pandemics and disasters • Conspiracy thinking • Social cohesion • Anxiety future pandemics • Self-efficacy* • Response efficacy*	• Hand washing • Coughing and sneezing in elbow • Staying home when sick • Working from home • Physical contact • Preparedness behaviours • Self-protective behaviour • Wearing a face mask • Use of hand sanitizer	• General health • Mental health • Perceived preparedness

*Behaviour-specific determinants.

Table 1: Blocks and topics incorporated into the first version of the PPb survey.

Overview of constructs

The table below presents an overview of the constructs in the survey (V1). Survey items to measure each construct were, where possible, adapted from internationally validated instruments, to allow comparison and data linking with other studies (see Appendix 1 for survey items).

Variable	Items relate to	Source of construct
Demographic factors, health status		
Socio-demography	Gender, age, education, primary occupation	
	Household members	New items that we created for this questionnaire, adapted from: New item from SI-PANDA Slovenia https://nijz.si/publikacije/covid-19-pandemic-in-slovenia-results-of-a-panel-online-survey-on-the-impact-of-the-pandemic-on-life-si-panda-25th-iteration/
	Healthcare worker	
	Informal care	Part of validated item taken from: European Health Interview Survey (EHIS wave 3) Methodological manual, 2018 edition https://ec.europa.eu/eurostat/documents/3859598/8762193/KS-02-18-240-EN-N.pdf
	Country of origin	
	Urbanisation	New item that we created for this questionnaire. The three answer options were based on this categorization: https://ec.europa.eu/eurostat/web/degree-of-urbanisation/methodology
	Medical risk group	Medical risk factors based on risk of severe outcomes of influenza and COVID-19.
Financial health	Perceived financial situation	New item that we created for this questionnaire. We ask perceived financial situation instead of actual income, because the meaning of the income may depend on the

		context (i.e. how much assets someone has, partner income, average income in country).
Influenza vaccination	Eligibility/intention to get influenza vaccination	
Working from home	Ability to work from home	
Determinants: Capability		
Health literacy	Ability to find and understand health information, evaluate its reliability, and apply it to maintain and improve health	Items adapted from: Sorensen, K., Van den Broucke, S., Pelikan, J., Fullam, J., Doyle, G., Slonska, Z., Kondilis, B., Stoffels, V., Osborne, R., Brand, H., 2013. Measuring health literacy in populations: illuminating the design and development process of HLS-EU-Q. BMC Public Health 13, 948. Adaptations: Consistent with Charafeddine, Demarest and Berete (2018), examples of the media and activities that are good for mental well-being were added. R. Charafeddine, S. Demarest, F. Berete. Gezondheidsenquête 2018: Gezondheidsvaardigheden. Brussel, België : Sciensano. Rapportnummer: D/2019/14.440.78. Beschikbaar op: www.enquetesante.be.
Resilience	Perceptions related to coping with and recovering from stress	Validated items taken from: Smith, B. W., Dalen, J., Wiggins, K., Tooley, E., Christopher, P., & Bernard, J. (2008). The brief resilience scale: assessing the ability to bounce back. International journal of behavioral medicine, 15(3), 194-200 Adaptations: Only three items were used. Similar to WHO tool for behavioural insights on COVID-19
Knowledge	Knowledge regarding the seasonal flu	Items adapted from the COSMO Spain study: https://portalcne.isciii.es/cosmo-spain/

Determinants: Opportunity		
Unmet healthcare needs	Availability and use of healthcare	Items adapted from: The European Union (EU) Statistics on Income and Living Conditions (EU-SILC) Methodological guidelines 2021 operation v8.pdf (europa.eu) Adaptations: The question has been adapted to: 'Did you have a medical examination or treatment each time you really needed <u>one</u>?'
Social support	Number of people close with, sense of interest or concern from other people, and relationship to neighbours	Validated items taken from: Dalgard, O. S., Dowrick, C., Lehtinen, V., Vazquez-Barquero, J. L., Casey, P., Wilkinson, G., ... & Odin Group. (2006). Negative life events, social support and gender difference in depression: a multinational community survey with data from the ODIN study. *Social psychiatry and psychiatric epidemiology*, *41*, 444-451.
Social norm	Perceived social norm regarding specific behaviours (i.e. hand washing)	Validated items taken from: Bussemakers, C., van Dijk, M., Dima, A. L., & de Bruin, M. (2023). How well do surveys on adherence to pandemic policies assess actual behaviour: Measurement properties of the Dutch COVID-19 adherence to prevention advice survey (CAPAS). Social Science & Medicine, 339, 116395.

Determinants: Motivation		
Vaccine confidence	Perceptions towards the importance, safety and effectiveness of vaccines. Compatibility of vaccines with beliefs	Items adapted from: De Figueiredo, A., Karafillakis, E., & Larson, H. J. (2020). State of vaccine confidence in the EU and UK 2020. *A Report for the European Commission. Publications Office of the European Union*. Microsoft Word - sovc_eu_13Nov2018.docx (europa.eu) and Vaccine Confidence Index Data & Methodology – The Vaccine Confidence Project

		Adaptations: The item 'vaccines are important for adults to get' has been added. We also adjusted the scale to 'strongly disagree-strongly agree' for consistency with the other items in the PPb survey.
General trust (in institutions)	Personal trust in institutions	Items adapted from: European Social Survey ESS10-Paper-Questionnaire-English-Templat.pdf (europeansocialsurvey.org) Adaptations: '(Country's) parliament' has been adjusted to 'The '(national) government' 'The European Parliament' has been adjusted to 'European institutions' 'Scientists' has been adjusted to 'Science' Items added: 'Healthcare system' 'Media' 'Country's) Ministry of Health 'National public health agency' 'Doctors'
Risk perception future pandemics and disasters	Risk perception future pandemics and disasters; degree of being personally affected	Items taken from: European Commission CCBI disaster preparedness experimental survey (not published yet)
Conspiracy thinking (perceptions)	General tendency to believe in conspiracies	Validated items adapted from: Survey tool and guidance: rapid, simple, flexible behavioural insights on COVID-19: 29 July 2020 (who.int) and Bruder M, Haffke P, Neave N, Nouripanah N, Imhoff R. Measuring individual differences in generic beliefs in conspiracy theories across cultures: conspiracy mentality questionnaire. Front Psychol. 2013;4:225. Published 2013 Apr 30. doi:10.3389/fpsyg.2013.00225 Adaptations:

		The scale '0% certainly not' – '100% certain' has been adapted to 'strongly disagree-strongly agree' for consistency with the other items in the PPb survey.
Social cohesion	Subjective perceived closeness of relationships with country, region and neighbourhood	Validated item taken from: Aron, A., Aron, E. N., & Smollan, D. (1992). Inclusion of Other in the Self Scale and the structure of interpersonal closeness. *Journal of Personality and Social Psychology, 63*(4), 596–612. https://doi.org/10.1037/0022-3514.63.4.596 Adaptations: The question has been adjusted to: "In the following questions, please indicate the extent to which you feel connected to the country, province and neighbourhood where you live. Below you see two circles each at different distances from each other. The left circle containing the text "Z" refers to yourself, the right circle containing an "A" refers to the other (country, province and neighbourhood). The amount of overlap between the circles indicates how connected you feel to the other (1 = totally unconnected, 7 = fully connected). Select the number under the circles you think best reflects the overlap between yourself and the other. Please select the picture below that best describes how connected you feel to: 'your country', 'your region (i.e. province)', 'your neighbourhood'.
Anxiety future pandemic	Anxiety regarding possible future pandemic	Newly developed item, to incorporate the affective component of risk perception.
Self-efficacy	Perceived ease or difficulty to follow measures/advice against spread of infections	Validated items taken from: Bussemakers, C., van Dijk, M., Dima, A. L., & de Bruin, M. (2023). How well do surveys on adherence to pandemic policies assess actual behaviour: Measurement properties of the Dutch COVID-19 adherence to prevention advice survey (CAPAS). Social Science & Medicine, 339, 116395.

Response-efficacy	Perceived efficacy measures/advice against spread of infections	Validated items taken from: Bussemakers, C., van Dijk, M., Dima, A. L., & de Bruin, M. (2023). How well do surveys on adherence to pandemic policies assess actual behaviour: Measurement properties of the Dutch COVID-19 adherence to prevention advice survey (CAPAS). Social Science & Medicine, 339, 116395.
Behaviour		
Hand washing	Hand washing behaviour in the past 7 days in specific situations	Validated items taken from: Bussemakers, C., van Dijk, M., Dima, A. L., & de Bruin, M. (2023). How well do surveys on adherence to pandemic policies assess actual behaviour: Measurement properties of the Dutch COVID-19 adherence to prevention advice survey (CAPAS). Social Science & Medicine, 339, 116395. Adaptations: We removed items that were specific for the COVID-19 context. We added items on hand washing before preparing or eating food and after cleaning the house.
Coughing and sneezing in elbow	Coughing and sneezing in elbow behaviour in the past 7 days	Validated items taken from: Bussemakers, C., van Dijk, M., Dima, A. L., & de Bruin, M. (2023). How well do surveys on adherence to pandemic policies assess actual behaviour: Measurement properties of the Dutch COVID-19 adherence to prevention advice survey (CAPAS). Social Science & Medicine, 339, 116395.
Staying home when sick	Staying home when sick at the moment or in the past 4 weeks	Items adapted from: RIVM COVID-19 and Behaviour Trend Study https://www.rivm.nl/gedragsonderzoek/trendonderzoek
Working from home	Hours working from home	Validated items taken from: Bussemakers, C., van Dijk, M., Dima, A. L., & de Bruin, M. (2023). How well do surveys on adherence to pandemic policies assess actual behaviour: Measurement properties of the Dutch COVID-19 adherence to prevention advice survey (CAPAS). Social Science & Medicine, 339, 116395.
Physical contact	Number of people you had physical	Validated items adapted from:

	contact with yesterday	The PIENTER Corona (PICO) study [PIENTER Corona Study | RIVM](#)
Preparedness behaviours	Specific actions taken to be prepared for a pandemic or disaster	Items adapted from: European Commission CCBI disaster preparedness experimental survey (not published yet)
Self-protective behaviour	Self-protective behaviour	Items adapted from the COSMO Spain study: https://portalcne.isciii.es/cosmo-spain/
Face mask	Wearing a face mask while feeling sick	Items adapted from the COSMO Spain study: https://portalcne.isciii.es/cosmo-spain/
Use of hand sanitizer	Use of hand sanitizer in the past 14 days at specific locations	New items that we created for this questionnaire.
Outcomes		
General health	Individual's rating of their own overall current health using a visual analogue scale	Validated item taken from: EuroQol Research Foundation. EQ-5D-5L User Guide, 2019. Available from: https://euroqol.org/publications/user-guides For online data collection, the scale has been presented horizontally.
Mental health	Mood, presence of psychological well-being, absence of psychological distress	Validated items taken from: Mental Health Inventory (MHI-5): Berwick, D. M., Murphy, J. M., Goldman, P. A., Ware Jr, J. E., Barsky, A. J., & Weinstein, M. C. (1991). Performance of a five-item mental health screening test. *Medical care*, 169-176.
Mental health diagnosis	Diagnosed with mental health condition by medical professional	Newly developed item.

Perceived preparedness	Perceived preparedness for a lockdown; self, employer and government	New items that we created for this questionnaire. To improve validity of these items, we first present a definition of a lockdown, and we ask perceived preparedness for a concrete situation (a lockdown) at a specific moment (next month).

How to use the survey

International comparability

The survey has been developed to support gaining internationally comparable data on pandemic preparedness from a behavioural perspective. To allow international comparability, it is essential that all survey items are assessed in the same way across countries. Therefore, we strongly recommend using the items as provided. Guidelines for adapting the items to local contexts, where necessary, are provided below. We also provide guidelines for data collection methods. Deviations from these guidelines can impact international comparability of the data.

Adapting the questionnaire to match local contexts

Translation protocol
To translate the questionnaire from English to another language, it is recommended that two experts independently translate the questionnaire to another language, discuss their translations, and merge their translations into one translation. To check for correct translation, back-and-forth translation is recommended (i.e., translating the translated questionnaire back to English by another not previously involved researcher, and inspect differences between the initial English questionnaire and the back-translated English questionnaire).

Cognitive interviews
When translating or adapting the questionnaire to the local context, it is recommended to conduct 8 to 10 cognitive interviews to check for readability, comprehension and missing answer options. For more information about cognitive interviewing, see for example Annex 3 of the WHO rapport 'Behavioural and social drivers of vaccination: tools and practical guidance for achieving high uptake. Geneva: World Health Organization; 2022.'

Demographic questions
Demographic questions should be adapted to the national context (for example, items regarding education and language proficiency), while maintaining the opportunity to compare data between countries. For education level, ISCED provides criteria for distinguishing comparable categories.

Questionnaire flow and response options
It is suggested to keep the questionnaire flow as follows: first ask questions about behaviours, then ask about generic and/or specific determinants. To ensure data-comparability between countries, it is important to keep the same response options in all Likert-scales throughout the questionnaire.

Data collection

Sample
Efforts should be made to collect a representative sample of the general population in the country in terms of gender, age and education level. A sample size with a minimum of n = 1000 per data collection round is recommended (Taherdoost, 2017). However, if researchers are interested in specific groups within the population, we recommend using a larger sample (i.e., n = 400 per group, depending on the expected effect size) to allow stratification by demographic groups. Also, it is preferred to use a probability sample to mitigate self-selection bias (ref) and to improve cross-country comparisons, although it is acknowledged that probability samples may not always be feasible. To obtain better population estimates, the data can be weighted by age, gender, education level and region.

Method of administration
The questionnaire is designed for online data collection, because it allows for routing in the questionnaire and automatically saves responses. It is recommended to not use a paper-and-pencil version to ensure comparability between countries.

Data collection
The data collector could be, for example: a trusted market research agency, a governmental agency, or an academic institution. It is also possible to use an existing high-quality survey panel for data collection. It is suggested to collect data repeatedly with 6- to 12-month intervals to identify trends over time, which is particularly relevant when a new pandemic unfolds. The selection of time intervals may depend on expected fluctuations of factors in the population over time. During a pandemic, it is recommended to be able to scale up and conduct the survey more frequently.

It is also important to take potential seasonal effects into account when deciding on the timing of data collection (e.g., responses may be different during flu season or holiday seasons). For international comparison, it is recommended to take into account the period of survey collection.

The standard suggested approach consists of different participants per round. Note that this cross-sectional design does not allow to assess causality. As an alternative, a longitudinal panel could be used. However, a potential disadvantage of this design is sample attrition. For an overview of advantages and disadvantages of cross-sectional and longitudinal research designs, see for example Setia (2016) and Lynn (2009). In the study in the Netherlands, we chose a design with the same sample per two rounds (per year), so we can link determinants and behaviours from both measurements.

Data sharing
To allow cross-country data sharing, it is suggested to set up data sharing agreements (i.e., Data Processing Agreement) before the start of the study.

Data analysis and reporting

Uniform analysis and reporting across countries will facilitate comparability of findings and cross-learning between research groups. R-scripts for constructing scales, conducting validity and reliability analyses, and estimating regression models will be available at https://osf.io/fcqya/.

Future developments

A pilot study of the PPb survey has been conducted in March and September 2024 in the Netherlands, Ireland, Spain and Slovenia. This data will be used to validate the survey (V1). As soon as a report of the pilot study is available, this user guide will be updated.

We plan to develop additional blocks assessing behaviours (and behaviour-specific determinants) relevant to other possible transmission routes (e.g., zoonotic or sexual transmission).

We welcome collaborations with interested parties.

References

Kroese et al., (2024). A study protocol for monitoring pandemic preparedness behaviour. Manuscript in preparation.

Lynn, P. (2009). Methods for longitudinal surveys. *Methodology of longitudinal surveys*, 1-19. Michie, S., van Stralen, M.M. & West, R. The behaviour change wheel: A new method for characterising and designing behaviour change interventions. *Implementation Sci* 6, 42 (2011). https://doi.org/10.1186/1748-5908-6-42

Perra, N. (2021). Non-pharmaceutical interventions during the COVID-19 pandemic: A review. *Physics Reports*, *913*, 1-52.

Sailer, M., Stadler, M., Botes, E., Fischer, F., & Greiff, S. (2022). Science knowledge and trust in medicine affect individuals' behavior in pandemic crises. *European Journal of Psychology of Education*, *37*(1), 279-292.

Setia, M. S. (2016). Methodology Series Module 3: Cross-sectional Studies. *Indian journal of dermatology, 61*(3), 261–264.

Taherdoost, H. (2017). Determining sample size; how to calculate survey sample size. *International Journal of Economics and Management Systems*, *2*.

World Health Organization. (2020). *Survey tool and guidance: rapid, simple, flexible behavioural insights on COVID-19: 29 July 2020* .

World Health Organization. (2022). Behavioural and social drivers of vaccination: tools and practical guidance for achieving high uptake. World Health Organization. https://iris.who.int/handle/10665/354459. License: CC BY-NC-SA 3.0 IGO

Appendix 1: Pandemic Preparedness Behaviour Survey Version 1 (March–September 2024)

Contents

Country of origin
Urbanisation
Household members
Medical risk group
Mental health diagnosis

Layout of the questions:
variable name for analysis in lower case
Selection of participants in italics

The grey horizontal line indicates a new page.

Intro

Thank you very much for completing this questionnaire.

With this questionnaire, we want to understand what people do to make sure they don't get sick from bacteria and viruses. The questions are about behaviour, health and well-being.

Block A1: Demographics

Note: In this first block, only the essential demographic questions are asked. Other demographic questions are at the end of the questionnaire.

Gender self-identification
gender

Note: In the analysis we will use gender in three categories (male/female/other). You can ask this question in a way that is culturally appropriate for your country.

To which gender identity do you most identify?

1   Male
2   Female
3   Intersex
4   Non-binary
5   Transgender
6   In a different way not listed above
7   I don't know
8   I prefer not to say

Year of birth
Birthyear/age

What is your year of birth?

Answer type: integer [year]

Education level
education

Note: In the analysis we will use education in three categories. You can ask this question in a way that is relevant for your country, and recode the answers to three categories (low, middle, high), according to ISCED coding of levels

What is your highest level of completed education?

1 Early childhood education
2 Primary education
3 Lower secondary education
4 Upper secondary education
5 Post-secondary non-tertiary education
6 Short-cycle tertiary education
7 Bachelor's or equivalent level
8 Master's or equivalent level
9 Doctoral or equivalent level
10 Not elsewhere classified

Primary occupation
occupation

Note: This question may be asked in different ways. For the routing in the questionnaire it is important to know if someone has paid work (employed or self-employed).

What is your work situation?
Multiple answers possible

occupation_1	Paid employment
occupation_2	Self-employed / own business
occupation_3	Voluntary work
occupation_4	Retired (including early)
occupation_5	Unemployed or job seeking
occupation_6	Disabled / unable to work

occupation_7	Social assistance benefit
occupation_8	Housewife or househusband
occupation_9	I am going to school / studying
occupation_10	None of the above *Exclusive*

Block D1: Outcomes

General health
d01

Note: In our online questionnaire we use a scale in which participants click a point in the scale, and the corresponding number is displayed automatically.

How good or bad is your health is **today**?

On the scale 100 means the <u>best</u> health you can imagine. 0 means the <u>worst</u> health you can imagine.

Mark an X on the scale to indicate how your health is **TODAY**

Now, please write the number you marked on the scale in the below.

Your health **today** =

The best health
you can imagine

```
— 100
— 95
— 90
— 85
— 80
— 75
— 70
— 65
— 60
— 55
— 50
— 45
— 40
— 35
— 30
— 25
— 20
— 15
— 10
— 5
— 0
```

The worst health
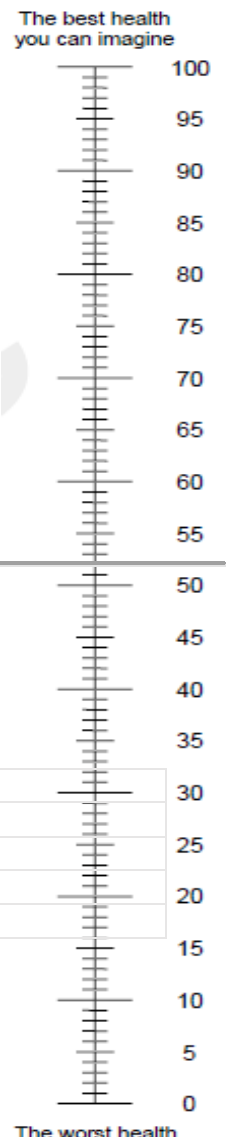
Mental health
d02

In the previous 4 weeks how much of the time…

d02_1	Were you feeling very nervous?
d02_2	Were you so depressed that nothing could cheer you up?
d02_3	Did you feel calm and collected?
d02_4	Did you feel down and depressed?
d02_5	Did you feel happy?

1. Permanently
2. Mostly
3. Often
4. Sometimes
5. Rarely
6. Never

Financial health
d03

How is your financial situation?

1 You are having problems making ends meet
2 You are getting by but have to be careful
3 Things are all right
4 You are doing well

Perceived preparedness
d04

The following questions are about preparedness for a new pandemic.

A lockdown is a measure in which movements and activities are limited such that only organizations supplying basic needs and essential services can function normally. For example, non-essential shops are closed, people work from home as much as possible and travel restrictions apply.

If a lockdown were imposed next month because of the spread of a new virus (variant), to what extent would you feel prepared for this?

1= Not at all prepared
2= Not prepared
3 = Neutral
4 = Well prepared
5 = Very well prepared

---

d05

Note: Question d05 and d06 should be presented on the same page.

Selection: if d04 = 1

You indicate that you do not feel prepared at all.

Selection: if d04 = 2

You indicate that you do not feel prepared. We are curious to know why you do not feel prepared, but also why you may feel a little prepared.

Selection: if d04 = 3

You indicate that you feel neutral about how prepared you are for a new lockdown. We are curious to know your reasons.

Selection: if d04 = 4

You indicate that you do feel prepared. We are curious to know why you feel prepared, but also why you may not feel fully prepared yet.

Selection: if d04 = 5

You indicate that you feel completely prepared.

Selection: if d04 = 1 to 4

Why do you feel not (very well) prepared?

(free response)

d06

Selection: if d04 = 2 to 5

Why do you feel (a little) prepared?

(free response)

---

d07

Selection: Participant is employed (paid)

If a lockdown were imposed next month because of the spread of a new virus (variant), to what extent would you feel **your employer** is prepared for this?

1= Not at all prepared
2= Not prepared
3 = Neutral
4 = Well prepared
5 = Very well prepared

---

d13

Selection: Participant is self-employed / has an own business

If a lockdown were imposed next month because of the spread of a new virus (variant), to what extent would you feel **your workplace / business** is prepared for this?
1= Not at all prepared
2= Not prepared
3 = Neutral
4 = Well prepared
5 = Very well prepared

---

d08

Note: Question d08 and d09 should be presented on the same page.

Selection: if d07 = 1

You indicate that you feel your employer is not prepared at all.

Selection: if d07 = 2

You indicate that you think your employer is not prepared. We are curious to know why you think your employer is not prepared, but also why you think your employer may be somewhat prepared.

Selection: if d07 = 3

You indicate that you feel neutral about how prepared your employer is for another lockdown. We are curious to know your reasons.

Selection: if d07 = 4

You indicate that you feel that your employer is prepared. We are curious to know why you think your employer is prepared, but also why you think your employer may not yet be fully prepared.

Selection: if d07 = 5

You indicate that you think your employer is fully prepared.

Selection: if d07 = 1 to 4

Why do you think your employer is not (very well) prepared?

(free response)

d09

Selection: if d07 = 2 to 5

Why do you think your employer is (a little) well prepared?

(free response)

---

d10

If a lockdown were imposed next month because of the spread of a new virus (variant), to what extent would you feel **your government** is prepared for this?

1= Not at all prepared
2= Not prepared
3 = Neutral
4 = Well prepared
5 = Very well prepared

---

d11

Note: Question d11 and d12 should be presented on the same page.

Selection: if d10 = 1

You indicate that you feel your government is not prepared at all.

Selection: if d10 = 2

You indicate that you think your government is not prepared. We are curious to know why you think your government is not prepared, but also why you think your government may be somewhat prepared.

Selection: if d10 = 3

You indicate that you feel neutral about how prepared your government is for another lockdown. We are curious to know your reasons.

Selection: if d10 = 4

You indicate that you feel that your government is prepared. We are curious to know why you think your government is prepared, but also why you think your government may not yet be fully prepared.

Selection: if d10 = 5

You indicate that you think your government is fully prepared.

Selection: if d10 = 1 to 4

Why do you think your government is not (very well) prepared?

(free response)

d12

Selection: if d10 = 2 to 5

Why do you think your government is (a little) well prepared?

(free response)

Block B1: Behaviour

In this section we measure preventive behaviours that are also relevant in a cold phase to mitigate spread of infections.

Hand washing
b01

In the past 7 days (1 week), how often did you wash your hands with soap and water...

b01_1	after coughing, sneezing or blowing your nose
b01_2	before preparing or eating food
b01_3	after using the toilet
b01_4	after cleaning your house
b01_5	when coming back home

0. Never
1. Rarely
2. Sometimes
3. Often
4. Always
5. Not applicable

Coughing and sneezing in elbow
b02

In the past 7 days (1 week), when you coughed or sneezed, how often did you do so <u>into your elbow</u> instead of your hand?

0. Never
1. Rarely
2. Sometimes
3. Often
4. Always
5. Not applicable: I did not have to cough and/or sneeze

Use of hand sanitizer
b16

In the past 14 days (2 weeks), did you use hand sanitizer gel or spray at the following locations:

		(1) Not applicable, I did not visit this location	(2) No, because there was no hand sanitizer gel or spray available	(3) No, I did not use hand sanitizer gel or spray	(4) Yes, I used hand sanitizer gel or spray
b16_2	Supermarket				
b16_3	At the general practitioner				
b16_4	At the pharmacy				

b16_5	After using public transport					

Self-protective behaviour
b17

Think about the last time someone sneezed or coughed next to you. Did you do anything to protect yourself from getting an infection?

More than one answer possible

b17_1	I stood more than one meter away
b17_2	I politely asked him/she to put on a mask
b17_3	I ventilated the room
b17_4	I protected my mouth and nose
b17_5	I cleaned what he/she touched
b17_6	I avoided shaking his/her hand
b17_7	I asked him/her to use his/her elbow to sneeze into
b17_8	I did none of the above *exclusive*
b17_9	I do not remember *exclusive*

Influenza vaccination

Note: The information about eligibility criteria need to be adapted per country. The text can be hidden in an info box / dropdown box.

In the Netherlands, the following people are eligible for the flu vaccine:
- People aged 60 or older
- Children and adults with certain health problems, including:
  - Patients who have permanent lung damage because of an infection with COVID-19
  - Patients with abnormalities and functional disorders of the airways and lungs
  - Patients with a chronic heart disorder
  - Patients with diabetes mellitus
  - Patients with a chronic kidney disease
  - Patients who recently had a bone marrow transplant
  - People who are infected with HIV
  - People with reduced resistance to infection (e.g., because of (functional) asplenia, auto-immune disease, liver cirrhosis, chemotherapy or immunosuppressive medication)
  - People with dementia

- People with obesity (a BMI of 40 or higher)
- People with a cochlear implant
- Patients with neurological and neuromuscular disorders
- Children aged between 6 months and 18 years who are long-term salicylate users
- Women who are 22 weeks or more pregnant
- People with an intellectual disability
- People who are living in a nursing home, who are not included in one of the above categories
- People who work in healthcare

b18

Are you eligible for the flu vaccine?

1 Yes
2 No

b19

Selection: Participant is eligible for the flu vaccine (b18 = 1)

Are you going to get the flu vaccine this season?

1 Yes
2 No
3 Do not know yet

Staying home when sick

Note: Items b03 up to b07 are relevant in the Netherlands, because it is an advice of the government to stay at home when someone is feeling sick. If this advice does not apply in your country, you can skip these questions.

b03

Do you currently or in the past four weeks have (had) any of the following symptoms? Count symptoms even if they only slightly affected you.
More than one answer possible.

b03_1	Cold symptoms (such as nasal cold, runny nose, sneezing, sore throat)
b03_2	Coughing
b03_3	Shortness of breath
b03_4	Increased temperature or fever

b03_5	Cold shivers
b03_6	Muscle and/or body aches
b03_7	No, I have none of these symptoms *Exclusive*

b04

Selection: Participant has any of the symptoms b03_1 up to b03_6

Do you think these symptoms come/came from a condition you have had for some time, such as allergies or a chronic health condition?

1 Yes, I am very sure about this
2 Yes, probably
3 Maybe, I am not sure
4 No, these symptoms feel different
5 No, I do not have any conditions that cause these types of symptoms

b05

Selection: Participant has any of the symptoms b03_1 up to b03_6

Do/did you feel sick when you had these symptoms?

1 Yes
2 A little
3 No
4 I don't know

b06

Selection: Participant is feeling sick (a little / yes)

The advice is to stay home when you are sick. This can be difficult if your symptoms are mild, no one can do your groceries, or you are busy at work.

While you were feeling sick, did you go outside to go to work, run errands, take a walk or visit other people, for example?
More than one answer possible.

b06_1	Yes, for (medical) assistance
b06_2	Yes, to run errands

b06_3	Yes, to work or go to school/training	
b06_4	Yes, to get some fresh air or walk the dog	
b06_5	Yes, to go to a restaurant/bar or a cultural venue (cinema, theatre)	
b06_6	Yes, to visit family or friends	
b06_9	Yes, to travel abroad	
b06_7	Yes, for another reason	
b06_8	No *Exclusive*	

---

b20

Note: Only display the item(s) that are needed for the participant based on their answers on b06.

Selection: Participant went outside (any of b06_1 to b06_7 or b06_9 is yes)

You answered you went outside for the following situations while you were feeling sick. Did you wear a face mask in these situations while you were feeling sick?

		Did you wear a face mask?
b20_1	When I went for (medical) assistance	No / yes
b20_2	When I went to run errands	No / yes
b20_3	When I went to work or to school/training	No / yes
b20_4	When I got some fresh air or walked the dog	No / yes
b20_5	When I went to a restaurant/bar or a cultural venue (cinema, theatre)	No / yes
b20_6	When I visited family or friends	No / yes
b20_7	When I travelled abroad	No / yes
b20_8	When I went outside for another reason	No / yes

---

b07

Selection: Participant has any of the symptoms b03_1 up to b03_6

While you have/had symptoms, did you visit someone who may become seriously ill from a respiratory infection (for example, someone who is 70 years old or older, or someone with a severe immune disorder)?

1. Yes, wearing a face mask
4. Yes, not wearing a face mask
2. No
3. I don't know

Working from home
b08

Selection: occupation is Employed (paid) or self-employed

In the last 7 days, how many hours did you work?

Answer type: Integer Min: 0 Max: 168

---

b21

Selection: occupation is Employed (paid) or self-employed

Are you able to work from home?

1. Yes
2. No

---

b09

Selection: has worked more than 1 hour (b08 > 0) and can work from home

Of the [b08] hours you worked in the last 7 days, how many hours did you work from home?

Answer type: Integer Min: 0 Max: [b08]

Physical contact
b10

We would like to know how many different people you had **physical** contact with yesterday (not including people you live).
Physical contact occurs when, for example, you talk to someone, touch someone, kiss someone, or play sports with someone. Also consider contacts at school or work. Phone calls, e-mail, and other online contacts do not count.

The following questions can be tricky; if you don't know exactly, you can give an estimate.

Did you have **physical** contact with others yesterday (excluding people you live with and excluding virtual contacts)?

      1. Yes
      2. No

---

b11

Selection: Participant had physical contact with others yesterday (b10 = 1)

How many people did you speak to yesterday? (excluding people you live with and excluding virtual contacts)

Answer type: integer

---

b12

Selection: Participant talked to 1 or more person(s) (b11 > 0)

You indicated that you talked to [b11] person(s) yesterday.

How many of these [b11] persons had you also direct physical contact with or touch yesterday? (for example shaking hands, when playing sports, hugging or kissing)

Answer type: integer, [b11] or less

---

b13

Selection: participant talked to 1 or more person(s) (b11 > 0)

How many of these [b11] people you talked to do you think were people over 70 years old or with vulnerable health?
(By vulnerable health, we mean people with medical conditions that could make them seriously ill more easily.)

Answer type: integer, [b11] or less

---

b14

Selection: Participant touched 1 or more people (b12 > 0)

You indicated that you had direct physical contact or touched [b12] person(s) yesterday.

How many of these [b12] people do you think were people over 70 years old or with vulnerable health? (By vulnerable health, we mean people with medical conditions that could make them seriously ill more easily.)

Answer type: integer, [b12] or less

---

day_yesterday

Note: It is only needed to ask this question if the questionnaire software does not collect the date of completion automatically.

What day of the week was it yesterday?

(drop-down: Monday-Sunday)

Preparedness behaviours
b15

Below is a list of things you (and your household members) can do to be well prepared in case of a disaster or emergency. We would like to ask you to rate the below measures on whether you have implemented them or not.

Prepare your home

b15_1	Have a 3-day emergency supply stock of drinks and food (e.g. food with a long shelf life, require little or no cooking, water and refrigeration) and (if needed) medication
b15_2	Have a first aid kit at home
b15_3	Have a 3-day emergency supply stock of water for cooking and hygiene
b15_6	Have a supply of face covers, disinfectant, and soap

General readiness

| b15_4 | Receive public warning messages (i.e. by signing up for alerts from authorities, if needed) |
| b15_5 | Have participated in a first aid course in the last 3 years |

Answer type: Yes/No for every measure
Add a 'Don't know/Not applicable' answer for item b15_4

Block E1: Behaviour-specific determinants
In this section, we measure determinants of specific behaviours that are included in the section Behaviour. These are also validated in the Dutch covid-19 behaviours cohort survey.

Knowledge
e01

Note: Statements below should be displayed in a random order

Below you see statements about the seasonal flu. Please select for each statement whether you think it is true or false.

e01_1	Vaccinated people cannot get the seasonal flu	False
e01_2	People who have seasonal flu without fever are not contagious	False
e01_3	Symptoms of seasonal flu appear immediately after being infected	False
e01_4	Pets can transmit seasonal flu to humans	False
e01_5	The seasonal flu should be treated with antibiotics	False
e01_6	You can catch the seasonal flu from being in the same room as someone who is sick	True
e01_7	Seasonal flu can lead to serious health complications and death	True

For every statement:
1. True
2. False
3. I don't know

Response-efficacy
e02

Suppose you were to carefully follow the following advice.
How well do you think the following advice or measures would help against the spread of infections (corona, colds, flu)?

e02_1	Wash your hands after coughing, sneezing or blowing your nose
e02_2	Wash your hands before preparing or eating food
e02_3	Wash your hands after using the toilet
e02_4	Wash your hands after cleaning your house
e02_5	Wash your hands when coming back home
e02_6	Cough and sneeze into your elbow
e02_7	Use hand sanitizer gel or spray
e02_8	Stay home when you are sick

e02_9	When you are sick, wear a face mask when going outside
e02_10	When having symptoms, keep distance from others
e02_11	When having symptoms, work from home
e02_12	When having symptoms, avoid physical contact with people who can become seriously ill from an infection

1. Does not help
2. Hardly helps
3. Helps a little
4. Helps much
5. Helps very much

Self-efficacy
e03

How difficult or easy do you find it to...

e03_1	Wash your hands after coughing, sneezing or blowing your nose
e03_2	Wash your hands before preparing or eating food
e03_3	Wash your hands after using the toilet
e03_4	Wash your hands after cleaning your house
e03_5	Wash your hands when coming back home
e03_6	Cough and sneeze into your elbow
e03_7	Use hand sanitizer gel or spray
e03_8	Stay home when you are sick
e03_9	When you are sick, wear a face mask when going outside
e03_10	When having symptoms, keep distance from others
e03_11	When having symptoms, work from home
e03_12	When having symptoms, avoid physical contact with people who can become seriously ill from an infection

1. Very difficult
2. Difficult
3. Neutral
4. Easy
5. Very easy
6. Not applicable *(do not show for e03_2, e03_3, e03_5)*

Social norm
e04

To what extent do you disagree or agree with the following statements?

What <u>do you think</u> people who are important to you do?

Most of the people who are important to me...

e04_1	Wash their hands after coughing, sneezing or blowing their nose
e04_2	Wash their hands before preparing or eating food
e04_3	Wash their hands after using the toilet
e04_4	Wash their hands after cleaning their house
e04_5	Wash their hands when coming back home
e04_6	Cough and sneeze into their elbow
e04_7	Use hand sanitizer gel or spray
e04_8	Stay home when they are sick
e04_9	When they are sick, wear a face mask when going outside
e04_10	When having symptoms, keep distance from others
e04_11	When having symptoms, work from home
e04_12	When having symptoms, avoid physical contact with people who can become seriously ill from an infection

1. Strongly disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly agree
6. Do not know

Block C1: Generic determinants

Capability

In this section we measure generic (i.e., not behaviour-specific) determinants of behaviours that may become relevant in a hot phase. We focus on determinants that are a) also relevant in a cold phase (i.e., because they are also associated with other health behaviours); b) changeable; c) cannot be changed overnight (in a hot phase); d) do not have negative (but do have positive) spill over effects.

Health literacy
c01

On a scale from very easy to very difficult, how easy would you say it is for you to:

c01_1	judge when you may need to get a second opinion from another doctor?
c01_2	use information the doctor gives you to make decisions about your illness?
c01_3	find information on how to manage mental health problems like stress or depression?

c01_4	judge if the information on health risks in the media is reliable? (i.e. TV, internet or other media)
c01_5	find out about activities that are good for your mental well-being? (i.e. meditation, exercise, walking, pilates etc.)
c01_6	understand information in the media on how to get healthier? (i.e. internet, newspapers, magazines)

1. very easy
2. easy
3. difficult
4. very difficult
5. Don't know

Resilience
c02

Indicate how much you disagree or agree with each of the statements.

c02_1	I have a hard time making it through stressful events (reverse)
c02_2	It does not take me long to recover from a stressful event
c02_3	It is hard for me to snap back when something bad happens (reverse)

1. Strongly disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly agree

Opportunity

Unmet healthcare needs
c03

Was there any time during the last 12 months when you really needed a medical examination or treatment (excluding dental) for yourself?

1. Yes (I really needed, at least on one occasion, medical examination or treatment)
2. No (I did not need any medical examination or treatment)

c04

Selection: If c03 = 1

Did you have a medical examination or treatment each time you really needed one?

    1. Yes (I had a medical examination or treatment each time I needed)
2. No (there was at least one occasion when I did not have a medical examination or treatment)

Social support
c05

How many people are so close to you that you can count on them if you have great personal problems?

0 none
1 1–2
2 3–5
3 5+

---

c06

How much interest and concern do people show in what you do?

1 none
2 little
3 uncertain
4 some
5 a lot

---

c07

How easy is it to get practical help from neighbours if you should need it?

1 very difficult
2 difficult
3 possible
4 easy
5 very easy

Motivation

Vaccine confidence
c08

The following questions ask you to reflect on vaccination in general.
To which extent do you agree with the following statements:

c08_1	Vaccines are important for children to have
c08_2	Vaccines are important for adults to get
c08_3	Vaccines are safe
c08_4	Vaccines are effective
c08_5	Vaccines are compatible with my beliefs

1. Strongly disagree
2. Tend to disagree
3. Do not know
4. Tend to agree
5. Strongly agree

General trust (in institutions)
c09

On a scale of 0-10 how much do you personally trust each of the following institutions?

0 no trust at all – 10 complete trust

c09_1	The (national) government
c09_2	The legal system
c09_3	The police
c09_4	Politicians
c09_5	Political parties
c09_6	European institutions
c09_7	United Nations
c09_8	World Health Organisation (WHO)
c09_9	Science
c09_10	Healthcare system
c09_11	Media
c09_12	(Country's) Ministry of Health
c09_13	National public health agency
c09_14	Doctors

Risk perception future pandemics and disasters
c10

How likely do you think the following disasters are to occur in your immediate region within the next five years?

c10_1	Man-made disasters (e.g. oil spills, industrial or nuclear accidents)
c10_2	A highly contagious disease outbreak (e.g. Ebola, COVID-19, bird flu)
c10_3	Natural disasters (e.g. floods, drought, forest fires, earthquakes, violent storms)
c10_4	Terrorist attacks
c10_5	Armed conflicts (e.g. war)

1 = Very unlikely
2 = Quite unlikely
3 = Somewhat unlikely
4 = Somewhat likely
5 = Quite likely
6 = Very likely
7 = Don't know

c11

How personally affected (emotionally and practically) would you be if the following disaster happens in your immediate region?

c11_1	Man-made disasters (e.g. oil spills, industrial or nuclear accidents)
c11_2	A highly contagious disease outbreak (e.g. Ebola, COVID-19, bird flu)
c11_3	Natural disasters (e.g. floods, drought, forest fires, earthquakes, violent storms)
c11_4	Terrorist attacks
c11_5	Armed conflicts (e.g. war)

1 = Not affected
2 = Mildly affected
3 = Moderately affected
4 = Severely affected
5 = Don't know

c14

How anxious do you feel when you think about a future pandemic that might occur in your life?

1. Not anxious
2. A bit anxious
3. Anxious
4. Very anxious

Conspiracy thinking
c12

For each of the following statements, please indicate the extent to which you agree or disagree with the statement.

I think that….

c12_1	… many very important things happen in the world, which the public is never informed about
c12_2	… politicians usually do not tell us the true motives for their decisions
c12_3	… government agencies closely monitor all citizens
c12_4	… events which superficially seem to lack a connection are often the result of secret activities
c12_5	… there are secret organizations that greatly influence political decisions

1. Strongly disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly agree

Social cohesion
c13

In the following questions, please indicate the extent to which you feel connected to the country, province and neighbourhood where you live.

Below you see two circles each at different distances from each other.

The left circle containing the text "Z" refers to yourself, the right circle containing an "A" refers to the other (country, province and neighbourhood).

The amount of overlap between the circles indicates how connected you feel to the other (1 = totally unconnected, 7 = fully connected).
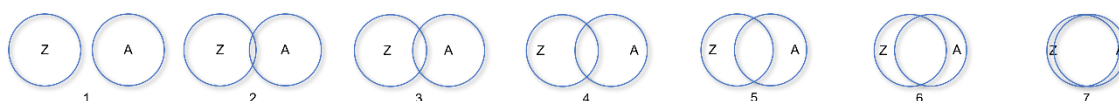
Select the number under the circles you think best reflects the overlap between yourself and the other.

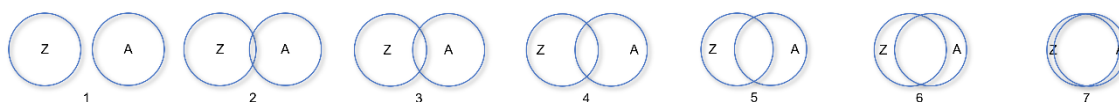Please select the picture below that best describes how connected you feel to:

c13_1 your country
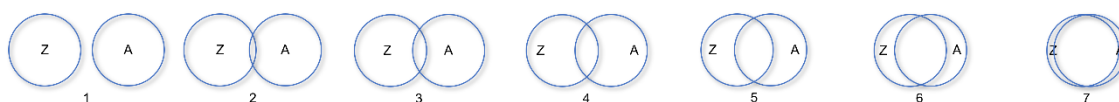
c13_2 your region (I.e. province)

c13_3 your neighbourhood

Block A2: Demographics

Note: The essential demographic questions are asked in block A1. The other demographic questions follow here at the end of the questionnaire.

Healthcare worker
healthcare_worker

Selection: occupation has paid employment or is self-employed

Do you work in healthcare?

1 Yes, as a direct healthcare provider (you have contact with patients)
2 Yes, but not as a direct healthcare provider (you do not have contact with patients)
3 No

Informal care
informal_care

Do you currently provide care or assistance to one or more individuals with an age-related condition, chronic illness, or disability at least once a week?
(Excluding care provided as part of your profession)

1 Yes
2 No

Country of origin

Note to researchers: For [country] you fill in the country where the research is conducted. The participants do not need to specify the exact country if they or their parents were born somewhere else.

country_born

Were you born in [country]?
1 Yes
2 No

country_mother

Was your mother born in [country]?
1 Yes
2 No
3 Do not know

country_father

Was your father born in [country]?
1 Yes
2 No
3 Do not know

Urbanisation
urbanisation

Where do you live?

1 In a rural area
2 In a suburban area
3 In an urban area

Household members
household_members

1 Do you live alone?

Selection: Participant does not live alone

2 Do you live with children under 18 years old?

Selection: Participant does not live alone

3 Do you live with individuals who are over 70 years old or with vulnerable health? (By vulnerable health, we mean people with medical conditions that could make them seriously ill more easily)

Answer type: yes/no for every question.
Note: The second and third question are only presented if the participant answers "no" on the first question.

Medical risk group
health_risk

Do you yourself have one or more of the following health problems?
- chronic respiratory or lung problems
- chronic heart diseases
- diabetes mellitus (diabetes)
- serious kidney disease leading to dialysis or kidney transplantation
- an HIV infection
- severe liver disease
- obesity (BMI>30)
- lower resistance to infections:
  - due to medications for autoimmune diseases
  - after organ or stem cell transplantation
  - due to a non-functioning or missing spleen
  - due to blood diseases
  - due to severe immune disorders requiring treatment
  - due to chemotherapy and/or radiotherapy for cancer
  - due to immune-reducing medication

1 Yes
2 No

Mental health diagnosis
mental_health_diagnosis

Do you have any of the following mental health conditions that have been diagnosed by a medical professional (i.e. doctor or psychologist)?

1 Depression
2 Anxiety disorder
3 Other mental health condition

Answer type: yes/no to every condition