Ambivalence and adherence to preventive measures during the COVID-19 pandemic:
Data from the U.S. and Germany

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A R T I C L E   I N F O

Article history:
Received 15 December 2021
Revised 4 March 2022
Accepted 28 March 2022
Available online 1 April 2022

Dataset link: Ambivalence and Self-Reported Adherence to Recommendations to Reduce the Spread of COVID-19 (Original data)

Keywords:
Psychology
Covid-19
Behavioral adherence
Attitudes
Ambivalence
Mixed emotions

A B S T R A C T

This paper presents three datasets (.csv) providing raw data of three surveys about self-reported behavior, attitudes, and emotions regarding the COVID-19 pandemic. Data for Study 1 comes from a German sample, while data for Study 2 and Study X come from U.S. samples. For each survey, data was collected online through different survey software. The surveys contained items concerning self-reported ambivalence (two measures) regarding the COVID-19 pandemic and preventive measures to reduce the spread of the coronavirus, self-reported adherence to these preventive measures, and sociodemographic variables. Data can be used for re-analyses and exploratory purposes and comparisons between German and U.S. citizens in the domain of adherence, attitudes, and emotions.

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https://doi.org/10.1016/j.dib.2022.108124
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Specifications Table

| Subject | Psychology |
|---------|------------|
| Specific subject area | Ambivalence and adherence to measures to reduce the spread of COVID-19; Attitudes and emotions towards COVID-19 pandemic |
| Type of data | .csv (comma separated) |
| How the data were acquired | Online surveys |
| | Study 1: Unipark (https://www.unipark.com/), Study 2 and X: Qualtrics (https://www.qualtrics.com/) among the adult populations in Germany and the U.S. |
| Data format | Raw |
| Description of data collection | The dataset for Study 1 originates from a joint study conducted by different researchers from the Social Cognition Center Cologne. Data was acquired via survey in a representative (for age and gender) German sample. Three hundred one participants were recruited through the online panel provider Toluna (https://de.toluna.com/#/) between April 29th, 2020 and May 4th, 2020. Data for Study 2 was collected via a survey in a U.S. sample. Three hundred ninety participants were recruited through the online panel provider Prolific (https://www.prolific.co/) on September 19th, 2020. The dataset for Study X originates from an openly available dataset containing 1.394 cases. Data was acquired via survey in a U.S. sample, recruited through social media sites (Facebook and Twitter) and the Society for Personality and Social Psychology mailing list with the encouragement to share the survey with as many people as possible. Data collection took place between March 28th and March 30th, 2020. |
| Data source location | Study 1 and 2: |
| | Institution: University of Cologne |
| | City/Town/Region: Cologne |
| | Country: Germany |
| Study X: |
| | Institution: University of Tennessee |
| | City/Town/Region: Knoxville, Tennessee |
| | Country: United States |
| Data accessibility | Data for Study 1 and 2 (primary data), as well as Study X (secondary data), are available at https://osf.io/eu6k5/ |
| Related research article | Primary data for Study X is available at https://osf.io/32jnf/ Schneider, I. K., Dorrough, A. R., & Frank, C. (2022). Ambivalence and Self-Reported Adherence to Recommendations to Reduce the Spread of COVID-19. Social Psychology. 52(6), 362–274. https://doi.org/10.1027/1864-9335/a000465. |

Value of the Data

- The datasets provide useful information about the social and psychological consequences of the COVID-19 pandemic by including data from three surveys regarding self-reported behavior, emotions, and attitudes about the COVID-19 pandemic and the preventive measures and recommendations to reduce the spread of the coronavirus.
- The data provide insight into attitudes and emotions that people experience in response to the preventive measures and how these relate to their (self-reported) behavior.
- Ambivalence is often overlooked as a predictor in research on attitudes and emotions. As such, the datasets allow for a unique perspective on the determinants of people’s self-reported behavior.
- Data comes from representative samples from Germany and the U.S. collected through online panels (Prolific, Toluna) and social media (Facebook, Whatsapp, Twitter), which offer access to broader and more representative samples compared to (classical lab) studies with students [1,2].
- Data can be used for subgroup comparisons based on sociodemographic information or for analyses on a subset of behavioral recommendations.
• Datasets from Study 1 and Study 2 allow comparisons between Germany and the U.S. participants on different variables.

1. Data Description

Data for Study 1, 2 and X are provided in .csv format and are available on OSF (https://osf.io/eu6k5/). They include all variables analyzed in [3] and additional variables reported in the supplementary material of this publication. The main theme in all surveys was the relationship between feelings and attitudes and adherence to the preventive measures. All three datasets contain variables regarding behavioral recommendations to reduce the spread of COVID-19. While the datasets of Study 1 and 2 include variables regarding different behavioral recommendations, Study X only includes variables regarding social distancing. The datasets also include variables measuring emotions and feelings regarding the COVID-19 pandemic. Tables 1–3 include short descriptions of variables of each dataset. Full descriptive tables can be also be found on OSF (https://osf.io/eu6k5/). Table 4 summarizes the main descriptive variables of all datasets.

Table 1
Short description of variables in the dataset of Study 1 (full questionnaires and full description table can be found here: https://osf.io/eu6k5/).

| Variable Name | Description |
|---------------|-------------|
| gender        | Gender      |
| age           | Age         |
| income        | Monthly income |
| occupation    | Current occupation |
| education     | Highest educational degree |
| student       | Currently enrolled as a student |
| politicalO    | Political orientation |
| Ambiv1        | Worry regarding COVID-19 pandemic |
| Ambiv2        | Hope regarding COVID-19 pandemic |
| Ambiv3        | Conflicting thoughts and feelings regarding the COVID-19 pandemic |
| Ambiv4        | Positivity towards behavioral recommendations |
| Ambiv5        | Negativity towards behavioral recommendations |
| Ambiv6        | Conflicting thoughts and feelings regarding behavioral recommendations |
| Coop1 – Coop12| Behavioral recommendations |

Table 2
Short description of variables in the dataset of Study 2 (full questionnaires and full description table can be found here: https://osf.io/eu6k5/).

| Variable Name  | Description |
|----------------|-------------|
| coop_1 – coop_12| Behavioral recommendations |
| worry_1        | Worry regarding COVID-19 pandemic |
| hope_1         | Hope regarding COVID-19 pandemic |
| macrousub_1    | Conflicting thoughts and feelings regarding the COVID-19 pandemic |
| pos_1          | Positivity towards behavioral recommendations |
| neg_1          | Negativity towards behavioral recommendations |
| microsub_1     | Conflicting thoughts and feelings regarding behavioral recommendations |
| cont_1 – cont_12| Controversy for each behavioral recommendation (coop_1 – coop_12) |
| sex            | Gender      |
| age            | Age         |
Table 3
Short description of variables in the dataset of Study X (full questionnaires and full description table can be found here: https://osf.io/ef6k5/).

| Variable Name         | Description                                                                 |
|-----------------------|-----------------------------------------------------------------------------|
| us                    | Residence in the United States                                             |
| age                   | Age                                                                          |
| genderString          | Gender                                                                       |
| education             | Highest degree of education                                                 |
| politics              | Political orientation                                                       |
| politics_10_TEXT      | Free text input to share other political orientation                        |
| Positivity            | Positivity towards staying 6 feet away from people outside the household     |
| Negativity            | Negativity towards staying 6 feet away from people outside the household     |
| Mixed                 | Mixed feelings towards staying 6 feet away from people outside the household |
| Intention             | Intention to stay 6 feet away from people outside the household              |
| ThinkFreq             | Thought frequency about COVID-19 pandemic over the past week                |
| NewsFollow            | Following the news about the COVID-19 pandemic                              |
| EmoAngry – EmoSad     | Emotions regarding COVID-19 pandemic                                         |

Table 4
Summary of main descriptive variables.

|                  | Study 1          | Study 2          | Study X          |
|------------------|------------------|------------------|------------------|
| N                | 301              | 388              | 1394             |
| \text{Age:}      |                  |                  |                  |
| Mean (S.D.)      | 50.06 (16.15)    | 33.80 (11.43)    | 38.75 (14.99)    |
| Range            | 18 – 80          | 18 - 76          | 16 - 100         |
| Gender           |                  |                  |                  |
| Male             | 143 male (47.5\%)| 194 male (50.0\%)| 342 male (24.5\%)|
| Female           | 156 female (51.8\%)| 185 female (47.7\%)| 758 female (54.4\%)|
| Other            | 1 diverse (0.3\%) | 5 other (1.3\%)  | 20 diverse (1.4\%)|
| NA               | 1 NA (0.3\%)     | 4 rather not say (1.0\%) | 274 NA (19.7\%) |

Number of relevant questions 25 32 21

2. Experimental Design, Materials and Methods

Please note that data was collected during different stages of the COVID-19 pandemic. Differences emerging between the three datasets may reflect differences in the inquiry period and may be country and time-specific.

3. Study 1

3.1. Sample

The data for Study 1 were collected as part of a joint study conducted by different researchers from the Social Cognition Center Cologne, in which we were offered to include multiple items. As such, we had no influence on the type of sample that was selected. Data was acquired via survey in a representative (for age and gender) German sample. Three hundred one participants were recruited through the online panel provider Toluna\(^1\) (https://de.toluna.com/#/) between April 29th, 2020 and May 4th, 2020. All items were mandatory, and participants received a fixed

\(^{1}\) Note that while data collection via online panels offers advantages, such as access to broader and more representative samples compared to (classical lab) studies with students \(^1,2\), there are also some limitations that need to be addressed. Generally, even though online panels try to prevent participants from having multiple accounts by asking for personal information, the possibility of someone participating multiple times with different accounts cannot be fully excluded \(^1\). Furthermore, there are mixed findings concerning participants’ attention. While some studies have shown...
payment according to the regulations of the panel provider, and a bonus payment between 0 and 5 Euros depending on their decisions in a task that was part of another study included in the batter.

3.2. Measures and materials

3.2.1. Adherence to preventive measures

To measure adherence to preventive measures, we asked participants to indicate how often they follow the following behavioral recommendations to reduce the spread of COVID-19 on a 5-point scale ranging from 1 = ‘never’ to 5 = ‘always’:

- Washing your hands with soap regularly and thoroughly.
- Avoid shaking hands or hugging.
- Sneeze or cough in the crook of your arm or a tissue.
- Keeping distance from others in public.
- Staying at home as often as possible.
- If possible, work from home.
- Avoid peak hours (for instance, at the supermarket).
- Avoid larger meetings with friends or family.
- Avoid crowds.
- When possible, do not use public transport (it is better to walk, cycle or drive).
- Restrict personal meetings with elderly or chronically ill people for their protection.
- Use breath protection in public (e.g., protective masks, cloths, or scarves).

3.2.2. Feelings about the COVID-19 pandemic

Worry about the Corona pandemic was measured by one item: “When you think about the Corona pandemic, how worried are you?” (10-point scale; 1 = ‘not at all worried’, 10 = ‘very worried’). Hope about the Corona pandemic was measured by one item: “When you think about the Corona pandemic, how hopeful are you?” (10-point scale; 1 = ‘not at all hopeful’, 10 = ‘very hopeful’). To measure subjective ambivalence about the pandemic, we asked, “To what degree do you have conflicting thoughts and feelings with regard to the Corona pandemic?” (10-point scale; 1 = ‘not at all’, 10 = ‘very strongly’).

3.2.3. Feelings about the preventive measures

Positive affect regarding the preventive measures was measured by one item: “When you think about the positive aspects, and ignore the negative aspects, how positive are you about the recommendations you should follow?”, on a 10-point scale ranging from 1 = ‘not at all positive’ to 10 = ‘very positive’. Negative affect regarding the preventive measures was measured by one item: “When you think about the negative aspects, and ignore the positive aspects, how negative are you about the recommendations you should follow?”, on a 10-point scale ranging from 1 = ‘not at all negative to 10 = ‘very negative’. We measured subjective ambivalence about the recommendations with one item: “To what degree do you have conflicting thoughts and feelings with regard to the recommendations you should follow?” (10-point scale; 1 = ‘not at all’, 10 = ‘very strongly’).

3.2.4. Demographics

Demographic variables, age, gender, income, occupation, education, and political orientation were assessed.

that participants who were recruited via online panels show lower attention compared to other sample sources such as [4,5]; others showed high rates of attention [6].
4. Study 2

4.1. Sample

Data for Study 2 were acquired via a survey in a U.S. sample. Three hundred ninety participants were recruited through the online panel provider Prolific1 (https://www.prolific.co/) on September 19th, 2020. We chose this sample to see whether we could replicate our findings in a sample from a different country. All items were mandatory, and participants were paid per the regulations of the panel provider.

4.2. Measures and materials

Because this study was conceptualized as a replication of Study 1, we translated the items used there (see above) in English. Specifically, we included the following items that queried participants on how often they followed recommendations to prevent spread, how worried and hopeful they felt about the Corona pandemic, to what degree they experienced conflicting thoughts and feeling about the Corona pandemic, how positive and negative they were about the recommendations to prevent spread, and to what degree they experienced conflicting thoughts and feelings about the recommendations to prevent spread. We added one item that was not included in Study 1 in which we asked participants, “Please indicate for each recommendation how controversial it is in your opinion” on a 10-point scale ranging from 1 = ‘not at all controversial’ to 10 = ‘very controversial’. Finally, we assessed age and gender. All items for Study 2 can be viewed in Table 2.

5. Study X

5.1. Sample

The data for Study X is secondary data from an openly available dataset containing 1,394 cases. As such, we had no influence on the selection of the sample. Data was acquired via a survey in a U.S. sample, recruited through social media sites (Facebook and Twitter) and the Society for Personality and Social Psychology mailing list with the encouragement to share the survey with as many people as possible.2 Data collection took place between March 28th and March 30th, 2020. No payment was offered.

5.2. Measures and materials

5.2.1. Adherence to social distancing

To measure adherence to social distancing, participants had to indicate to what degree they agree with the following statement: "I intend to stay 6 feet away from people outside my household in the next week." (7-point scale: 1 = ‘strongly disagree’, 2 = ‘moderately disagree’, 3 = ‘slightly disagree’, 4 = ‘neither agree nor disagree’, 5 = ‘slightly agree’, 6 = ‘moderately agree’, 7 = ‘strongly agree’).

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1 Note that while data collection via snowball sample on social media offers some advantages, such as for example effective and fast recruitment [7] as well as access to hard-to-reach populations [8], there are also some limitations. Snowball samples can be subject to selection bias, as they depend on the researchers’ personal sources and contacts [9]. Furthermore, some groups, such as women, may be over-represented due to their likely higher cooperativeness [10]. Thus, the representativeness of snowball samples is limited [9].
5.2.2. Emotions regarding COVID-19 pandemic

To examine emotions regarding the pandemic, participants rated to what degree they experienced the following emotional states: angry, ashamed, confident, frightened, grateful, hopeful, hopeless, lonely, and sad. For each emotion they were asked "When you have thought about the coronavirus pandemic over the past week, has it made you feel [emotion]?” (7-point scale; 1 = 'no, not at all', 2 = 'yes, but only a little', 3 = 'yes, slightly', 4 = 'yes, somewhat', 5 = 'yes, moderately', 6 = 'yes, quite a bit', 7 = 'yes, extremely').

5.2.3. Feelings regarding social distancing

Positive affect regarding social distance was measured on item: “Think for a moment about the positive aspects of staying 6 feet away from people outside your household. How positive do you feel about staying 6 feet away from people during the next week?” (7-point scale; 1 = 'not at all positive', 2 = 'only a little positive', 3 = 'slightly positive', 4 = 'moderately positive', 5 = 'quite positive', 6 = 'very positive', 7 = 'extremely positive'). Negative affect regarding social distance was measured on item: “Think for a moment about the negative aspects of staying 6 feet away from people outside your household. How negative do you feel about staying 6 feet away from people during the next week?” (7-point scale; 1 = 'not at all negative', 2 = 'only a little negative', 3 = 'slightly negative', 4 = 'moderately negative', 5 = 'quite negative', 6 = 'very negative', 7 = 'extremely negative'). Subjective ambivalence about social distance was measured by one item: “How mixed are your feelings about staying 6 feet away from people outside your household in the next week?” (7-point scale; 1 = 'not at all mixed', 2 = 'only a little mixed', 3 = 'slightly mixed', 4 = 'moderately mixed', 5 = 'quite mixed', 6 = 'very mixed', 7 = 'extremely mixed').

5.2.4. Thought and news frequency

Thought frequency about the pandemic was assessed by one item: “How often have you thought about the coronavirus pandemic over the past week?” (7-point scale; 1 = 'never', 2 = 'rarely', 3 = 'occasionally', 4 = 'regularly', 5 = 'quite often', 6 = 'very often', 7 = 'constantly'). News following was measured by the item “I follow news about the coronavirus pandemic closely” (7-point scale; 1 = 'strongly disagree', 2 = 'moderately disagree', 3 = 'slightly disagree', 4 = 'neither agree nor disagree', 5 = 'slightly agree', 6 = 'moderately agree', 7 = 'strongly agree').

5.2.5. Demographics

Age, gender, whether participants live in the U.S., education, and political orientation were assessed.

Ethics Statements

We hereby declare that informed consent was obtained from all participants, data were fully anonymized, and the data redistribution policies of the social media platform we used for data collection were complied with. Ethical approval was not necessary.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data Availability

Ambivalence and Self-Reported Adherence to Recommendations to Reduce the Spread of COVID-19 (Original data) (Open Science Framework).
CRediT Author Statement

Celine Frank: Writing – original draft, Data curation; Angela R. Dorrough: Supervision, Writing – review & editing; Iris K. Schneider: Data curation, Supervision, Writing – review & editing.

Acknowledgments

We gratefully acknowledge Andreas Glöckner, Simone Dohle, and Jeff Larsen for their generous support in data collection/sharing.

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

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