

Supplementary Material to the article “Misinformation in Germany During the Covid-19 Pandemic: A Cross-Sectional Survey on Citizens’ Perceptions and Individual Differences in the Belief in False Information”

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Published: June, 2022

Associated Article: Leuker, C., Eggeling, L. M., Fleischhut, N., Gubernath, J., Gumenik, K., Hechtlinger, S., Kozyreva, A., Samaan, L., & Hertwig, R. (2022). Misinformation in Germany during the Covid-19 pandemic: A cross-sectional survey on citizens’ perceptions and individual differences in the belief in false information. *European Journal of Health Communication*, 3(2), 13-39. <https://doi.org/10.47368/ejhc.2022.202>

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S1. Data collection timepoints

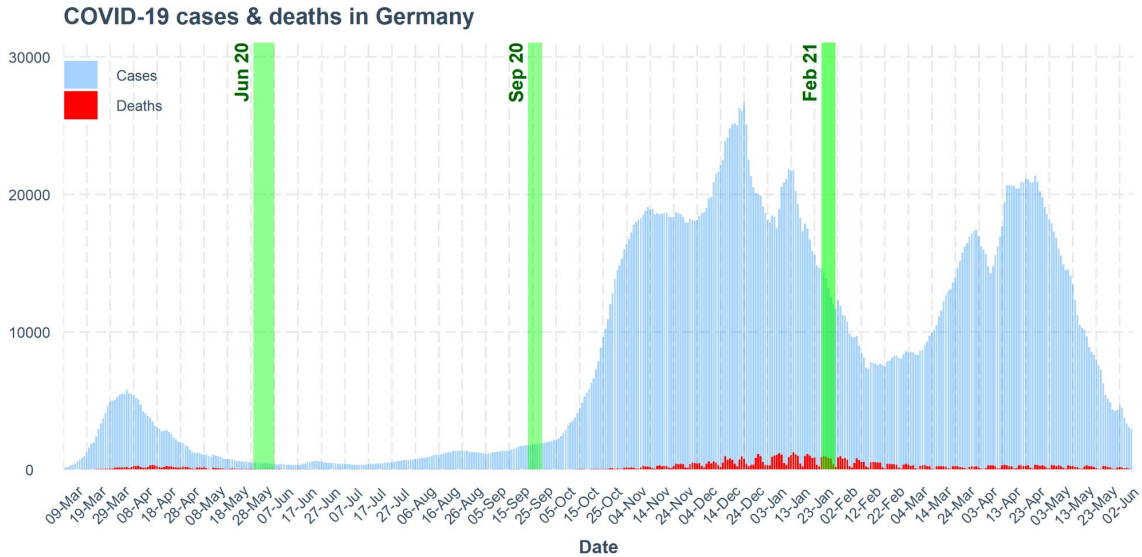


Figure 1. The three waves of data collection mapped onto the evolution of COVID-19 infections (rolling 7-day average) and deaths in Germany. Code and visualisation adapted from Garrett et al. (2021). Data on frequency of infections from the Robert Koch-Institute (RKI, 2021a).

S2. Sample description

	Wave 1 (June 2020)	Wave 2 (Sept. 2020)	Wave 3 (Febr. 2021)
Sample size <i>n</i>	1110	1109	1105
Age: median (IQR)			
Age (in years)	46 (32–57)	45 (32–57)	45 (31–57)
Gender: <i>n</i> (%)			
Male	553 (50)	552 (50)	551 (50)
Female	557 (50)	557 (50)	554 (50)
Highest educational qualification: <i>n</i> (%)			
None	0 (0)	0 (0)	0 (0)
Vocational track (<i>Hauptschulabschluss</i>)	149 (14)	66 (6)	70 (6)
Intermediate track (<i>Realschulabschluss</i>)	201 (18)	201 (18)	226 (21)
Academic track (<i>Abitur</i>)	187 (17)	202 (18)	213 (19)
Apprenticeship in dual system	298 (27)	287 (26)	290 (26)
University degree	260 (23)	334 (30)	285 (26)
Doctorate	9 (1)	17 (2)	17 (2)

Table S2a. Demographic characteristics of the sample: Age, gender, education. IQR = interquartile range.

	Wave 1 (June 2020)	Wave 2 (Sept. 2020)	Wave 3 (Febr. 2021)
Federal State: <i>n</i> (%)			
North Rhine-Westphalia	245 (22)	242 (22)	244 (22)
Bavaria	180 (16)	180 (16)	178 (16)
Baden-Württemberg	143 (13)	138 (12)	141 (13)
Lower Saxony	111 (10)	116 (11)	110 (10)
Hesse	78 (7)	77 (7)	78 (7)
Saxony	56 (5)	57 (5)	54 (5)
Rhineland-Palatinate	55 (5)	56 (5)	55 (5)
Berlin	42 (4)	44 (4)	44 (4)
Thuringia	35 (3)	35 (3)	35 (3)
Schleswig-Holstein	33 (3)	33 (3)	33 (3)
Saxony-Anhalt	33 (3)	34 (3)	33 (3)
Brandenburg	33 (3)	33 (3)	33 (3)
Mecklenburg-West Pomerania	22 (2)	20 (2)	22 (2)
Hamburg	22 (2)	22 (2)	22 (2)
Saarland	11 (1)	11 (1)	13 (1)
Bremen	11 (1)	11 (1)	10 (1)

Table S2b. Demographic characteristics of the sample (cont'd): Proportion of respondents per federal state.

S3. Measures

The order of questions below follows the structure of the article rather than the survey itself. A set of pdf documents containing the full set of survey questions in the order they were presented is posted on the OSF (<https://osf.io/hz9yq/>).

--- **GERMAN** ---

Perceptions of misinformation.

1. Wie häufig stoßen Sie derzeit auf Nachrichten oder Informationen rund um das Coronavirus, von denen Sie glauben, es sind Fehlinformationen oder Falschdarstellungen der aktuellen Situation? [Mehrere Male am Tag, Jeden oder fast jeden Tag, Mehrere Male pro Woche, Einmal pro Woche, Mehrere Male im Monat, Selten, Nie]

2. Worum geht es bei falschen oder irreführenden Informationen rund um das Coronavirus Ihrer Erfahrung nach normalerweise? Wählen Sie alles Zutreffende aus.

All three Waves:

- Statistiken (z. B. Anzahl der infizierten Fälle)
- Fortschritt medizinischer Behandlungs- und Testmethoden
- Wieso und wie die Pandemie aufgetreten ist
- Neue wissenschaftliche Erkenntnisse rund um das Coronavirus
- Symptome einer Infektion mit dem Coronavirus
- Gesundheitliche Folgen einer Infektion mit dem Coronavirus
- Änderungen öffentlich geltender Regeln aufgrund des Coronavirus
- Individuelle Geschichten von Betroffenen (z. B. Ärzt*Innen, Erkrankten)
- Mögliche Auswirkungen auf das Gesundheitssystem
- Mögliche Auswirkungen auf das psychische Wohlbefinden
- Mögliche Auswirkungen auf Arbeitsplätze, die Wirtschaft, die Börse
- Mögliche Auswirkungen auf das Bildungssystem
- Mögliche Auswirkungen auf das Klima/die Umwelt
- Sicherheit der Grundversorgung (z. B. Lebensmittel, Medikamente)
- Tipps zur Erhaltung psychischer und körperlicher Gesundheit
- Verhaltensratschläge (z. B. wie man eine Infektion vermeidet)
- Vorräte, die man auf Lager haben sollte (z. B. Medikamente)
- Rechtsauskunft (z. B. Rechte bezüglich abgesagter Veranstaltungen)
- Finanzielle Auskünfte (z. B. Beantragung von Staatshilfe)
- Keines der oben genannten Themen

Waves 2 and 3 only:

- Fortschritte in der Impfstoffentwicklung
- Erfolge und Prognosen bei der Eindämmung der Epidemie
- Verhalten und Akzeptanz der Bevölkerung
- Reisewarnungen und Risikogebiete
- Regionale Unterschiede in Infektionszahlen
- Corona- und Antikörpertests (z. B. Selbsttests für Zuhause)
- Internationaler Umgang mit der Pandemie
- Möglichkeit einer wiederholten Infektion
- Mögliche Auswirkungen auf das gesellschaftliche Zusammenleben
- Langzeitfolgen/Folgeschäden einer Infektion mit dem Coronavirus
- Notwendige persönliche Vorkehrungen im Falle einer dritten Infektionswelle (z. B. Empfehlungen einer Gripeschutzimpfung)
- Risikogruppen
- Risikofaktoren für eine Infektion (z. B. wo und wie man sich leichter infiziert)
- Richtiges Verhalten bei einem Risikokontakt zu einer infizierten Person

Wave 3 only:

- Risiken und Nebenwirkungen der zugelassenen Corona-Impfstoffe
- Wirksamkeit und Nutzen der zugelassenen Corona-Impfstoffe
- Impfstrategie (welche Gruppen können sich wann impfen lassen)
- Mögliche Lockerungen der Einschränkungen für Geimpfte (z. B. bei Flügen, Theaterbesuchen etc.)
- Andere:
- Weder eins der genannten Themen noch andere.

3. Welche der folgenden Institutionen und Individuen verbreiten Ihrer Erfahrung nach falsche und irreführende Informationen rund um das Coronavirus? Wählen Sie alles Zutreffende aus.

- Öffentlich-rechtliches Fernsehen (z. B. ARD/ZDF/WDR/NDR)
- Privatfernsehen (z. B. RTL, Pro7, SAT1)
- Regionale Zeitungen (z. B. Darmstädter Echo, Münchner Merkur, Berliner Zeitung)
- Überregionale Zeitungen (z. B. TAZ, Süddeutsche, Frankfurter Allgemeine, DIE ZEIT)
- Boulevardzeitungen (z. B. BILD, BZ, Berliner Kurier)
- Quellen der Bundes- und Landesregierung (z. B. die Website der Bundesregierung)
- Radiosender (z. B. WDR4, Antenne Bayern, NRJ)
- Soziale Medien (z. B. Facebook, Instagram, News Feeds)
- Globale Gesundheitsorganisationen (z. B. die Weltgesundheitsorganisation)
- Nationale Gesundheitsbehörden (z. B. Gesundheitsämter)
- Wissenschaftliche Institute (z. B. das Robert Koch-Institut)
- Lokalnachrichten/ lokale Nachrichtenportale (z. B. die Website des Wohnortes)
- Podcasts
- Freund*Innen und Familie (auch über Telefon, soziale Medien, WhatsApp)
- Nachbar*Innen (auch über Telefon, soziale Medien, WhatsApp)
- Kolleg*Innen (auch über Telefon, soziale Medien, WhatsApp)

(List was different in Wave 1; analyses based on Waves 2 & 3)

Perceived competence in detecting misinformation.

4. Wie zuversichtlich sind Sie, dass Sie falsche und irreführende Informationen rund um das Coronavirus erkennen können? [not confident at all, not very confident, somewhat confident, very confident]

5. Was tun Sie normalerweise, wenn Sie sich unsicher sind, ob Nachrichten oder Informationen rund um das Coronavirus wahr oder falsch sind? Wählen Sie alles Zutreffende aus.

- Ich überprüfe die Behauptungen in Suchmaschinen oder auf dafür ausgelegten Webseiten.
- Ich überprüfe die Quelle/ Autor*Innen in Suchmaschinen oder auf dafür ausgelegten Webseiten.
- Ich frage Personen aus meinem sozialen Umfeld.
- Ich ignoriere die Informationen.
- Ich teile oder nutze die Informationen, wenn es positive Nachrichten sind.
- Ich teile oder nutze die Informationen, wenn sie nützlich sein könnten.
- Andere:

6. Woran erkennen Sie, dass eine Information falsch oder irreführend sein könnte? Wählen Sie alles Zutreffende aus. **This item was not assessed in Wave 1.**

- Informationen passen nicht zu anderen Quellen.
- Die Quelle ist nicht renommiert.
- Die Quelle ist mir nicht bekannt.
- Die Quelle ist befangen/verfolgt Eigeninteresse.
- Die Quelle ist unglaubwürdig.
- Es werden keine nachvollziehbaren Belege benannt.
- Die Ausdrucksweise ist unangemessen, übertrieben, emotional und/ oder einseitig.
- Die Überschrift ist reißerisch ("Clickbait").

- Die Information ist durch unabhängige Faktenchecker als unverlässlich gekennzeichnet.

Belief in misinformation.

7. Es wird oft diskutiert, ob die Bevölkerung bei wichtigen Themen über die ganze Wahrheit informiert wird. Bitte geben Sie für jede der folgenden Aussagen rund um das Coronavirus an, inwieweit Sie persönlich glauben, dass die Aussage wahr oder falsch ist. [zweifelloos falsch, wahrscheinlich falsch, weiss nicht, wahrscheinlich wahr, zweifelloos wahr]

- SARS-CoV-2 ist ein neues Coronavirus, das Anfang 2020 als Auslöser der COVID-19 Erkrankung identifiziert wurde.
- Das Coronavirus SARS-CoV-2 wurde in einem Labor erzeugt und absichtlich freigesetzt, um geopolitische oder wirtschaftliche Ziele zu erreichen.
- Es gibt keinen Zusammenhang zwischen 5G und der Ausbreitung des Coronavirus SARS-CoV-2.
- Die Schwere der Erkrankung bei einer Infektion mit dem Coronavirus SARS-CoV-2 wird übertrieben dargestellt. Die tatsächliche Gefahr ist nicht höher als die einer saisonalen Grippe.
- Das Tragen von Masken (Mund-Nasenschutz) schützt weder sich selbst noch andere vor einer Infektion mit dem neuartigen Coronavirus SARS-CoV-2.
- Das Coronavirus SARS-CoV-2 existiert nachweisbar.
- Alle vermeintlichen Coronatoten sind an anderen Ursachen verstorben..
- Die Regierung übertreibt den Ernst der Situation, um von anderen Problemen innerhalb Deutschlands abzulenken.
- Das Coronavirus SARS-CoV-2 wurde von Pharmaunternehmen erzeugt, um von der Notwendigkeit eines Gegenmittels zu profitieren.
- Durch den Coronavirus SARS-CoV-2-Impfstoff wird man gentechnisch manipuliert.
- Hohe Infektionszahlen sind nicht durch die Falsch-Positiv-Rate der PCR-Tests zu erklären. **(Wave 2 only)**
- Es gibt bereits Impfstoffe und Heilmittel gegen das Coronavirus. Diese werden absichtlich vor der Allgemeinbevölkerung zurückgehalten. **(Wave 2 only)**
- Eine Corona-Impfung kann bei gebärfähigen Frauen zur Unfruchtbarkeit führen. **(Wave 3 only)**
- Die EU hat Impfstoffe zugelassen, obwohl diese gefährlich für die Gesundheit der Menschen sind. **(Wave 3 only)**

Agreement with measures & role of the state.

8. Wie beurteilen Sie die bisherigen offiziellen Verordnungen und ergriffenen Maßnahmen, die dazu dienen, die Ausbreitung und die Ansteckung mit dem Coronavirus in Deutschland zu verhindern? (z. B. das Kontaktverbot oder die Schließung von Läden, Schulen und Kitas) [voll und ganz unangemessen, eher unangemessen, eher angemessen, voll und ganz angemessen]

9. Wie sehr stimmen Sie den folgenden Aussagen zur Rolle des Staates zu? [stimme überhaupt nicht zu, stimme eher nicht zu, weder noch, stimme eher zu, stimme voll und ganz zu]

- Der Staat darf persönliche Freiheitsrechte zugunsten des Allgemeinwohls einschränken.
- Der Staat darf in einer (humanitären) Ausnahmesituation soziale, politische und wirtschaftliche Beschränkungen durchsetzen, um das Allgemeinwohl sicherzustellen.
- Der Staat darf in einer (humanitären) Ausnahmesituation die Bewegungsfreiheit seiner Bürger*innen beschränken.

Trust.

10. Vertrauen Sie den folgenden Personengruppen oder Institutionen im Umgang mit dem Coronavirus? [Vollstes Vertrauen, Eher hohes Vertrauen, Teils/teils, Eher niedriges Vertrauen, Gar kein Vertrauen]

- Wissenschaftler*Innen
- Der Bundesregierung
- Dem Robert Koch-Institut
- Dem Bundesministerium für Gesundheit

- Ärzt*Innen
- Der Landesregierung
- Den Gesundheitsämtern

Sources.

11. Wie lange haben Sie pro Tag in der letzten Woche im Durchschnitt die folgenden Quellen herangezogen, um Informationen rund um das Coronavirus zu beziehen? Die Internetseiten der verschiedenen Quellen sind hierbei inbegriffen. [Gar nicht, Weniger als 10 Minuten pro Tag, 10-30 Minuten pro Tag, 31-60 Minuten pro Tag, 1-2 Stunden pro Tag, mehr als 2 Stunden pro Tag]

- Öffentlich-rechtliches Fernsehen (z. B. ARD/ZDF/WDR/NDR)
- Privatfernsehen (z. B. RTL, Pro7, SAT1)
- Regionale Zeitungen (z. B. Darmstädter Echo, Münchner Merkur, Berliner Zeitung)
- Überregionale Zeitungen (z. B. TAZ, Süddeutsche, Frankfurter Allgemeine, DIE ZEIT)
- Boulevardzeitungen (z. B. BILD, BZ, Berliner Kurier)
- Quellen der Bundes- und Landesregierung (z. B. die Website der Bundesregierung)
- Radiosender (z. B. WDR4, Antenne Bayern, NRJ)
- Soziale Medien (z. B. Facebook, Instagram, News Feeds)
- Globale Gesundheitsorganisationen (z. B. die Weltgesundheitsorganisation)
- Nationale Gesundheitsbehörden (z. B. Gesundheitsämter)
- Wissenschaftliche Institute (z. B. das Robert Koch-Institut)
- Lokalnachrichten/ lokale Nachrichtenportale (z. B. die Website des Wohnortes)
- Podcasts
- Freund*Innen und Familie (auch über Telefon, soziale Medien, WhatsApp)
- Nachbar*Innen (auch über Telefon, soziale Medien, WhatsApp)
- Kolleg*Innen (auch über Telefon, soziale Medien, WhatsApp)
- Alternative Quellen (e.g., Webseiten unabhängiger Organisationen) **[not collected in Wave 1]**

Perceived & actual risk.

12. *Infection (self)*. Haben Sie sich mit dem neuartigen Coronavirus infiziert?

- Ja, bestätigt.
- Ja, aber (noch) nicht bestätigt.
- Ja, aber bereits überstanden.
- Nein, glaube nicht.
- Nein, bestätigt.
- Weiß nicht.

13. *Cases (social circle)*. Welche der Aussagen treffen auf Infektionen mit dem Coronavirus in Ihrem persönlichen Umfeld zu? (Mehrfachnennungen möglich)

- Es gibt ungetestete Verdachtsfälle.
- Es gibt bestätigte Fälle aktuell infizierter Personen.
- Es gibt genesene Personen.
- Es gibt verstorbene Personen.
- Es gibt Personen, die stationär in ein Krankenhaus aufgenommen wurden.
- Es gibt Personen, die schon geimpft wurden.
- Es gibt keine der oben genannten Fälle.

14. Gehören Sie zu einer Risikogruppe für einen schweren Krankheitsverlauf bei Infektion mit dem Coronavirus? Zur Risikogruppe gehören ältere Menschen ab 50 Jahren, Menschen mit Grunderkrankungen wie z.B. Herz-Kreislauf-Erkrankungen, Diabetes, Erkrankungen des Atmungssystems, der Leber, der Niere, Krebserkrankungen oder Übergewicht sowie Menschen mit unterdrücktem Immunsystem. [ja/nein]

15. Kennen Sie persönlich jemanden, der zu einer Risikogruppe für einen schweren Krankheitsverlauf bei einer Infektion mit dem Coronavirus gehört? [ja/nein]

Demographics.

16. Age (numeric, from panel provider)

17. Gender (from panel provider)

18. Income. Wie hoch ist Ihr monatliches Haushaltsnettoeinkommen?

[unter 1.000€, 1.000€ - 1.999€, 2.000€ - 2.999€, 3.000€ - 3.999€, 4.000€ - 4.999€, 5.000€ - 5.999€, über 6.000€, Ich bevorzuge, nicht zu antworten]

19. Education. Wie lautet der höchste von Ihnen erreichte Bildungsabschluss? [ohne Schulabschluss, Hauptschulabschluss, Volksschulabschluss oder vergleichbar, Realschulabschluss oder vergleichbar, Fachhochschul- oder Hochschulreife, Lehre / Berufsausbildung im dualen System, Hochschulabschluss, Promotion]

20. Haushaltsgröße. Wie viele Personen leben zurzeit (inklusive Ihnen) in Ihrem Haushalt?

21. Postcode. Wie lauten die ersten 4 Stellen Ihrer Postleitzahl? (freiwillig)

22. Migration background. Haben Sie einen Migrationshintergrund (Sind Sie und/oder Ihre Eltern aus einem anderen Land nach Deutschland zugewandert)? (optional)

- Ich habe keinen Migrationshintergrund.

- Ich bin in Deutschland geboren, aber mindestens ein Elternteil stammt aus dem Ausland.

- Ich bin selbst im Ausland geboren.

23. Die Begriffe "links" und "rechts" werden oft verwendet, wenn es darum geht, unterschiedliche politische Einstellungen zu kennzeichnen. Wenn Sie an Ihre eigenen politischen Ansichten denken, wo würden Sie diese Ansichten auf dieser Skala einstufen? [7-Punkt-Skala mit den Endpunkten links, rechts]

24. Wenn am nächsten Sonntag Bundestagswahl wäre, welche Partei würden Sie wählen?

- CDU/CSU

- SPD

- Bündnis 90/ Die Grünen

- FDP

- AfD

- LINKE

- Sonstige

- Ich weiß nicht, wen/ ob ich wählen würde.

- Ich würde nicht wählen.

- Ich darf nicht wählen.

- Ich möchte keine Angabe machen.

--- ENGLISH TRANSLATION ---

Perceptions of misinformation.

1. How often do you currently come across information on the coronavirus that you think is false or misleading? [several times a day, every day or almost every day, several times a week, once a week, several times a month, rarely, never]

2. In your experience, which topics does false or misleading information on the coronavirus typically concern? Select all that apply.

All three waves | Brief label used in Table. 2

- Statistics (e.g., number of infections) | Statistics
- Progress in treatments and testing | Treatments
- Why and how the pandemic occurred | Origins of pandemic
- New scientific findings about the coronavirus | Scientific findings
- Symptoms of coronavirus infection | Symptoms
- Health impact of infection with the coronavirus | Health impact
- Changes to public measures to contain the virus | Rules
- Individual stories (e.g., of doctors, people affected by the virus) | Personal stories

- Potential effects on the healthcare system | Health system impact
- Potential effects on psychological wellbeing | Mental health impact
- Potential effects on jobs, the economy, the stock market | Economic impact
- Potential effects on the educational system | Education system impact
- Potential effects on the climate/environment | Climate impact
- Security of basic services (e.g., food supply, medication) | Basic services
- Tips for mental and physical health | Health advice
- Behavioural advice (e.g., how to avoid an infection) | Behavioural advice
- Advice on basic supplies to have at home (e.g., medication) | Basic supplies
- Legal advice (e.g., on cancelled events) | Legal advice
- Financial advice (e.g., on accessing state financial support) | Financial advice
- None of the above | None

Waves 2 & 3 only:

- Progress in vaccine development | Vaccine development
- Successes and forecasts on containment of the virus | Forecasts end of pandemic
- Public behaviour and acceptance of measures | Citizen behaviours
- Travel warnings and risk areas | Travel warnings
- Regional differences in infection numbers | Regional differences
- Corona and antigen tests (e.g., rapid self-tests) | Tests
- International handling of the pandemic | International responses
- Possibility of reinfection | Reinfection
- Potential consequences for society | Society
- Long-term effects/complications of infection | Long Covid
- Behavioural advice for a potential third wave of infections (e.g., getting a flu shot) | New waves
- Risk groups | Risk groups
- Risk factors for infection (e.g., who is most likely to get infected, and how) | Risk factors
- Behaviour in case of contact with an infected person | Contact person

Wave 3 only:

- Risks and side effects of approved COVID-19 vaccines | Vaccination risks
- Effectiveness and benefits of approved COVID-19 vaccines | Vaccination benefits
- Vaccination strategy (prioritisation of groups) | Vaccination strategy
- Possible loosening of restrictions for vaccinated people (e.g., for travel, events) | Easing of restrictions
- Other | Other
- None of the above or any other topics | None

3. In your experience, which of the following institutions and individuals spread false and misleading information about the coronavirus? Select all that apply.

- Public-sector television (e.g., ARD/ZDF/WDR/NDR)
- Private-sector television (e.g., RTL, Pro7, SAT1)
- Regional newspapers (e.g., Darmstädter Echo, Münchner Merkur, Berliner Zeitung)
- National newspapers (e.g., TAZ, Süddeutsche, Frankfurter Allgemeine, DIE ZEIT)
- Tabloids (e.g., BILD, BZ, Berliner Kurier)
- Government sources (e.g., government websites)
- Radio stations (e.g., WDR4, Antenne Bayern, NRJ)
- Social media (e.g., Facebook, Instagram, news feeds)
- Global health organisations (e.g., the World Health Organization)
- National health authorities (e.g., local health agencies)
- Scientific institutions (e.g., the Robert Koch-Institute)
- Local news (e.g., website of the place of residence)

- Podcasts
- Friends and family (including by phone, social media, WhatsApp)
- Neighbours (including by phone, social media, WhatsApp)
- Colleagues (including by phone, social media, WhatsApp)

(List was different in Wave 1; analyses based on Waves 2 & 3)

Perceived competence in detecting misinformation.

4. How confident are you in your ability to detect false and misleading information on the coronavirus?
[very confident, somewhat confident, not very confident, not confident at all]

5. How can you tell that a piece of information could be false or misleading? Select all that apply. **This item was not assessed in Wave 1.**

- The information is not consistent with other sources.
- The source is not reputable.
- The source is unfamiliar to me.
- The source is biased/pursues its own interests.
- The source is not trustworthy.
- No plausible evidence is included.
- The language is inappropriate, exaggerated, emotional and/or one-sided.
- The headline is sensationalist ('clickbait').
- The information has been flagged as unreliable by fact checkers.

6. What do you usually do if you are uncertain whether news or information on the coronavirus is true or false? Select all that apply.

- I check the claim on search machines or fact-checking websites.
- I check the source/author on search machines or independent websites.
- I consult people in my social circle.
- I ignore the information.
- I share or use the information if the news is positive.
- I share or use the information if it could be useful.
- Other:

Belief in misinformation | Brief label used in Fig. S4 and S5.

7. There is much discussion of whether the public is fully informed about the truth on important topics. Please indicate for each of the following statements on the coronavirus whether you think it is true or false. [definitely false, probably false, don't know, probably true, definitely true]

- SARS-CoV-2 is a novel coronavirus identified in early 2020 that is responsible for COVID-19 infections. | SARS-CoV-2 is the novel virus *responsible for causing* COVID-19.
- SARS-CoV-2 is lab-made and was released deliberately to pursue geopolitical or economic aims. | SARS-CoV-2 is lab-made.
- There is no association between 5G and the spread of the coronavirus SARS-CoV-2. | The spread of SARS-CoV-2 is unrelated to 5G.
- The severity of an infection with the coronavirus SARS-CoV-2 is exaggerated. The real risk is no worse than the seasonal flu. | A SARS-CoV-2 infection is no worse than the flu.
- Wearing masks does not protect you or others against infection with the novel coronavirus SARS-CoV-2. | Masks do not protect against infections.
- There is proof that the coronavirus exists. | The coronavirus exists.
- All alleged "corona deaths" were actually due to other causes. | Corona deaths are due to other causes.
- The government is exaggerating the severity of the situation to distract from other problems in Germany. | The government is using coronavirus as a distraction.
- The coronavirus SARS-CoV-2 was created by pharmaceutical companies to profit from selling medications. | The coronavirus was created by pharmaceutical companies.
- The coronavirus SARS-CoV-2 vaccine is used to genetically manipulate people. | The vaccination

- genetically manipulates people.
- High rates of infection cannot be explained by the false-positive rates of PCR tests. | High infection rates are not due to false positive PCRs. **(Wave 2 only)**
- Vaccines and treatments against the coronavirus SARS-CoV-2 are already available. They are being purposefully withheld from the public. | Vaccines and treatments are purposefully withheld. **(Wave 2 only)**
- Vaccination against coronavirus SARS-CoV-2 can lead to infertility in women of childbearing age. | The vaccination can lead to infertility in women. **(Wave 3 only)**
- The EU has approved vaccines although they are dangerous to human health. | The EU has approved dangerous vaccines. **(Wave 3 only)**

Agreement with measures & role of the state.

8. *Agreement with measures.* What do you think of the official rules and measures to contain the spread of the virus in Germany (e.g., physical distancing, closing shops, schools and childcare facilities)? [fully inadequate; mostly inadequate; mostly adequate; fully adequate]

9. *Role of the state.* To what extent do you agree with the following statements about the role of the state? [fully disagree, somewhat disagree, neither agree nor disagree, somewhat agree, fully agree]

- a) The state can limit personal freedoms for the public good.
- b) The state can enforce social, political and economic restrictions to protect public welfare under exceptional (humanitarian) circumstances.
- c) The state can limit citizens' freedom of movement under exceptional (humanitarian) circumstances.

Trust.

10. Do you trust the following groups of people or institutions in dealing with the coronavirus? [full trust, fairly high trust, neutral, fairly low trust, no trust at all]

- a) Scientists
- b) Federal government
- c) The Robert Koch-Institute
- d) The Federal Ministry of Health
- e) Doctors
- f) Local government
- g) Local health authorities

Sources.

11. How long, per day, did you use the following sources (including their websites) to obtain information on the coronavirus in the last week? [not at all, less than 10 minutes/day, 31–60 minutes/day, 1–2 hours/day, more than 2 hours/day].

- Public-sector television (e.g., ARD/ZDF/WDR/NDR)
- Private-sector television (e.g., RTL, Pro7, SAT1)
- Regional newspapers (e.g., Darmstädter Echo, Münchner Merkur, Berliner Zeitung)
- National newspapers (e.g., TAZ, Süddeutsche, Frankfurter Allgemeine, DIE ZEIT)
- Tabloids (e.g., BILD, BZ, Berliner Kurier)
- Government sources (e.g., government websites)
- Radio stations (e.g., WDR4, Antenne Bayern, NRJ)
- Social media (e.g., Facebook, Instagram, news feeds)
- Global health organisations (e.g., the World Health Organization)
- National health authorities (e.g., local health agencies)
- Scientific institutions (e.g., the Robert Koch-Institute)
- Local news (e.g., website of the place of residence)
- Podcasts
- Friends and family (including by phone, social media, WhatsApp)
- Neighbours (including by phone, social media, WhatsApp)

- Colleagues (including by phone, social media, WhatsApp)
- Alternative sources (e.g., websites of independent organisations) **[not collected in Wave 1]**

Perceived & actual risk.

12. *Infection (self)*. Have you been infected with COVID-19? [yes—confirmed; yes—but not (yet) confirmed; yes—and I have recovered; no—I don't think so; no—confirmed; don't know]

13. *Cases (social circle)*. Which of the following statements applies to COVID-19 infections in your social circle? Select all that apply. I know of ... [untested suspected cases; confirmed cases; recovered cases; deaths; hospitalized cases; people who have been vaccinated; no cases].

14. *Risk group (self)*. Do you belong to a risk group for developing severe COVID-19? The risk group includes older people aged 50 years and above, people with pre-existing conditions such as heart conditions, diabetes, lung, liver or kidney disease cancer, obesity, or a weakened immune system) [yes, no]

15. *Risk group (social circle)*. Do you know anybody belonging to a risk group for developing severe COVID-19? [yes, no]

Demographics.

16. Age (numeric, from panel provider)

17. Gender (from panel provider)

18. Income. What is your household's monthly net income?

[less than €1000, €1000€ – €1999, €2000 – €2999, €3000 – €3999, €4000 – €4999, €5000 – €5999, more than €6000, prefer not to answer]

19. Education. What is your highest educational qualification? [none , vocational track (*Hauptschulabschluss*), intermediate track (*Realschulabschluss*), academic track (*Abitur*), apprenticeship in dual system, university degree, doctorate]

20. Household members. How many people, including you, live in your household?

21. Postcode. What are the first four digits of your postcode? (optional)

22. Migration background. Do you have a migration background (did you and/or your parents migrate to Germany)? (optional)

- I don't have a migration background.

- I was born in Germany, but at least one parent was born in another country.

- I was born outside Germany.

23. The terms "left" and "right" are often used when labelling political attitudes. When it comes to your own political attitudes, where would you locate yourself on this scale? [7-point Likert scale with endpoints left, right]

24. If federal elections were held next Sunday, which party would you vote for?

- CDU/CSU
- SPD
 - Bündnis 90/Die Grünen
 - FDP
 - AfD
 - LINKE
 - Other
- I don't know which party I would vote for, or whether I would vote at all.
- I would not vote.
- I am not allowed to vote.
- I would rather not say.

S4. Additional analyses: Perceived sources of misinformation

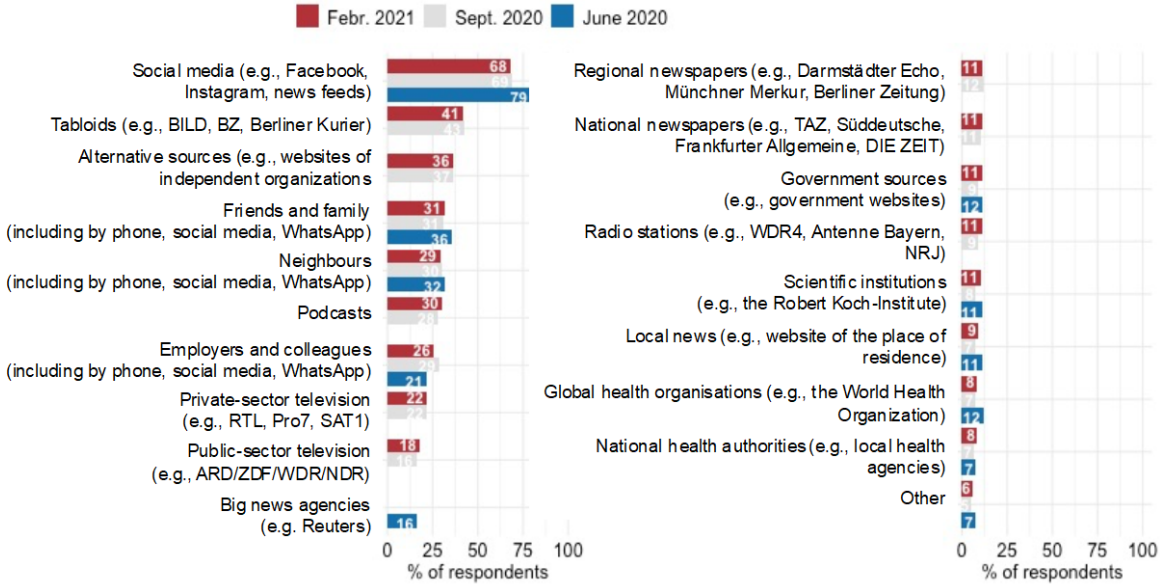


Figure S4. Perceived sources of misinformation ordered by proportion of responses. Data show similar perceptions across waves. Some response options were not available in all three waves (e.g., “Big news agencies” was a response option in Wave 1 only, and was later replaced by “Public-sector television”, “Private-sector television” and various newspaper types).

S5. Additional analyses: Misinformation statements

S5.1 Mean strength of belief by statement (Wave 2)

	Statement	<i>M</i>	HDI (lower)	HDI (upper)
1	SARS-CoV-2 is lab-made.	2.16	2.08	2.25
2	A SARS-CoV-2 infection is no worse than the flu.	2.13	2.04	2.21
3	SARS-CoV-2 is the novel virus responsible for causing COVID-19. (R)	2.00	1.92	2.09
4	Corona deaths are due to other causes.	1.98	1.90	2.06
5	The spread of SARS-CoV-2 is unrelated to 5G. (R)	1.98	1.90	2.07
6	The government is using coronavirus as a distraction.	1.98	1.90	2.06
7	Masks do not protect against infections.	1.83	1.75	1.91
8	The vaccination genetically manipulates people.	1.74	1.67	1.81
9	The coronavirus was created by pharmaceutical companies.	1.65	1.58	1.72
10	Vaccines and treatments are purposefully withheld.	1.61	1.55	1.68
11	The coronavirus exists. (R)	1.35	1.30	1.40

Table S5.1. Mean strength of belief by statement in Wave 2, measured on a 5-point Likert scale from definitely false (1) to definitely true (5); with random intercepts for respondents (1|respondent). Table shows marginal effects (means and 95% HDIs of the posterior distribution) from a Bayesian ordinal cumulative regression model (see Bürkner & Vuorre, 2018, for details). Beliefs with an '(R)' were true, and were reverse-coded so that higher values indicate higher belief in misinformation.

S5.2 Mean strength of belief by statement (Wave 3)

	Statement	<i>M</i>	HDI (lower)	HDI (upper)
1	The EU has approved dangerous vaccines.	2.10	2.01	2.19
2	SARS-CoV-2 is lab-made.	2.08	2.00	2.17
3	SARS-CoV-2 is the novel virus responsible for causing COVID-19. (R)	1.99	1.90	2.07
4	The spread of SARS-CoV-2 is unrelated to 5G. (R)	1.94	1.85	2.03
5	The government is using coronavirus as a distraction.	1.92	1.84	2.00
6	A SARS-CoV-2 infection is no worse than the flu.	1.86	1.78	1.94
7	Corona deaths are due to other causes.	1.86	1.78	1.94
8	Masks do not protect against infections.	1.85	1.77	1.94
9	The vaccination genetically manipulates people.	1.82	1.75	1.91
10	The coronavirus was created by pharmaceutical companies.	1.62	1.55	1.69
11	Vaccines and treatments are purposefully withheld.	1.60	1.54	1.67
12	The coronavirus exists. (R)	1.28	1.24	1.33

Table S5.2. Mean strength of belief by statement in Wave 2, measured on a 5-point Likert scale from definitely false (1) to definitely true (5); with random intercepts for respondents (1|respondent). Table shows marginal effects (means and 95% HDIs of the posterior distribution) from a Bayesian ordinal cumulative regression model (see Bürkner & Vuorre, 2018, for details). Beliefs with an '(R)' were true, and were reverse-coded so that higher values indicate higher belief in misinformation.

S.5.3 “Don’t know” responses by statement

Figure S5.4 shows the proportion of respondents who endorsed the response “don’t know” by wave and statement. For instance, roughly one in four respondents reported not knowing whether the vaccination genetically manipulates people (23%–25%), whether it was created in a lab (24%) or whether the EU has approved dangerous vaccines (23% in Wave 3). Fewer people said they “don’t know” whether masks protect against infections (12%–13%).

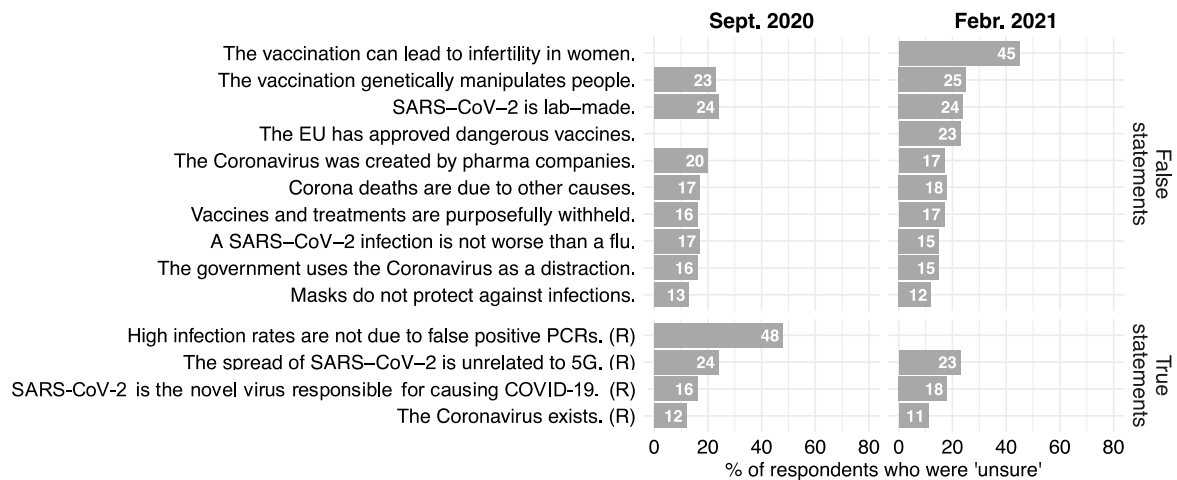


Figure S5.3. Proportion of respondents endorsing the response “don’t know” per statement. Empty rows indicate that a statement was not included in that Wave.

Not knowing whether a statement is true or false may come about for different reasons. First, the statements themselves may have been difficult to understand (e.g., our reverse-coded item “High infection rates are not due to false positive PCRs” seems to have been too complex; it assumes that people understand the meaning of “false positives”, “PCR tests” and the relationship to infection rates). Second, the response may reflect uncertainty in the world (e.g., the origins of the SARS-CoV-2 virus are still disputed). Third, false information spread intentionally may be gaining traction (e.g., on the alleged dangers of vaccination).

Irrespective of the reason for respondents not knowing, identifying claims that elicit uncertainty is important: It is here that people may be more open for false beliefs to be corrected or uncertainties to be reduced. Communications and corrections can thus be developed specifically around claims that elicit high uncertainty (e.g., because the information is complex), to people who are unsure.

S.5.3 Proportion of respondents believing each statement

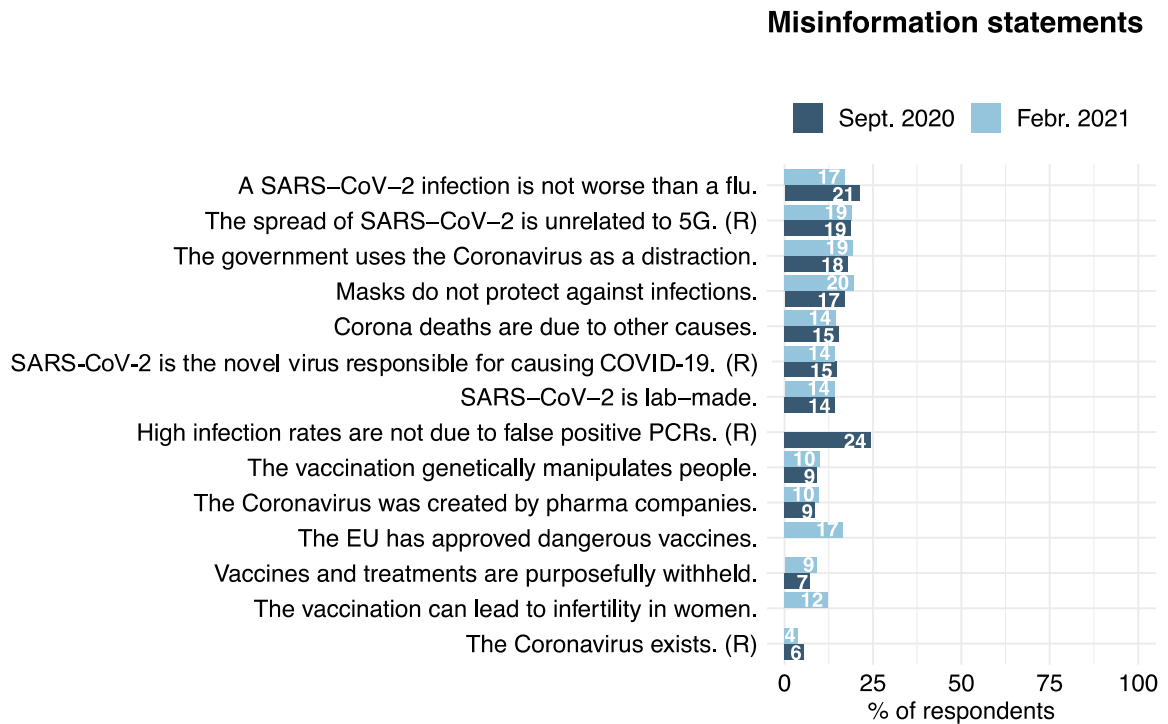


Figure S5.3. Proportion of respondents who believed each false statement to be probably or definitely true and each true statement (R) to be probably or definitely false, ordered from strongest to weakest beliefs. Figure uses dichotomized data.

S.5.5 Intercorrelations between misinformation beliefs

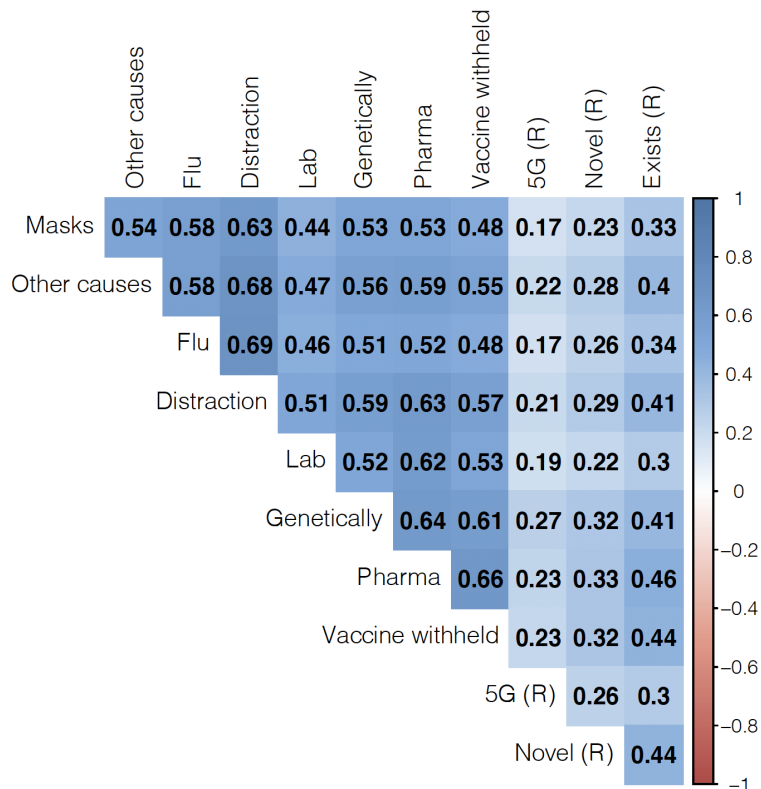


Figure S5.5. Intercorrelations between misinformation beliefs across waves. All correlations are significant, which is probably caused by the majority of respondents not believing in misinformation statements.

S6. Additional analyses: Individual differences, combined for Waves 2 & 3

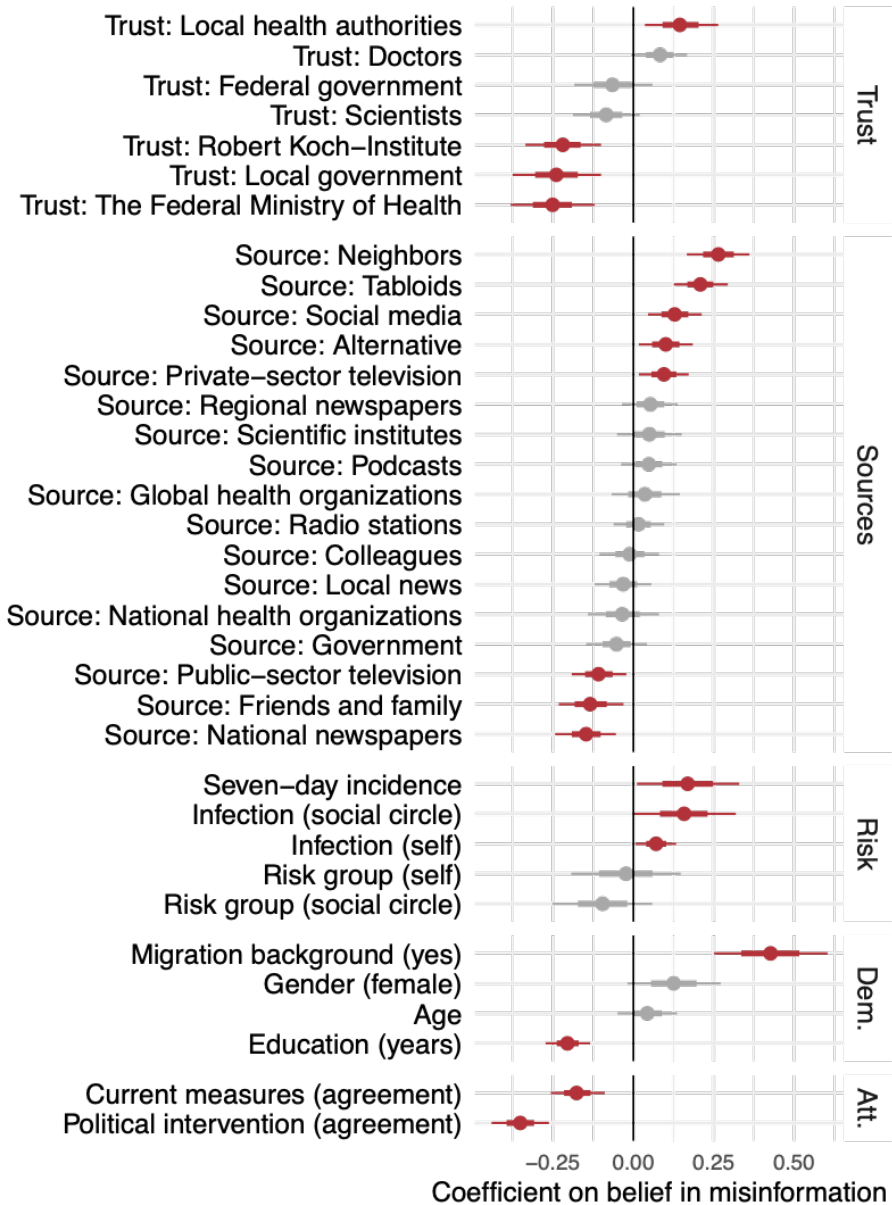


Figure S7. Regression analysis predicting individual differences in belief in misinformation across Waves 2 and 3. Dots and error bars represent means and 95% (50%) highest density intervals of the posterior predictive distribution. Dem. = demographic characteristics; Att. = attitudinal measures; Party = Political party respondent would vote for in an upcoming election. Credible associations are shown in red. Results of a multivariate binomial regression predicting belief in a statement from the covariates shown, controlling for individual respondents using a random intercept (1|respondent) and statement and Wave as fixed effects. Political leaning and the political party a respondent would vote for in an upcoming election were only assessed in Wave 3.

Predictor	Sept. 2020	Febr. 2021	Combined regression
	<i>M</i> [HDI]	<i>M</i> [HDI]	<i>M</i> [HDI]
Trust: Local government	-0.34 [-0.55, -0.14]	-0.28 [-0.45, -0.09]	-0.25 [-0.39, -0.13]
Trust: Fed. Ministry of Health	-0.18 [-0.39, 0.01]	-0.28 [-0.45, -0.11]	-0.24 [-0.38, -0.11]
Trust: Robert Koch-Institute	-0.17 [-0.35, 0.00]	-0.12 [-0.3, 0.07]	-0.22 [-0.34, -0.11]
Trust: Scientists	-0.05 [-0.2; 0.09]	-0.11 [-0.27, 0.06]	-0.08 [-0.19, 0.02]
Trust: Doctors	0.01 [-0.12, 0.15]	-0.09 [-0.23, 0.06]	-0.07 [-0.18, 0.06]
Trust: Federal government	0.03 [-0.15, 0.21]	0.14 [0.02, 0.26]	0.08 [-0.01, 0.17]
Trust: Local health authorities	0.10 [-0.08, 0.26]	0.16 [0.00, 0.32]	0.14 [0.03, 0.26]
Source: Public-sector TV	-0.12 [-0.26, 0.00]	-0.24 [-0.37, -0.11]	-0.15 [-0.24, -0.05]
Source: Government sources	-0.11 [-0.26, 0.03]	-0.2 [-0.33, -0.06]	-0.13 [-0.22, -0.03]
Source: National newspapers	-0.11 [-0.25, 0.03]	-0.15 [-0.29, 0.01]	-0.11 [-0.19, -0.02]
Source: Global health org.	-0.05 [-0.22, 0.11]	-0.08 [-0.2, 0.04]	-0.05 [-0.14, 0.04]
Source: Colleagues	-0.04 [-0.18, 0.09]	-0.04 [-0.16, 0.08]	-0.03 [-0.14, 0.08]
Source: Local news	-0.03 [-0.15, 0.10]	0.01 [-0.12, 0.14]	-0.03 [-0.12, 0.06]
Source: Regional newspapers	0.00 [-0.13, 0.13]	0.03 [-0.1, 0.15]	-0.01 [-0.1, 0.08]
Source: Radio stations	0.01 [-0.11, 0.12]	0.05 [-0.06, 0.16]	0.02 [-0.06, 0.10]
Source: Scientific institutions	0.01 [-0.14, 0.16]	0.06 [-0.06, 0.17]	0.04 [-0.07, 0.14]
Source: Friends and family	0.02 [-0.13, 0.16]	0.07 [-0.05, 0.17]	0.05 [-0.04, 0.13]
Source: Podcasts	0.04 [-0.09, 0.17]	0.09 [-0.03, 0.21]	0.05 [-0.05, 0.15]
Source: National health auth.	0.04 [-0.13, 0.2]	0.11 [-0.03, 0.24]	0.05 [-0.04, 0.14]
Source: Alternative sources	0.10 [-0.02, 0.23]	0.11 [-0.02, 0.22]	0.09 [0.02, 0.17]
Source: Private-sector TV	0.12 [0.02, 0.24]	0.11 [0.00, 0.23]	0.10 [0.02, 0.18]
Source: Tabloids	0.16 [0.03, 0.29]	0.12 [-0.02, 0.25]	0.13 [0.05, 0.22]
Source: Social media	0.17 [0.04, 0.29]	0.23 [0.11, 0.34]	0.21 [0.13, 0.30]
Source: Neighbours	0.24 [0.09, 0.39]	0.29 [0.15, 0.42]	0.26 [0.17, 0.36]
Risk group (social circle)	-0.23 [-0.46, -0.01]	0.04 [-0.19, 0.26]	-0.01 [-0.25, 0.06]
Risk group (self)	-0.09 [-0.34, 0.15]	0.06 [-0.16, 0.27]	-0.02 [-0.19, 0.15]
Seven-day incidence	0.00 [-0.10, 0.10]	0.08 [-0.01, 0.17]	0.07 [0.01, 0.13]
Having been infected oneself	0.06 [-0.03, 0.15]	0.09 [0.01, 0.18]	0.16 [0.01, 0.33]
Knowing someone infected	0.17 [-0.06, 0.41]	0.19 [0.00, 0.42]	0.17 [0.01, 0.33]
Education (years)	-0.21 [-0.31, -0.11]	-0.19 [-0.28, -0.09]	-0.21 [-0.28, -0.14]
Gender (female)	0.09 [-0.12, 0.29]	-0.10 [-0.23, 0.04]	0.04 [-0.05, 0.14]
Age (years)	0.17 [0.03, 0.30]	0.17 [-0.02, 0.38]	0.13 [-0.02, 0.27]

Migration background (yes)	0.46 [0.19, 0.75]	0.40 [0.16, 0.65]	0.43 [0.25, 0.60]
Political interv. (agreement)	-0.32 [-0.45, -0.19]	-0.38 [-0.5, -0.25]	-0.35 [-0.44, -0.27]
Current measures (agreement)	-0.13 [-0.26, -0.01]	-0.21 [-0.33, -0.09]	-0.18 [-0.26, -0.09]
Political leaning (left <> right)	<i>NA</i>	0.08 [-0.02, 0.17]	<i>NA</i>
Party: Die Grünen	<i>NA</i>	-0.32 [-0.66, 0.00]	<i>NA</i>
Party: FDP	<i>NA</i>	-0.31 [-0.75, 0.11]	<i>NA</i>
Party: SPD	<i>NA</i>	-0.07 [-0.41, 0.31]	<i>NA</i>
Party: CDU/CSU	<i>NA</i>	-0.04 [-0.31, 0.27]	<i>NA</i>
Party: Die Linke	<i>NA</i>	0.17 [-0.25, 0.57]	<i>NA</i>
Party: AfD	<i>NA</i>	0.53 [0.19, 0.90]	<i>NA</i>

Table S7. Regression coefficients from a regression using Wave 2 only, Wave 3 data only and data from both Waves combined. We controlled for individual differences using a random intercept for respondent (1|respondent) and for specific misinformation statements using fixed effects.

S7. Correlations between misinformation beliefs and variables of interest

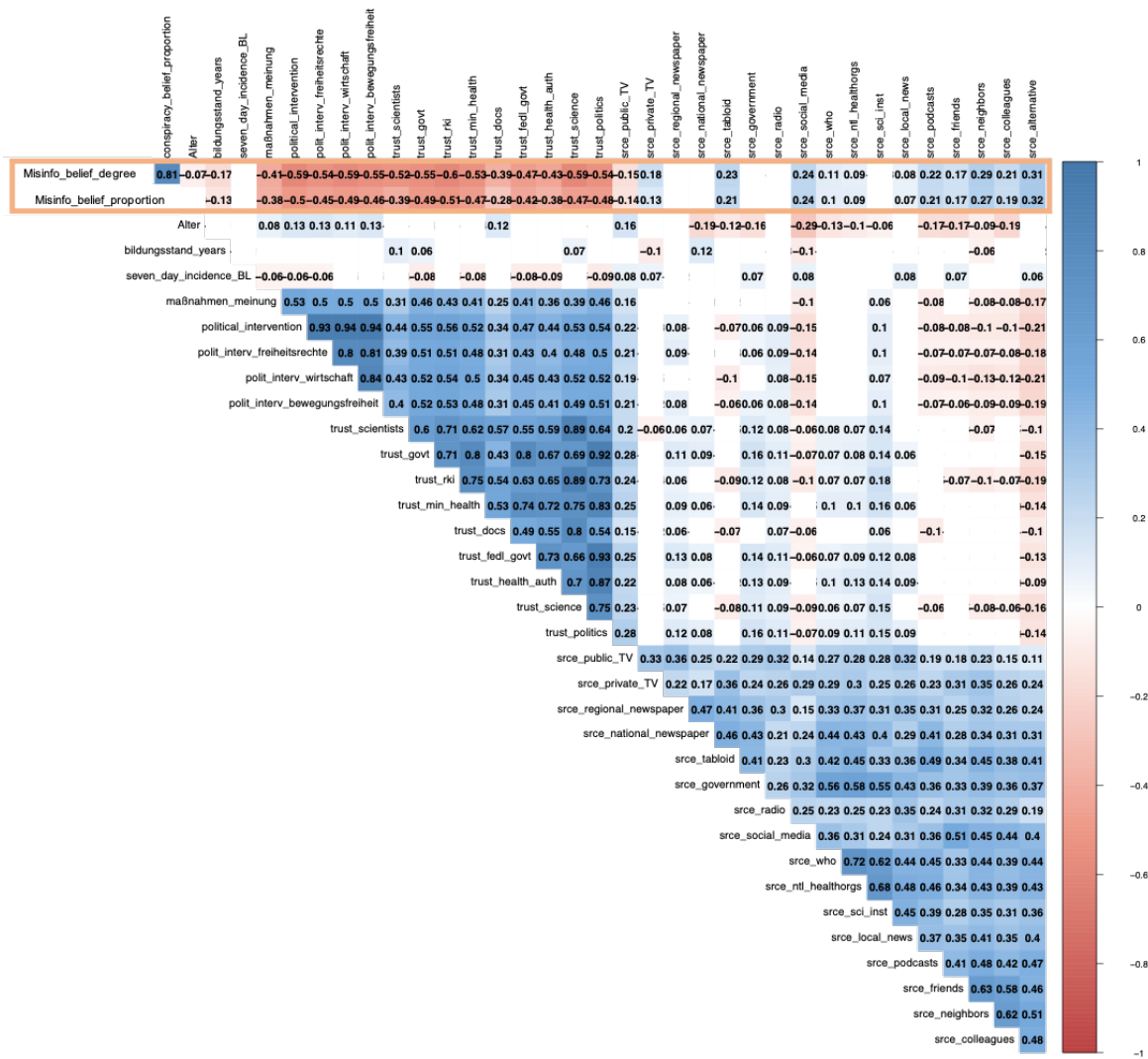


Figure S6. Correlations between misinformation beliefs and variables of interest (misinformation_belief_degree = average belief in misinformation statement on Likert scales; misinformation_belief_proportion = proportion of misinformation statements judged to be probably or definitely true). Nonsignificant correlations not shown. The Figure shows that results do not hinge on how misinformation belief was operationalized.