The effects and structure of disinformation on the population in connection with the COVID-19 pandemic in the Czech Republic

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Research Parameters

The study had two main goals: to investigate the information environment of Czech society and its influence on opinions about the Covid-19 epidemic and epidemiological policy. The survey was conducted on a sample representative of the Czech Internet population (18+) using the CAWI (computer-assisted web interview) method. Quota sampling (age, education, municipality size, standard of living) was used. The respondents were recruited through Czech National Panel and the data were collected by the STEM/MARK research agency. Data collection period lasted from 1 to 12 June, 2022 (N = 1002).

Table 1. Research Parameters

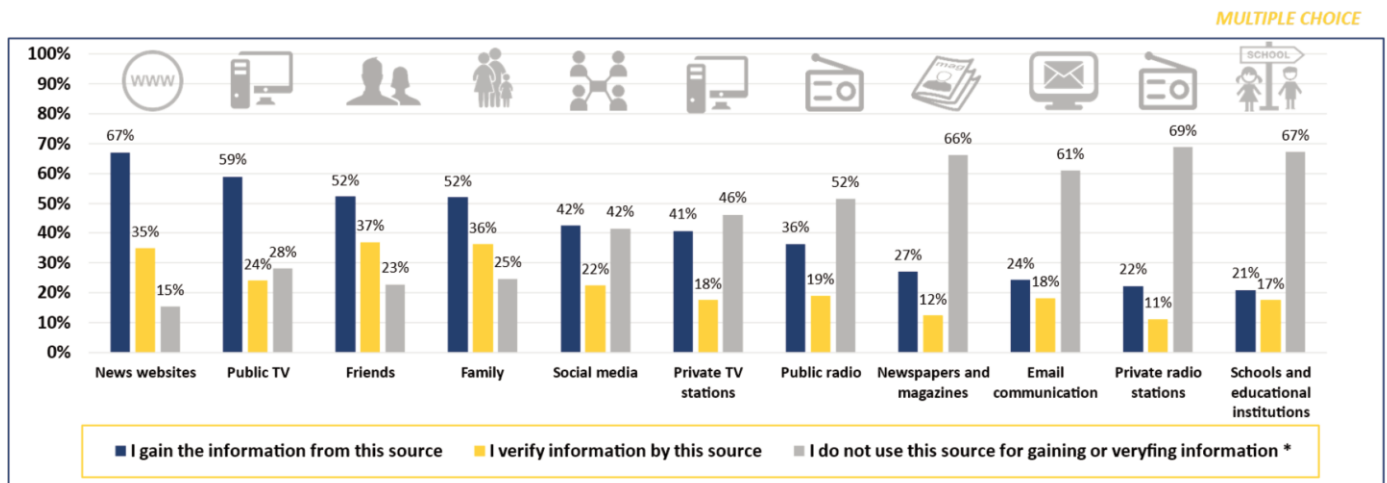| CZECH REPUBLIC		QUOTA	SIMPLE SELECTION	VEGHTED SELECTION
Gender	Man	50	50	50
	Woman	50	50	50
Age	18 - 29 years	18	18	18
	30 - 44 years	33	33	33
	45 - 59 years	29	29	29
	60 and more years	20	20	20
Education	Basic, without graduation	37	37	37
	High school with graduation	39	39	39
	University-educated	24	34	24
Municipality size	Less than 999 inhabitants	16	16	16
	1000 – 4999 inhabitants	22	23	22
	5000 – 19999 inhabitants	18	17	18
	20000 – 99999 inhabitants	21	20	21
	100 000 inhabitants	24	24	24
Standard of living	Good	20	25	20
	Not good, not poor	62	62	62
	Poor	18	10	18

Sources of gaining and verifying information

Czechs gain information mostly from news websites (67%), public TV (59%), friends (52%) and family (52%). Regarding the verifying information, the most popular are friends (37%), family (36%) and news websites (35%).

Regarding gaining information from news websites, this behaviour is amongst respondents between 30-44 years of age (72% in this age group). This age group also frequently gains information (93%) from the national public TV channel Česká televize (Czech TV). Also, a significant percentage (70%) of high-school graduates gain information from news websites. In contrast to the same percentage (70%) of university-educated respondents who use national public TV, Česká televize (Czech TV).

Regarding verifying information, there were no significant differences between socio-demographic groups. The younger generation (18–44) tend to verify information with friends more than the older generation (45+ years). More university graduates (40%) verify information with friends than do respondents with a lower-level education.

Chart 1. Sources of gaining and verifying information

MULTIPLE CHOICE

Legend:
- ■ I gain the information from this source
- ■ I verify information by this source
- ■ I do not use this source for gaining or veryfing information *
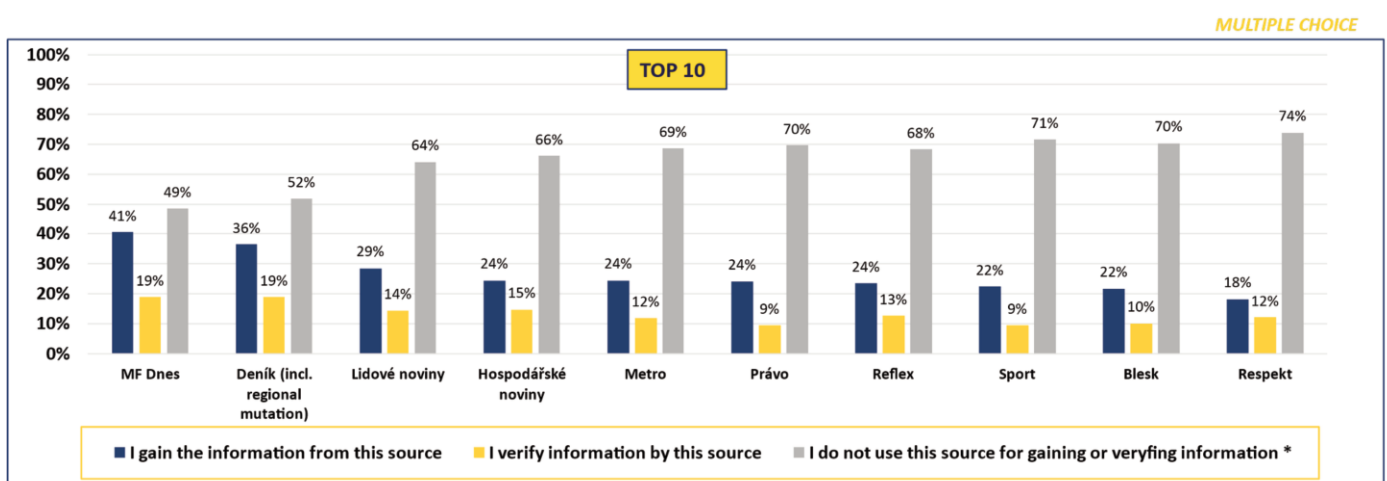
* = Unique option

N = Whole sample (1002 respondents)

The most popular newspapers and magazines in terms of gaining and verifying information are MF Dnes, Deník and Lidové noviny (all broadsheet daily newspapers).

MF Dnes, Lidové noviny and Metro are operated by the MAFRA group, which were previously owned by Agrofert Holding, and directed by former Czech prime minister Andrej Babiš. As PM, Babiš transferred ownership to two private trust funds to comply with conflict of interest laws. Metro is a free daily newspaper distributed worldwide.
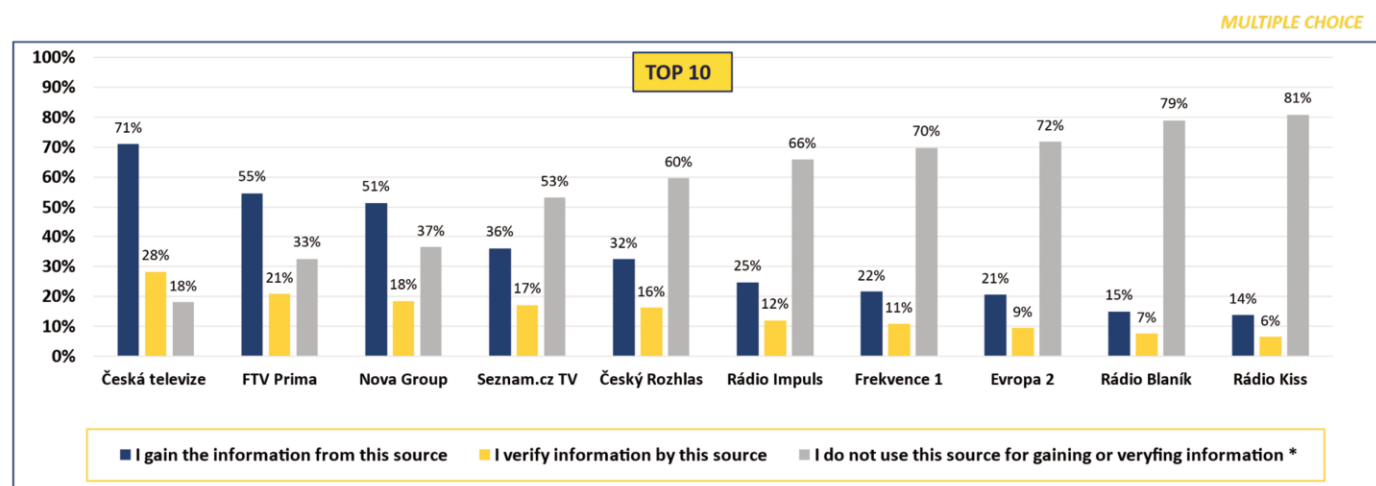
Chart 2. Sources of gaining and verifying information: Newspapers and magazines

MULTIPLE CHOICE

TOP 10

Legend:
- ■ I gain the information from this source
- ■ I verify information by this source
- ■ I do not use this source for gaining or veryfing information *

* = Unique option

N = Gain or verify information from newspapers and magazines (340 respondents)

The national public TV Česká televize (Czech TV) is the main source of information for respondents who use audiovisual media for these purposes. To verify information, these respondents often watch Česká televize (28%) or FTV Prima (21%). The research shows that Czechs prefer audiovisual media (TV channels) to "purely" audio (radio stations) for gaining and verifying information.

Chart 3. Sources of gaining and verifying information: Radio and television

MULTIPLE CHOICE

TOP 10

- I gain the information from this source
- I verify information by this source
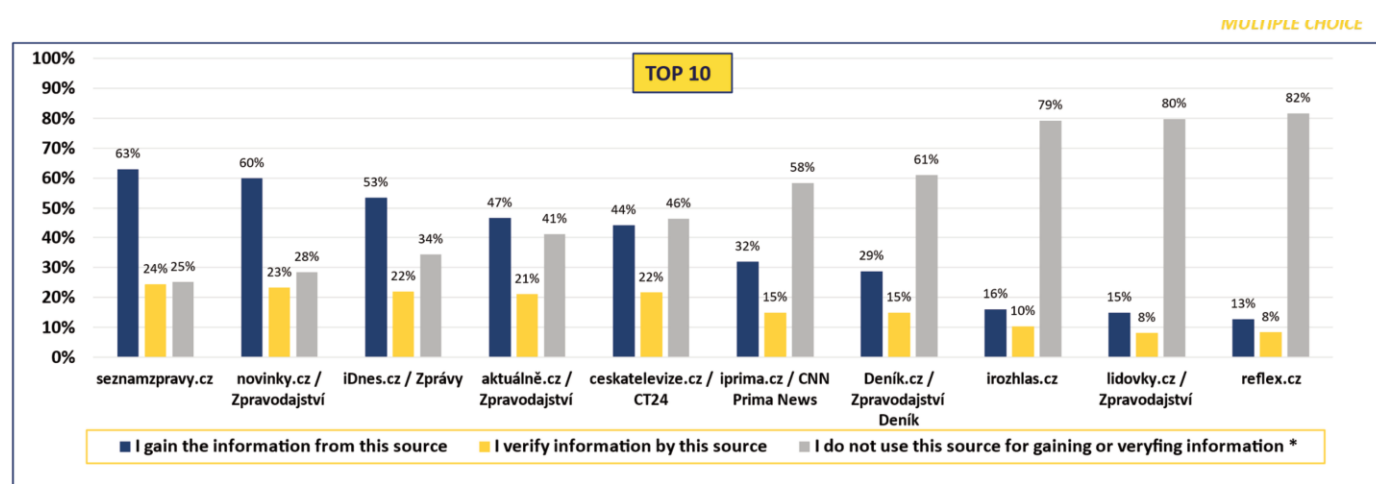- I do not use this source for gaining or veryfing information *

* = Unique option

N = Gain or verify information from thoses sources (vary due to each source)

Respondents using news websites for gaining and verifying information rely most on easy-to-access platforms. Almost two thirds (63%) of respondents gain their information from the news platform Seznam zprávy, closely followed by 60% from the news pages of the Novinky server.

**Chart 4. Sources of gaining and verifying information: News websites**

MULTIPLE CHOICE

TOP 10

- I gain the information from this source
- I verify information by this source
- I do not use this source for gaining or veryfing information *

* = Unique option

N = Gain or verify information from news websites (849 respondents)

4

If respondents gain or verify information on social media, they do so most often on Facebook (gaining 75%, verifying 23%). On the subject of verification, YouTube (27%) is even more commonly used, and is second as a social media source of information (54% of the sample gain information from this source).

Chart 5. Sources of gaining and verifying information: Social media
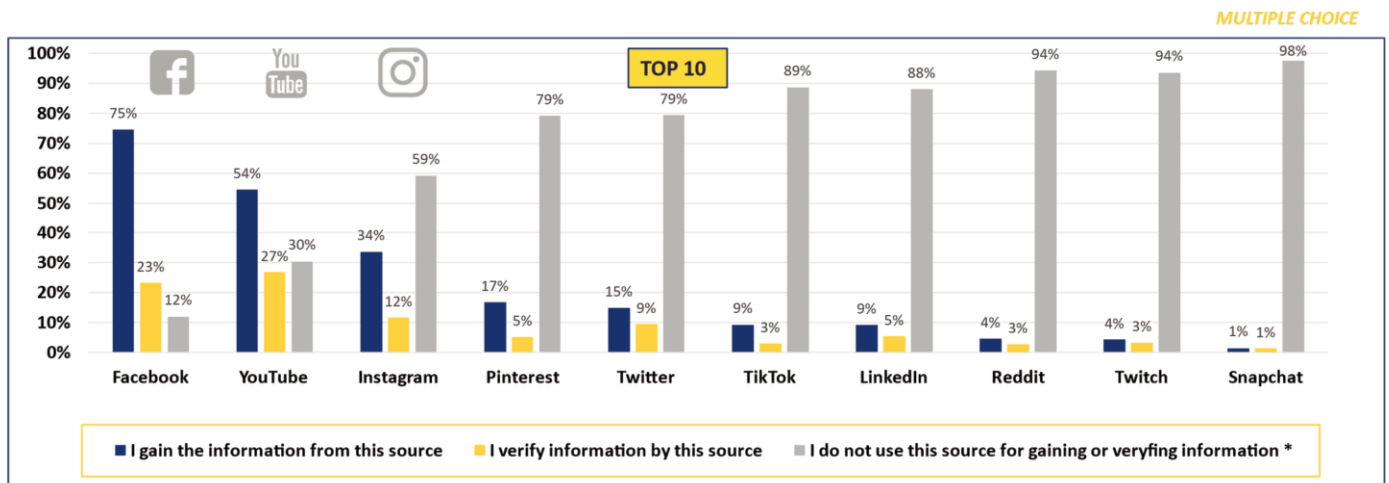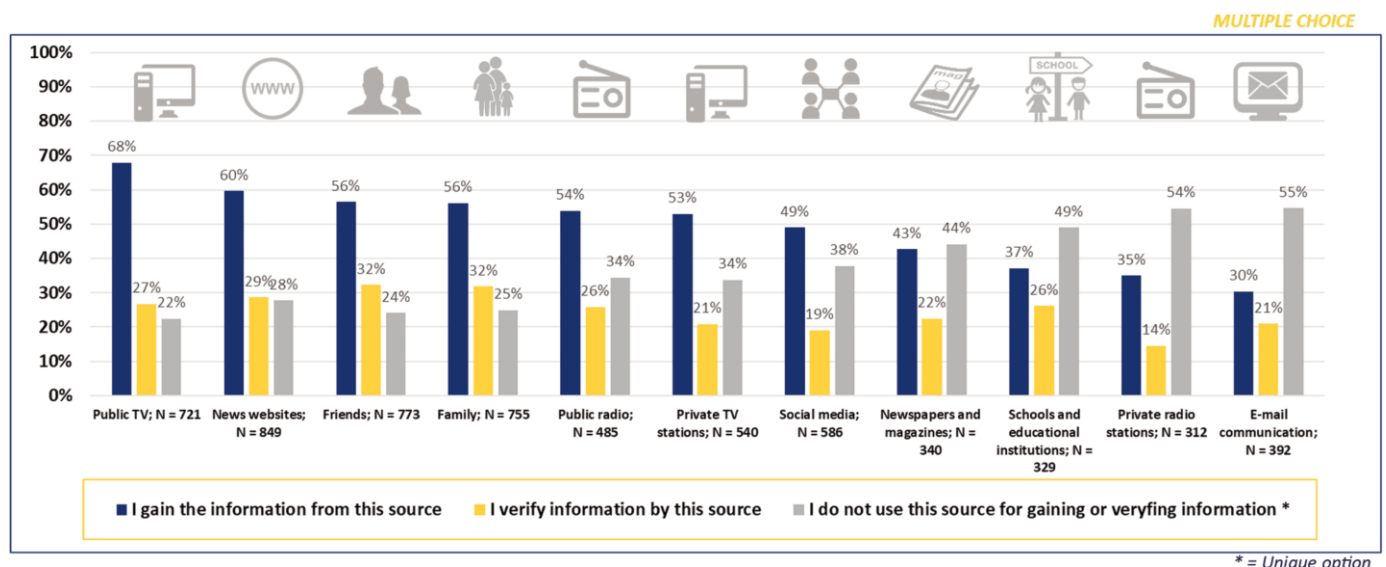

* = Unique option

N = Gain or verify information on social media (586 respondents)

In response to an open-ended question, the respondents often state that they gain and verify information from both foreign and Czech news media, such as the BBC, CNN, Deník N, or Reportér. They also use social media (Telegram, Vkontakte), general web sources, and print and audiovisual sources. The respondents also rely on friends, personal contacts, and common sense.

The respondents also mentioned alternative media, such as the website Parlamentní listy or the digital online audio channel Svobodné radio. These alternative sources can influence the public's acceptance of vaccine types. According to research published on infomore.cz (an interdisciplinary project aimed at reducing the "infodemic" in relation to COVID-19 that was supported by the Technology Agency of the Czech Republic), the disinformation website cz.sputniknews.com created a positive media image of Sputnik V and contributes to its approval in the Czech Republic.

The most common source of gaining information about COVID-19 vaccination amongst the Czech population is the national public TV channel, Česká televize (Czech TV). It is used for this purpose by 68% of respondents who use public TV for gaining or verifying information. This information are also commonly verified by family or friends (32%) who use it for gaining or verifying information.

Chart 6. Sources of gaining and verifying information about COVID-19 vaccination

The doctor or medical centre (hospital) are the most common sources of information from those not mentioned in the multiple-choice questions. This is logical, considering the nature of the information. The respondents also gain and verify information about COVID-19 at vaccination centres, on websites for medical topics (e.g. the webpage of the Ministry of Health), and various forums and discussion communities. People also discuss COVID-19 vaccination with family and friends, in person or virtually.

Some respondents trust the information provided by the alternative radio and TV channels, disinformation websites and "secret communities". A number of disinformation websites spread misinformation about COVID-19. According to infomore.cz, the topic of immigration has been replaced by COVID-19, when immigration dominated online discussions in the past.
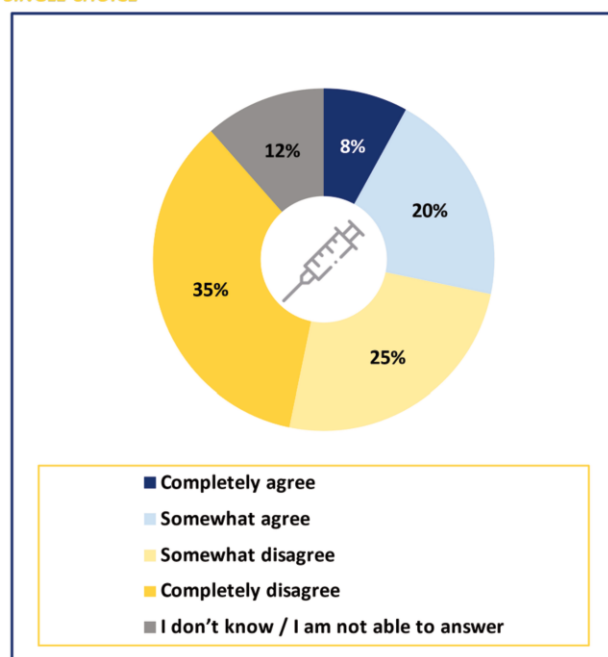
Opinions on Covid-19

More than half of the respondents (51%) completely or somewhat support COVID-19 vaccination. On the other hand, 28% of the sample is composed of determined opponents of COVID-19 vaccination. The same opinion is held by another 15% of people, who stated their position less strongly.

In their attitude to COVID-19 vaccination, women are more reserved than men. We also identify a higher percentage of women (42%) than men (15%) who completely disagree with the statement. More than 6 respondents in 10 from the 30-44 age group do not support COVID-19 vaccination (somewhat or completely disagreeing with the statement).

Chart 7. Do you agree with following statement: *"I support COVID-19 vaccination"*

SINGLE CHOICE

Legend:
- Completely agree
- Somewhat agree
- Somewhat disagree
- Completely disagree
- I don't know / I am not able to answer
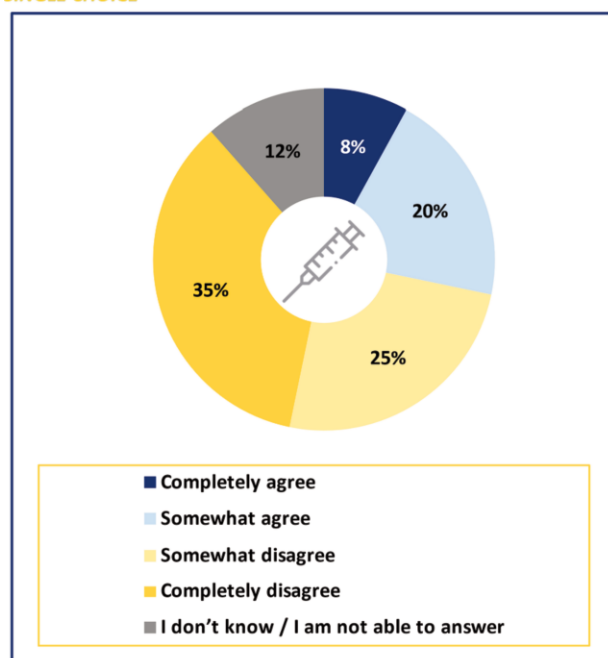
Chart values: 8%, 20%, 25%, 35%, 12%

N = Whole sample (1002 respondents)

People living in the bigger cities (with more inhabitants) tend to support COVID-19 vaccination, while respondents from small-sized municipalities are more reserved. The acceptance of COVID-19 vaccination also declines with the fall in the standard of living. More than one third of respondents with a very high standard of living somewhat- or fully-support vaccination, whereas only 16% of people with a very low standard of living state the same.

Chart 8. Do you agree with following statement: *"People should be vaccinated against COVID-19, no matter what type of vaccine"*

SINGLE CHOICE

Legend:
- Completely agree
- Somewhat agree
- Somewhat disagree
- Completely disagree
- I don't know / I am not able to answer

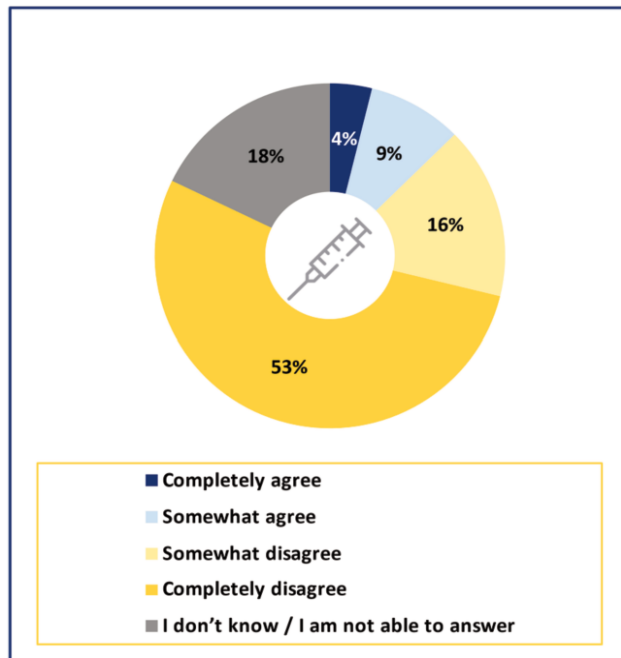Chart values: 8%, 20%, 25%, 35%, 12%

N = Whole sample (1002 respondents)

For the Czech respondents, the type of the vaccine really matter. Only 28% of them think (rather or completely) that the COVID-19 vaccination should be given to population without considering the type of the vaccine. More than one third of people (35%) completely disagree with the statement that people should be vaccinated against COVID-19, no matter what type of vaccine. Another one fourth of the sample share the same opinion, but do not express it that confidently (somewhat agree).

Women placed higher importance on the type of vaccine than men. Only 24% of women agree with the statement (somewhat or completely). In the case of male respondents, the percentage is higher (32%). There is also a higher ratio of strong supporters (completely agree) amongst men.

Central European
Digital Media
Observatory

Chart 9. Do you agree with following statement: *"If there is no other option, I would get vaccinated with the Sputnik vaccine"*

SINGLE CHOICE

- 4% Completely agree
- 9% Somewhat agree
- 16% Somewhat disagree
- 53% Completely disagree
- 18% I don't know / I am not able to answer

■ Completely agree
■ Somewhat agree
■ Somewhat disagree
■ Completely disagree
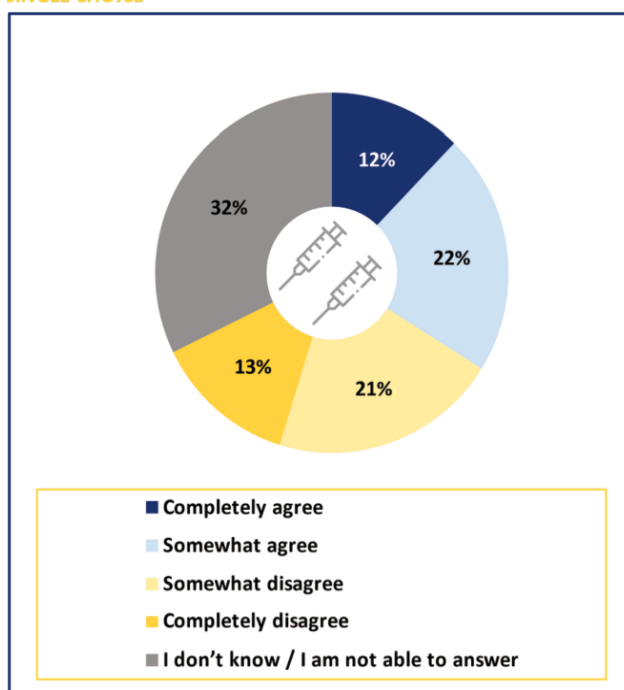■ I don't know / I am not able to answer

N = Whole sample (1002 respondents)

Over two thirds of respondents (69%) would not get vaccinated if the only possible vaccination type available were Sputnik. The possible acceptance (somewhat or completely agree) of the Sputnik vaccine is quite low (13%).

A higher possible acceptance of Sputnik is amongst the oldest generation (respondents aged 60 and above). One in five in this age group (22%) somewhat or completely disagree with the statement. Gender, level of education, municipality size, and standard of living do not play a substantial role in the respondents' decision-making.

Chart 10. Do you agree with following statement: *"Being vaccinated with one or two doses of the vaccine against COVID-19 is sufficient"*

SINGLE CHOICE

- 12% Completely agree
- 22% Somewhat agree
- 21% Somewhat disagree
- 13% Completely disagree
- 32% I don't know / I am not able to answer

■ Completely agree
■ Somewhat agree
■ Somewhat disagree
■ Completely disagree
■ I don't know / I am not able to answer

N = Whole sample (1002 respondents)

More than one third of Czech respondents believe that being vaccinated with one or two doses of the vaccine against COVID-19 is sufficient. In contrast, a further 34% completely or somewhat disagree with this opinion.

The remaining respondents (32%) either do not know or are not willing to answer the question. This may be due to the fact that an opinion is partly formed based on scientific evidence, and these respondents do not feel educated enough to judge the science. The younger generation (respondents 18-29 years old) agree more that one or two doses of COVID-19 vaccine are sufficient – 45% of them somewhat or completely support the statement.

Chart 11. Do you agree with following statement: " *COVID-19 vaccination is somewhat more risky than beneficial*"

SINGLE CHOICE

- Completely agree
- Somewhat agree
- Somewhat disagree
- Completely disagree
- I don't know / I am not able to answer
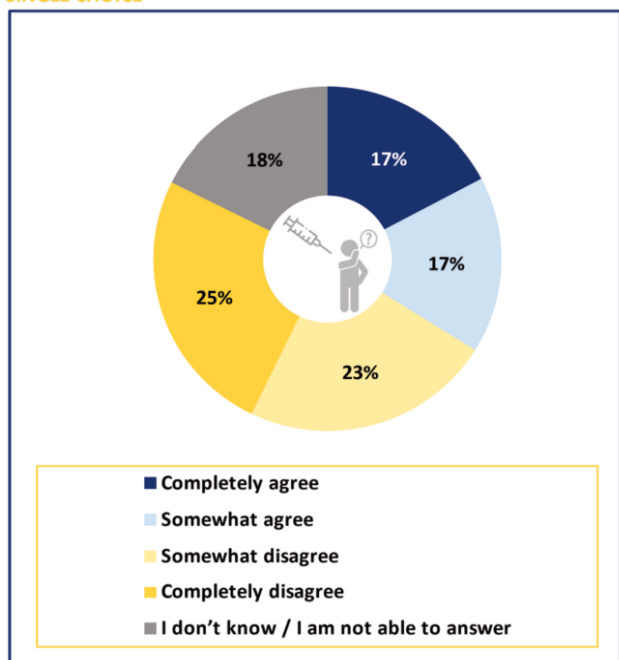
N = Whole sample (1002 respondents)

Approximately one third of Czech respondents (34%) think that COVID-19 vaccination is somewhat more risky than beneficial. This statement resonates more amongst less educated people, especially who have had a vocational education and have not graduated from high school (40%).

On the other hand, there is a generally positive opinion of vaccination amongst respondents. 48% of all respondents somewhat or completely disagree with the statement

The strongest opposition to the statement was expressed by the oldest respondents in the sample (aged 60 and above). As a result, more than half of them (55%) somewhat or completely disagree with the statement, and another 14% are not sure about the topic.

Chart 12. Do you agree with following statement: *"The Czech government used COVID-19 to strengthen its position"*

- Completely agree
- Rather agree
- Rather disagree
- Completely disagree
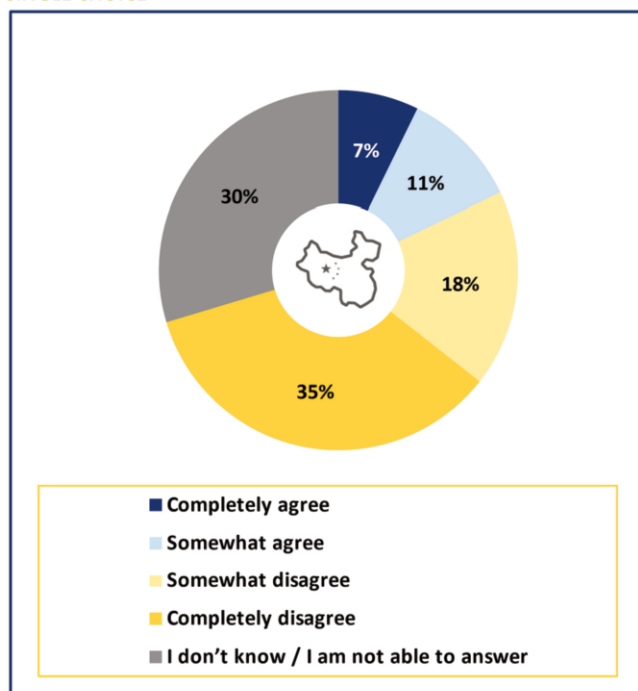- I don't know / I am not able to answer
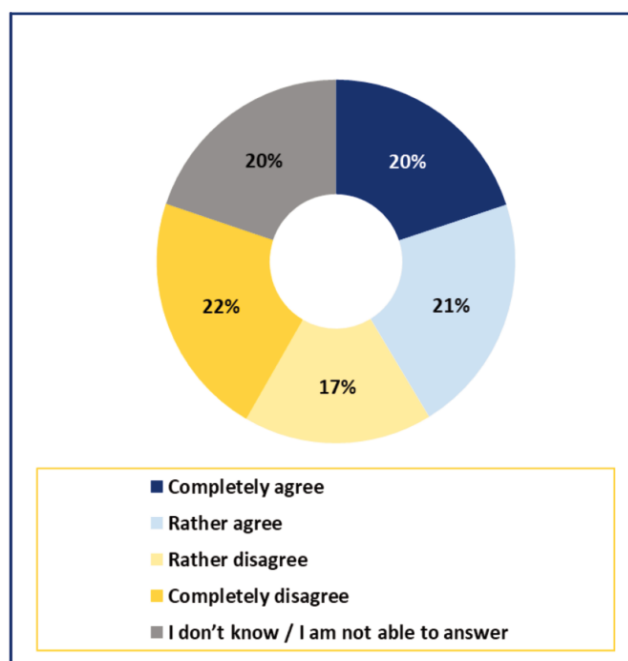
The people in our sample are not sure if the Czech government used the COVID pandemic to strengthen its position. 41% somewhat or completely agree with this statement, but a similar percentage (39%) do not share that opinion. The other fifth of respondents are not sure or do not want to answer the question.

People living in cities of up to 100,000 inhabitants "blame" the national government for misusing their position because of COVID-19. 50% of them somewhat or completely reject the statement. This is less than the national average 50% of respondents with a low standard of living, and 62% of those with very low standard of living, somewhat or completely agree with the statement.
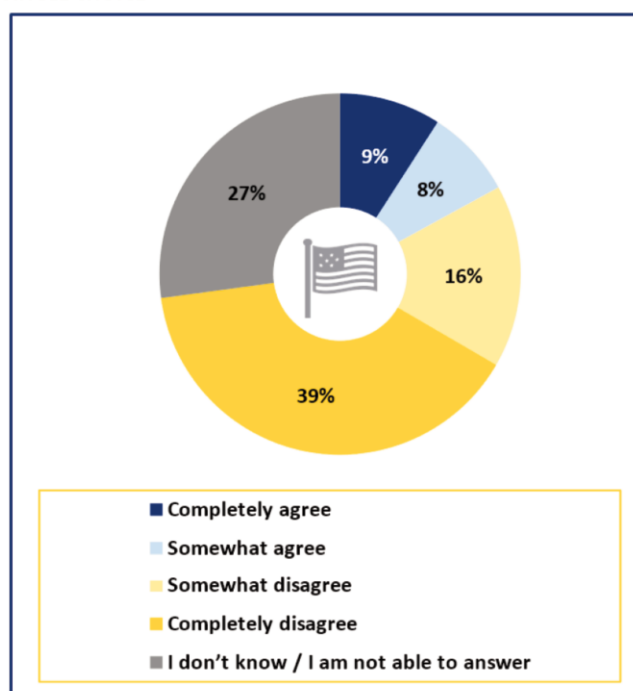
Chart 13. Do you agree with following statement: " *COVID-19 is Chinese/American political weapon*"

7%
11%
30%
18%
35%

- Completely agree
- Somewhat agree
- Somewhat disagree
- Completely disagree
- I don't know / I am not able to answer

N = Whole sample (1002 respondents)

9%
8%
27%
16%
39%

- Completely agree
- Somewhat agree
- Somewhat disagree
- Completely disagree
- I don't know / I am not able to answer

N = Whole sample (1002 respondents)

Just almost one in five Czech respondents (19%) agree that COVID-19 is a Chinese political weapon. More than half (53%) somewhat agree or completely reject the statement. The uncertainty ratio is quite high – 30% of respondents were not able or willing to answer the question. Surprisingly, women tend to agree with the statement more than men – 21% of female respondents somewhat or completely agree with the statement, whereas only 14% of men do. Middle-aged Czechs (30-59 years) also express greater concern than the younger generation (18-29 years) and pensioners (60 and above).

Similar to the previous statement, less than one fifth of respondents somewhat or strongly agree. 55% of respondents think that the statement is not valid (39% completely disagree, 16% somewhat disagree). More than one in four respondents (27%) do not know or are not able to reply to the question. In comparison with the average, the younger generation (18-29) do not agree with the statement (only 9% somewhat or completely agree). Almost one half of them (47%) also completely disagree with the statement that COVID-19 is an American political weapon. People with a higher-than-average standard of living reject the statement more than the sample average. 63% of respondents with a very high standard of living somewhat or completely disagree, and 68% of respondents who report their standard of living as high.

Chart 14. Do you agree with following statement: *"COVID-19 testing can influence people's health"*

SINGLE CHOICE

Legend:
- Completely agree
- Somewhat agree
- Somewhat disagree
- Completely disagree
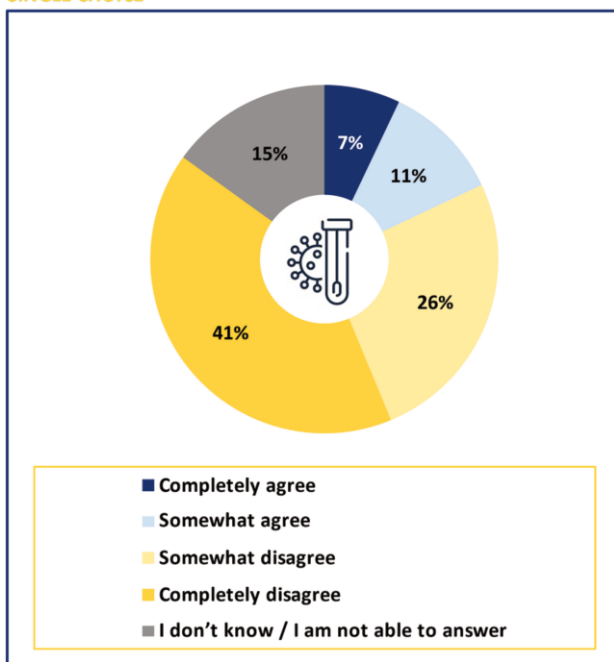- I don't know / I am not able to answer
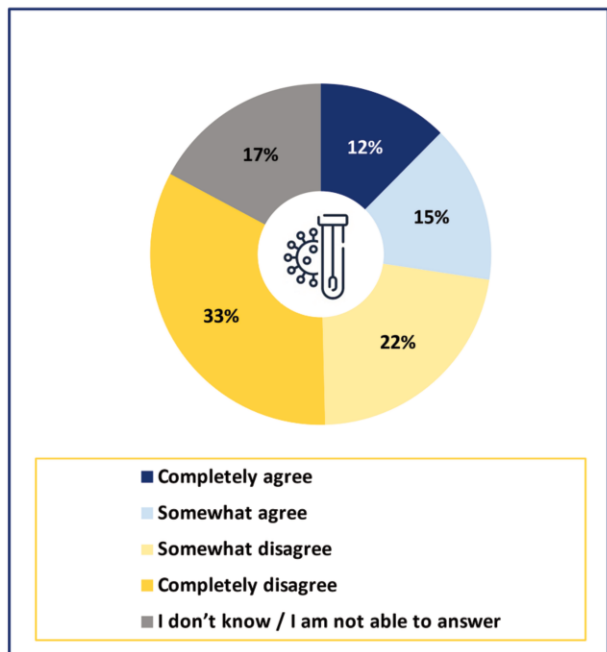
N = Whole sample (1002 respondents)

This research shows that over one fourth of the Czech population (27%) have concerns about the influence of COVID-19 testing on people's health. In contrast, half the respondents (55%) do not agree with the statement. More women than men perceive that COVID-19 testing may possibly influence people's health. 30% of women somewhat or completely agree with the statement, and 24% of male respondents somewhat or completely agree.

Chart 15. Do you agree with following statement: *"COVID-19 testing is not safe"*

SINGLE CHOICE

Legend:
- Completely agree
- Somewhat agree
- Somewhat disagree
- Completely disagree
- I don't know / I am not able to answer

N = Whole sample (1002 respondents)

The majority of the sample (69%) do not have serious doubts about the safety of COVID-19 testing. In contrast, 18% of respondents agree that COVID-19 testing is not safe (7% completely agree, 11% somewhat agree). According to the infomore.cz website, adverse reactions were mentioned for all vaccines. Disinformation websites spread misinformation and scientifically unsubstantiated states, such as vaccinations cause people to have strokes, polio, or infertility.

Chart 16. Do you agree with following statement: *"I support COVID-19 vaccination of children"*

SINGLE CHOICE

- Completely agree
- Somewhat agree
- Somewhat disagree
- Completely disagree
- I don't know / I am not able to answer
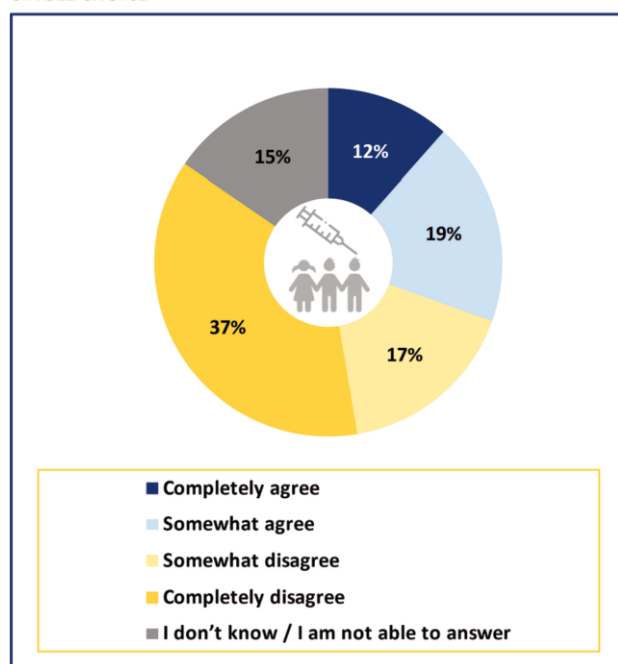
N = Whole sample (1002 respondents)

The respondents approach the COVID-19 vaccination of children more skeptically than they do vaccination in general. Only 12% of respondents completely agree that they support COVID-19 vaccination of children, and a further 19% of respondents somewhat agree. On the other hand, more than half of the sample (54%) do not support COVID-19 vaccination of children, and 37% of that percentage are completely sure in their opinion regarding this issue.

Women support COVID-19 vaccination of children even less. Hence 58% of them did not support it (somewhat or completely). Only 49% of men expressed a negative opinion.

Chart 17. Do you agree with following statement: *"I would like to vaccinate (or have already vaccinated) my child/children against COVID-19"*

SINGLE CHOICE

- Completely agree
- Somewhat agree
- Somewhat disagree
- Completely disagree
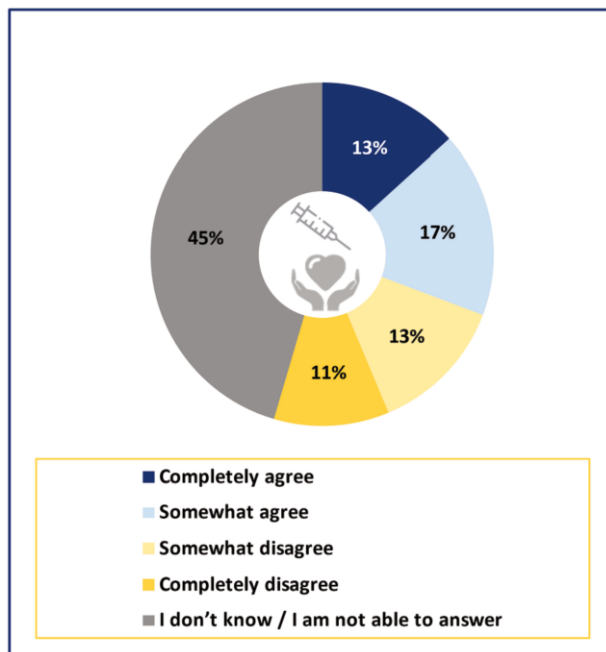- I don't know / I am not able to answer
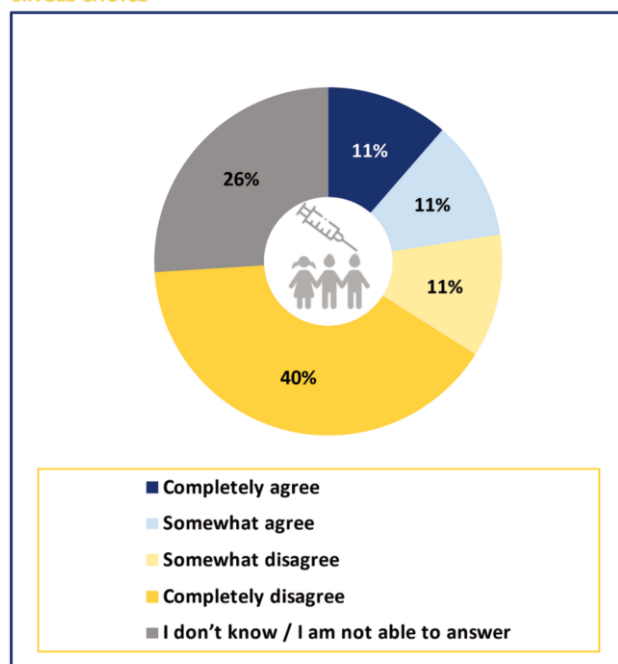
N = Whole sample (1002 respondents)

A reserved attitude towards COVID-19 vaccination of children is also evident from an unwillingness to vaccinate their own children. Only 22% of people agree with the statement, "I would like to vaccinate (or have already vaccinated) my child/ children against COVID- 19". Four in ten respondents from the sample completely disagree.

Men are slightly more open than women to the COVID-19 vaccination of children (25% men vs 20% women agree; 48% men vs 55% women disagree). The middle generation (30-44 years old) disagrees the most intensely with the COVID-19 vaccination of their children (66% somewhat or completely disagree with the statement).

Chart 18. Do you agree with following statement: *"COVID-19 vaccination can complicate pregnancy"*

SINGLE CHOICE

- ■ Completely agree
- ■ Somewhat agree
- ■ Somewhat disagree
- ■ Completely disagree
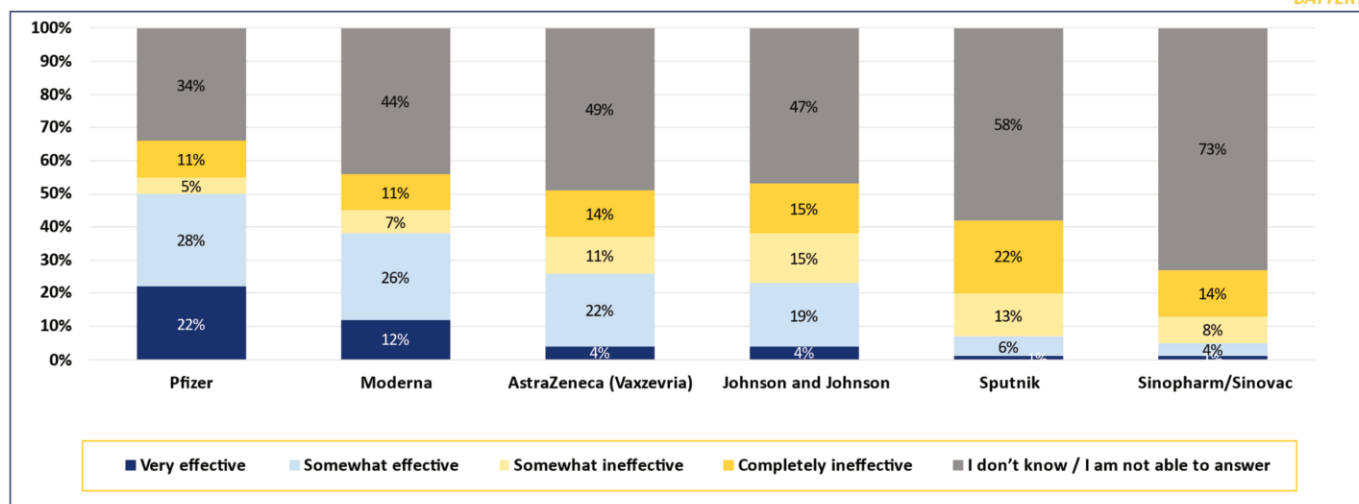- ■ I don't know / I am not able to answer

N = Whole sample (1002 respondents)

Slightly less than one third of the sample (30%) somewhat or completely agree that COVID-19 vaccination can complicate pregnancy. In contrast, 24% disagree with this statement. A relatively high percentage of respondents (45%) do not express an opinion on this issue. This may be due to a lack of specialised medical education and a reluctance to share unfounded opinions.

There has been a lot of disinformation in the Czech media about the adverse effects of vaccines on pregnant women. This has been refuted by the World Health Organization.

Chart 19. Evaluation of COVID-19 vaccine types

BATTERY

- ■ Very effective
- ■ Somewhat effective
- ■ Somewhat ineffective
- ■ Completely ineffective
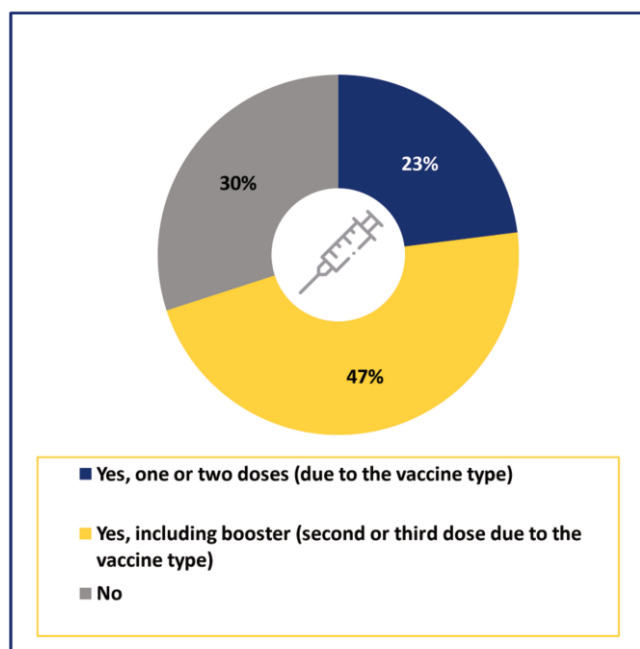- ■ I don't know / I am not able to answer

N = Whole sample (1002 respondents)

According to the respondents, the most effective vaccine is the Pfizer one (somewhat or very effective by 50% respondents). Pfizer is followed by Moderna and AstraZeneca, but more than 4 in 10 respondents are not sure about the effect of those vaccines. Also, one-fifth to one-fourth of that sample do not think those vaccines have any effect at all.

Vaccinations and vaccines have had a lot of coverage in the Czech media. According to research from the https://www.infomore.cz/ website, this topic saw a threefold increase in the average monthly number of references in the media between December 2020 and March 2021. Publicity for the vaccines they researched accounted for more than a third (36%) of the total vaccine coverage. The research shows that people trusted the Pfizer/BioNTech vaccine the most, perhaps because it was the most frequently mentioned brand in the media (34%). AstraZeneca accounted for 25% of mentions, and Moderna for 20%. Sputnik V (15%) and Johnson & Johnson (6%) had the lowest share of mentions.

Chart 20. Self-declaration of COVID-19 vaccination

SINGLE CHOICE

- Yes, one or two doses (due to the vaccine type)
- Yes, including booster (second or third dose due to the vaccine type)
- No

N = Whole sample (1002 respondents)

Seven respondents in ten (70%) stated that they have had a COVID-19 vaccination. Almost one half of them state that they had a booster (second or third dose according to the vaccine type). The other 30% stated that they are not vaccinated against COVID-19 at all.

The COVID-19 vaccination rate positively correlates with the increasing age of the respondents. In the younger age group (18–29 years) 39% have been vaccinated with one or two doses, and 29% of them have had a booster. 70% of people aged 60 and above have had a booster (and only 19% of them remain unvaccinated against COVID-19).

While talking about the education distribution and COVID-19 vaccination, the most balanced ratio of vaccinated and unvaccinated is amongst people with a high-school education. Still, 63% of these respondents are vaccinated, but over one third (38%) are not.

Conclusion

In the last few years, thanks to COVID-19, we have started to talk more about infodemia. We use this term to refer to the phenomenon of the dissemination of excessive amounts of false or inaccurate information about a health-related issue. The spread of misinformation is facilitated by specific media channels and political leaders. Misinformation and disinformation have had a significant impact on the extent of the pandemic and, for example, the vaccination against COVID-19. Sometimes it is difficult to detect this kind of false news because their creators have become very sophisticated. Some of the myths and misinformation associated with COVID-19 are very credible because they have a detailed theoretical basis containing many names, events and dates.

Our research shows that Czechs get information mainly from news websites (67%), public television (59%), friends (52%) and family (52%). The most common source of information about COVID-19 vaccination amongst the Czech population is the public service broadcaster, Česká televize (Czech TV). 68% of respondents use the Czech TV to get or verify information. Such information is also commonly verified by family or friends (32%).

Another important topic that was highly debated in the media was the vaccination against COVID-19. People needed it to travel or to visit certain establishments (such as restaurants). In the Czech Republic, more than half of the respondents supported COVID-19 vaccination. In contrast, more than one-fourth of the sample was composed of vigorous opponents of COVID-19 vaccination. Czech respondents approached the COVID-19 vaccination of children more skeptically than vaccination in general. Only 12% of respondents completely agreed that they support COVID-19 vaccination of children, and a further 19% of respondents somewhat agreed. Women support COVID-19 vaccines for children even less. A reserved attitude of Czechs towards the COVID-19 vaccination of children is also evident from the unwillingness to vaccinate their own children. Only 22% of people agree with the statement, *"I would like to have my child/children vaccinated against COVID-19 (or have already done so)"*.

Seven Czech respondents in ten (70%) stated that they are vaccinated against COVID-19. Almost half of them stated that they had a booster (second or third dose, according to the vaccine type). The remaining 30% stated that they are not vaccinated against COVID-19 at all. Czech respondents favour Pfizer and Moderna above other vaccine types.